Co-producing School-Based Mental Health and Wellbeing Interventions: A Mixed Methods Intervention Development Study

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Acknowledgments

Abbreviations Used

ALPHA – Advice Leading to Public Health Advancement

ALSPAC – Avon Longitudinal Study of Parents and Children

CAS – Complex Adaptive System

DECIPHer – Centre for the Development, Evaluation, Complexity and Implementation in Public Health Improvement

FSM – Free School Meals

HBSC – Health Behaviours in School-Aged Children

HPS – Health Promoting Schools

INDEX – IdentifyiNg and assessing different approaches to DEveloping compleX interventions

LA – Local Authority

LSOA – Lower Super Output Area

MRC – Medical Research Council

MHWB – Mental Health and Wellbeing

PC – Partridge Comprehensive

PSE – Personal and Social Education

RCT – Randomised Controlled Trial

RAG – Research Action Group

RH – Rowland High

SEL – Social and Emotional Learning

SEAL – Social and Emotional Aspects of Learning

SHRN – School Health Research Network

LT – Link Teacher

SMT – Senior Management Team

UNCRC – United Nations Convention on the Rights of the Child

WG – Welsh Government

YEO – Youth Engagement Officer

Glossary of Key Terms

Cobiquity – the conflation of co-production with other forms of participatory practice that are collaborative.

Co-production – involving individuals/communities who are usually excluded in key decision-making processes.

Context specificity – where the intervention allows individual schools to tailor programmes to their own needs.

Complex Adaptive Systems - a dynamic network of agents and characteristics where agents are constantly acting and reacting to each other, and generating emergent characteristics, that is also subsumed into a nested system structure where subsystems and suprasystems influence the system.

Critical Realism - A branch of philosophy in science which maintains that a world exists independently of human thought and perception (objectivist view), but that there is only mediated access to this objective truth through other strata of reality. The position argues that, through empirical study, theory can help to reveal the generative mechanisms that are not directly observable but drive social action.

Forms - are the multiple, adaptable intervention activities which use the resources provided to enact functions.

Framework analysis – is a matrix-based qualitative analytic method which uses a thematic framework to classify data into themes whilst separating themes by cases to explore the similarities and differences between cases.

Functions are the standardised steps in the intervention process necessary to trigger change.
Functional fidelity – the extent to which the standardised steps are implemented as planned.
Mechanisms are the causal pathways which produce change within the setting. These are split into **upstream mechanism** which are pathways which run from participants receiving the interventions to these intermediate/mediated outcomes; and downstream mechanisms

which are the connections between the mediated outcomes and the intervention outcomes on participants.

Problem-Setting – stakeholders identify and articulate the contextually situated drivers of problems, question core assumptions, and develop shared beliefs and understanding about health issues.

Problem Solving - Developing appropriate mechanism/theory to address problems.

Realist Evaluation – a type of theory driven evaluation with the aim of testing and refining interventions to determine if and how they work in specific contexts.

Social Validity – The extent to which the co-produced intervention plans are relevant and implementable in the context they were created.

Whole School Approach – - multiple intervention components work together to target change at the individual, system and community levels.

Abstract

School-based mental health and wellbeing interventions demonstrate mixed and sometimes limited effectiveness, partially attributed to a lack of fit with school needs and contexts. Increased support for stakeholder co-production to address these issues has led to a growing number of school-based health co-production intervention studies. Whilst there is an emergent effectiveness literature about these, our understanding of the different co-production types, their intervention theories and properties, and stakeholders' experiences of them is lacking.

This thesis aimed to address this through developing programme theory for the co-production of school-based health interventions. To achieve this, a mixed methods intervention development study with two sequential phases was undertaken. Phase 1 aimed to build promising intervention theory, predominantly through a systematic review of co-production studies. Subsequently, phase 2 aimed to refine this theory by delivering in two schools the co-production intervention, focusing on mental health and wellbeing; and assessing it through a process evaluation.

The phase 1 systematic review described three co-production types, with the system-level capacity-building type chosen for phase 2. This type involved the establishment of Research Action Groups (RAGs) with multiple school and external stakeholders that developed school-specific wellbeing plans. It was chosen because it provided a strong evidence base to develop theory from and was found to more likely lead to stakeholders' health ideas being delivered than other types. Theoretical gaps were addressed through stakeholder involvement, and a pilot of participatory methods to elicit students' understandings of wellbeing.

Phase 2 involved two contextually diverse case study secondary schools developing RAGs with researcher support. The process evaluation assessed implementation, context, mechanisms of change, and social validity between cases and across stakeholders. Successful implementation was due to intervention alignment with schools' perceived needs and duties, the redistribution of school resources to interventions, and intervention flexibility which accommodated school priorities and schedules. Further, the intervention adequately resourced, guided, and empowered RAGs to share problem-setting decision-making. This led to a high level of agreement between stakeholders and across schools that resultant plans were relevant and implementable in the contexts created.

However, major differences between schools on intervention embeddedness and the favourability of baseline conditions for student wellbeing and voice were found. In one case study this resulted in agents supporting the delivery of co-production, engaging in co-production processes, and the school adopting three plan priorities. Whilst in the other, the lack of staff and SMT engagement and support resulted in no plan priorities being adopted. Challenges were also found in both case studies with engaging families and undertaking problem-solving decision-making. Refinements to co-production theory to address these challenges were made.

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1   Chapter 1: Introduction

1.1   Background and Aim

Adolescence is seen as a key intervening phase for health promotion and prevention programmes to address mental health and wellbeing, with studies highlighting wellbeing deterioration (Currie et al. 2012; Page et al. 2021) and an increase in population mental health problems (Collishaw 2015; Patalay and Gage 2019). Schools have been identified as key promotion settings (Bonell et al. 2014a; Langford et al. 2014) and Welsh educational policy (Welsh Government 2019) forefronts wellbeing. However, schools show variability in the embeddedness of health promotion policies and practices (Littlecott. et al. 2018).

Evaluations of school-based interventions have shown mixed and sometimes limited effectiveness, irrespective of whether they focus on mental health education (Werner-Seidler et al. 2017; Johnstone et al. 2018) or adopt a multicomponent approach such as Social and Emotional Learning (SEL) (Humphrey et al. 2010; Clarke et al. 2021) or Health Promoting Schools (HPS) (Langford et al. 2014). Evidence suggests this is partially a result of implementation barriers such as a lack of contextual fit and inadequate targeting of individual school needs (Humphrey et al. 2010; Durlak 2016). Also, implementation can be enabled through increasing stakeholder buy-in and allowing interventions to be tailored to contexts (Hung et al. 2014; Sadjadi et al. 2021). This is symptomatic of a wider lack of contextual contingency between interventions and the settings they are delivered in (Craig et al. 2018).

Co-production has been foregrounded as a means to better attend to these issues in intervention development processes. It is believed co-production can increase intervention relevance and implementation, leading to better outcomes (Craig et al. 2008; Hawe et al. 2009; Gitlin 2013; Moore et al. 2019). However, co-production is a complex, contested construct with varying definitions that can involve a multitude of stakeholders and functions (Oliver et al. 2019; Williams et al. 2020b). Specifically, in schools, the use of stakeholder co-production in interventions is growing, with the evidence base for effectiveness emergent but promising (i.e. Bonell et al. 2018; Ozer and Douglas 2013). However, there remains equivocality in terms of understanding the different co-production types, their intervention theories and properties, and stakeholders' experiences of them. To address this and bring clarity to the field, the central thesis aim was to develop the theory of co-production for school-based interventions.

1.2   Research Design, Phases and Questions

To achieve the theses central aim, a mixed methods intervention development study was conducted with the two objectives to build and refine co-production theory. These objectives were met through two phases conducted sequentially.

1.2.1   Phase 1: Building Co-Production Programme Theory

The first phase built promising co-production theory predominantly through a systematic review of co-produced school-based health intervention studies, with a thematic synthesis of stakeholders' views. The review was complemented by stakeholder involvement with an established young people's advisory group, and a pilot of participatory methods used to elicit students' understandings of wellbeing. The research questions were:

- *What types of co-production are utilised in developing secondary school-based health interventions?*
- *What is the most appropriate type of co-production for phase 2 of this thesis?*
- *What is the underpinning theory of change and intervention properties for this type?*

1.2.2   Phase 2: Refining Co-Production Programme Theory

The second phase assessed and refined the co-production theory through a mixed methods process evaluation with two case study secondary schools where co-production was delivered. The research questions were:

- *Were the co-production functions implemented with fidelity and what is the nature of any adaptations?*
- *How does school context affect implementation?*
- *Did the mechanisms of change work as hypothesised?*
- *How were mechanisms affected by the resources and activities provided, participants' reasoning and responses, and contextual conditions?*
- *Can co-production support school stakeholders to produce valid and implementable wellbeing intervention plans?*

1.3   Overview of chapters

Chapter 2 presents an overview of the relevant literature. It sets out the differing understandings of mental health and wellbeing (MHWB) and acknowledges adolescence as a key intervening phase for these issues. It continues by discussing the enablers and barriers to

addressing MHWB through school improvement practices and school-based health interventions. Implementation issues due to a lack of fit with context are foregrounded as the main problem, while co-production has been offered as the solution. Whilst intervention development guidance and frameworks do have value, they do not support context-specific co-production and were not developed based on school settings so were not used in this thesis. Drawing attention to a few effective co-produced school-based health interventions highlights how this is an indistinct field which requires clarity to progress. The chapter closes by clearly defining the parameters of co-production used in this thesis.

Chapter 3 presents the overall design of this thesis as a two-phase, mixed methods intervention development study used to build and refine co-production programme theory. It articulates complex systems thinking as the theoretical lens underpinning the study, considering the philosophical and operational implications of this. It continues by justifying INDEX Guidance to structure the overall research design and maps the study against the guidance's key actions.

Chapter 4 sets out the phase 1 methodology and the results which were used to build co-production theory. The methodologies for the systematic review and thematic synthesis, the stakeholder involvement, and the pilot study are described in turn. The key results show the systematic review located three types of school-based co-production. The system-level capacity-building type was used in phase 2 as stakeholders reported fewer constraints on decision-making than other types, increasing the likelihood of the co-produced health activities being delivered. Also, four of the located studies were extensive process evaluations which provided a strong evidence base to develop theory from.

The intervention involves the establishment of RAGs with multiple school and external stakeholders that develop school-specific wellbeing plans with the support of an external researcher. To inform RAGs of the school's wellbeing context, the RAG students take part in a photography project to elicit their understandings of wellbeing, and the results from a school-specific student health survey are obtained. During four meetings, the RAGs use these data and researcher-developed activities to share decision-making on problem-setting and problem-solving functions. The resultant wellbeing priorities and potential solutions are

used to form the school's wellbeing plans. The chapter provides intervention clarity through finalising with a logic model, and a Function and Form Matrix.

Chapter 5 outlines the phase 2 methodology. It outlines a process evaluation framework in which to assess the intervention, focused on the four domains of implementation, context, mechanisms of change, and social validity. The use of a case study methodology is justified, with two contextually diverse schools purposively sampled to provide an idiographic inquiry to understand cases in depth. The two schools are given the pseudonyms Rowland High and Partridge Comprehensive. Process evaluation data collection included a researcher diary (n=45 entries), observations of student photography (n=21), and RAG meetings (n=8). Post-intervention, surveys and individual interviews with RAG students (n=18) and staff (n=8), and two school-specific Senior Management Team (SMT) focus groups (n=10 total) were conducted. Three process evaluation findings chapters follow.

Chapter 6 explores implementation through functional fidelity and explains findings through the scrutiny of contextual conditions that supported or compromised delivery. Findings demonstrated similarity between schools on eight fidelity descriptors (80%). Overall, fidelity was high for both schools due to the perceived alignment of the intervention with wellbeing and student voice, and because it accommodated school priorities and functioning. High fidelity was also attributed to schools realigning four synergistic school resources in the Link Teacher (LT; the 'link' between the researcher and other school stakeholders), and their harnessing of routine activity settings, information systems, and school space. Low fidelity was found due to difficulties engaging members of parallel systems such as families in RAGs. Whereas differences in two fidelity descriptors (20%) were accounted for by the differences in intervention embeddedness and coupling with the baseline context. The intensive, centralised embedding and unfavourable conditions for student wellbeing and voice in Rowland were contrasted to Partridge's extensive, dispersed spread of intervention information and responsibility, and cultural alignment with the two intervention tenets. This resulted in a washing away of the plan's priorities in the former school (low fidelity), and a lasting footprint in the latter as the SMT adopted three priorities (high fidelity).

Chapter 7 assesses the causal mechanisms linked to decision-making, centring on how shared decision-making functioned and what accounted for this functioning. The overall mechanism

of empowering stakeholders to participate in shared decision-making was activated through the external facilitator (researcher) and a clear, structured co-production process which resulted in finalised wellbeing plans. However, the functioning of antecedent sub-mechanisms fluctuated. RAG members successfully developed good relationships organically through members having pre-existing ties and because participants interacted as the intervention progressed. Further, problem-setting decision-making was successful as RAGs worked cooperatively, identified shared decision-making criteria, and were supported by the combination of information from the students' photography project, the school survey data, and group discussions. However, RAG diversity was tempered for staff involvement by the baseline contextual 'buy-in' for wellbeing, and for students, as their intervention responses were disparate reflecting their positions in the school systems. Specifically in Partridge, student diversity was limited by the omission of disengaged students. Also, aligning closely to student voice meant staff associated the intervention with school councils potentially at the expense of external member recruitment, and the retention of staff at Rowland. Undertaking problem-solving decision-making also proved challenging in both schools because RAGs fixated on discussing the wellbeing problems, and they had cognitive and knowledge limitations.

Chapter 8 explores if and why resultant school wellbeing plans were considered socially valid. The two measures of social validity, plan relevance and likelihood of implementation, were scored highly by RAG members, although, views were mitigated in specific ways. In terms of relevance, the difficulty in both schools to recruit parents to RAGs resulted in a failure to prioritise valid issues which crossed home-school boundaries, and problem-solving difficulties accounted for issues with the relevance of solutions. Also, in Partridge, the omission of a mental health priority in their school plan was attributed to lack of RAG student diversity. Likelihood of implementing plans was mitigated through the contextual conditions found in Chapter 6. Hence, Rowland participants felt they did not have resources and commitment so the Link Teacher would need to continue their intensive support without help, but Partridge stakeholders' thought they could work harmoniously to realign and obtain resources. Relevance and the likelihood of implementation were also found to be dynamic concepts in the complex, nested school systems. This meant plans needed to be conceptualised as working documents, as continual school changes affected both measures,

and the complexity of school decision-making requires processes to mitigate students raising their hopes of change before SMT have committed to plans.

Chapter 9 draws together the empirical findings from the three process evaluation chapters resulting in five recommendations to refine the theory for school-based co-production. Changes to intervention theory and properties are shown in a modified logic model and Function and Form Matrix. Chapter 10 closes the thesis by revisiting the aim and rationale and discussing the implications of this intervention development study. Implications are considered for the co-production of school-based MHWB interventions, for intervention development studies, for using complex systems thinking in intervention research, and for Welsh policy and practice. Lastly, study limitations are discussed.

2 Chapter 2: Co-production of School-Based Mental Health and Wellbeing Interventions: An Indistinct Field in Need of Clarity

This chapter commences by setting out the uncertainty in the definition of MHWB. It continues by describing the prevalent adolescent MHWB issues which set adolescence as a key intervening phase for health promotion within school settings. Further, it contends that whilst Welsh education policy and schools aspire to embed health improvement practice, teacher and structural level barriers exist which hinder the realisation of these aspirations. Also, an abundance of school-based health outcome evaluations report mixed and sometimes limited effectiveness, partially attributed to implementation problems. This is shown through qualitative evidence from Social and Emotional Learning and Health Promoting Schools programmes which mirror the wider recognition of the contextual contingency of interventions. The chapter progresses by considering the recent move in intervention research to attend to context as a way of addressing these issues.

Most notably for this PhD is the foregrounding of stakeholder co-production as a vehicle to better attend to context during intervention development. Attention is drawn to the progress made in intervention development guidance and frameworks, but the chapter demonstrates how they are limited in directing school-based context-specific co-production processes. Also, whilst there have been school-based health interventions developed through co-production, this is an indistinct field which requires clarity of definition and form to progress. Definitional issues are addressed in the closing of the chapter through setting young people as the main stakeholders, and problem-setting and solving as the key decision-making processes within school-based health co-production.

2.1 Mental Health and Wellbeing

Health has been conceptualised from two related but somewhat distinctive foci: the pathogenic and the salutogenic (Antonosky 1996). Historically, the understanding of MHWB has been dominated by a pathogenic focus which addresses the prevention of risk factors and, in turn, disease. Recognised mental and behavioural disorders have been defined for diagnosis by ICD (International Classification of Diseases) and DSM (Diagnostic and Statistical Manual of Mental Disorders) tools. Further, intervention research originally understood and measured mental health through an absence of diagnosable mental and/or behavioural problems. For example, The Gatehouse project

(Bond et al. 2004) utilised the clinical interview schedule-revised (CIS-R) to assess student anxiety and depressive symptoms labelling individuals as demonstrating minor psychiatric morbidity or not. Other common scales include the Strength and Difficulties Questionnaire (SDQ) (Goodman 2001) and the Revised Child Anxiety and Depression Scale (RCADS) (Chorpita et al. 2005).

The salutogenic focus, first theorised by Antonovsky (1979), contests the validity of utilising an absence of disease or disorder as indicative of health. Within the salutogenic focus of mental health, key concepts include wellbeing and the quality of an individual's life by concentrating on the whole person (Jensen et al. 2017). The salutogenic focus has been further divided into subjective and objective areas (Ross et al. 2020). With subjective wellbeing linked to feelings of happiness and life satisfaction, where individuals seek pleasure and avoid negative affect (hedonic wellbeing), and relating to human functioning including the positive development of the individual and relations with others, the self-realisation of potential, and having purpose to life (eudaimonic wellbeing) (Ryan and Deci 2001; Dodge 2012; Ross et al. 2020). Whereas objective wellbeing links to an individual's resources (e.g. money, shelter and food) and social attributes (e.g. social support, voice and agency, and access to education and health services) (Western and Tomaszewski 2016).

As MHWB is so complex it is argued that a single definition cannot adequately represent all social and cultural understandings (Galderisi et al. 2015), all perceptions of health and illness (Barry 2009), and all people in all situations. This definitional challenge has resulted in a range of conceptual descriptions, and expressions of the dimensions needed to operationalise MHWB, with more continually being developed (Dodge 2012). These differ in the degree to which they focus on the absence of mental illness, on hedonic feelings, eudaimonic functioning, and the objective resources and support individuals have. The following World Health Organisation definition, cited in the Welsh Government's 'Together for Mental Health' (2012, p. 11) strategy, is debatably the most encompassing so was used in this thesis:

"*A positive physical, social and mental state; it is not just the absence of pain, discomfort and incapacity. It requires that basic needs are met, that individuals have a sense of purpose, that they feel able to achieve important personal goals and participate in society. It is enhanced by conditions that include supportive personal relationships, strong and*

inclusive communities, good health, financial and personal security, rewarding employment and a healthy and attractive environment".

This definition also demonstrates that whilst wellbeing can be considered as a much broader concept that mental health, understandings of MHWB still retain a minor focus on illness. This is also shown in how MHWB is measured. For example, a UK based children's wellbeing review by the Office of National Statistic's resulted in a large wellbeing framework which consisted of eight domains with 71 indicators. The framework domains are personal wellbeing; relationships; health; what we do; where we live; household finances; schools and skills; and future and voice. With indicators ranging from data about young people's mental health symptoms as well as happiness, social media use, sleep, engagement in risk behaviours, and whether they have quarrelled with their parents or feel connected to school (Office of National Statistics 2020). Further, in research, prevalence and evaluation data of school-based MHWB interventions tend to utilise a mixed measurement taxonomy inclusive of wellbeing and mental illness, for example, the Wellbeing in Secondary Education (WISE) study (Kidger et al. 2016) used both the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) (Tennant et al. 2007), which measures subjective hedonic and eudaimonic properties, and the SDQ.

Therefore this thesis draws on data from both the pathogenic and salutogenic approaches. The following three sections use both of these to justify MHWB as a prevention priority, to emphasis the barriers to schools addressing MHWB; and to evidence the limited effectiveness of current MHWB interventions.

2.2   Adolescent MHWB as a Promotion Priority

Adolescence is demonstrably a key period for health promotion interventions to target MHWB for four reasons. First, there is a patterning of wellbeing deterioration for individuals throughout the adolescent years which has been accompanied by an increase in population mental health problems. Mean life satisfaction scores across all 45 countries/regions that took part in the 2017/18 Health Behaviour in School-aged Children (HBSC) survey showed a decline from 8.3 at 11 years old to 7.4 at 15 years old (Inchley et al. 2020). Welsh adolescent data has shown a more marked decrease though with the reporting of low life satisfaction increasing from 13% to 25% between the ages of 11 and 16 (Page et al. 2021). Concurrently,

population level mental health problems during adolescence are high and rising, with some researchers arguing we have reached a crisis point in the UK (Gunnell et al. 2018). This has been demonstrated through 2015 Millennium Cohort Study estimates which suggest the number of 14-year-olds exhibiting depression symptoms above clinical cut-off, as measured by the Short Mood and Feelings Questionnaire, was as high as 16.4% (n=11,318); an increase from 9.0% (n= 5,627) in the ALSPAC (Avon Longitudinal Study of Parents and Children) cohort in 2005 (Patalay and Gage 2019). This increasing trend has been robustly demonstrated in a number of UK and international studies of adolescent affective disorders (Collishaw 2015).

Secondly, the numbers of young people engaging in physical health risk behaviours, associated with mental health problems (Campbell et al. 2020), is high and increases with age during adolescence. UK data from 2,657 15–16-year-olds, also from ALSPAC, showed that only 4% of males and 5% of females reported not engaging in any health risk behaviours. The prevalence of individual risk behaviours were found to be as high as 74% for physical inactivity, 42% for being involved in anti-social or criminal behaviour, 34% for hazardous drinking, and 19% for engaging in self-harming behaviour (MacArthur et al. 2012). The HBSC survey results from 42 countries also provides clear support for the increase in health risk behaviours during these formative years (Inchley et al. 2016). For example, at age 11 an average of 1% report being drunk on two or more occasions but by age 15 this has increased to 22%.

Thirdly, during the adolescent years, there is a moderate likelihood of being exposed to determinants that affect MHWB, such as peer bullying (Bond et al. 2001a; Arseneault et al. 2010; Bonell et al. 2015). Peer bullying is inclusive of: physical, verbal, and relational aggression, i.e. behaviours such as intentional exclusion from social groups, spreading rumours about other students, name calling, and hitting peers (Bonell et al. 2015), and, more recently, cyberbullying. The reported prevalence of peer bullying from a UK sample of 2,275 11–17-year-olds was as high as 35.3% in the last year and 59.5% during an individual's lifetime (Radford et al. 2011). Newer HBSC (Inchley et al. 2020) estimates showed 10% of adolescents reported being bullied at least two or three times in the last couple of months irrespective of gender; however, cyberbullying patterned differently, with boys having an

equal chance of being perpetrators or victims (12%), but girls being almost twice as likely to report being victims (14%) rather than perpetrators (8%).

Fourthly, the preceding MHWB problems, health risk behaviours initiated in adolescence, and the effects of exposure to bullying, all track into adulthood. For example, an Australian 14-year prospective cohort study found 734 adolescents (from 1,943) reported high symptom levels for depression and anxiety at a mean age of 15.5. Almost 60% of this subgroup went on to have at least one more mental health episode in their early adulthood (up to age 29) (Patton et al. 2014). Additionally, health risk behaviours within the domains of vehicle-related injury risk, criminal and antisocial behaviour, substance use, self-harm, sexual health, and physical inactivity have been found to track from adolescence into early adulthood in a UK-based cohort study (n=5591) (Campbell et al. 2020). It was found that adverse mental health outcomes increased with the number of risk behaviours exhibited in early adolescence. Lastly, tentative results from research on the longitudinal effects of early life stressors suggest that biological changes due to exposure to bullying in adolescence may account for some influence on long-term psychiatric health (Price et al. 2013).

Decreasing adolescent life satisfaction accompanied by the high and rising levels of mental health problems; the rising engagement in health risk behaviours; and the likelihood of being exposed to bullying, all of which can affect adult MHWB demonstrate adolescence as a key intervening phase for wellbeing promotion. This logic has led to an abundance of health promotion practices and interventions based in secondary schools. The next two sections will set the background for this study by outlining why schools are appropriate health promotion settings, the barriers for schools to undertake health promotion, and the mixed effectiveness of school-based health interventions.

2.3   Schools as Health Promotion Settings

Secondary schools are useful settings to target MHWB issues for several reasons. Pragmatically, the majority of young people spend large amounts of their time at school during their formative years (Langford et al. 2014). They also present as an appropriate setting because a reciprocal relationship between student wellbeing and educational outcomes has been found (Bonell et al. 2014a). This demonstrates students with better health and wellbeing will have higher academic attainment (Suhrcke and Nieves 2011), and those who

are highly educated have a better health and wellbeing status (Bradley and Greene 2013). Additionally, there is the potential effect of school context on student MHWB, for example, school-level differences in bullying and aggressive behaviours have been shown to still hold after adjusting for student level confounders (Bonell et al. 2013b). Further, taking action to support health and wellbeing in schools has shown promising signs. Cross-sectional evidence showed schools in Wales that engage in more health activities through policies and practice have better educational outcomes (Littlecott. et al. 2018) and, for more deprived schools, better attendance too (Long et al. 2017). Hence emergent evidence is building to demonstrate the case for schools to engage in health promotion as a mechanism to support educational priorities (Bonell et al. 2014a), contrary to the 'zero-sum' hypothesis i.e. the belief that focusing resources on health improvement activity can negatively impact educational outcomes.

A long and continuing tradition exists in Wales for schools to positively contribute to student MHWB. Recognition of health promotion as important to education was shown originally in the UK by Section 28 of the Education Act 2005 (UK Government 2005), as Inspectorates were tasked with reporting the contributions schools made to student wellbeing. In Wales, the School Inspectorate has continued to produce guidance outlining how wellbeing will be assessed, including that all pupils should feel healthy and safe in school, and a part of school life, through community involvement and decision-making (Estyn 2015). This progressive thinking is also found in documents linked to Personal and Social Education (PSE) in schools (Department for Children Education Lifelong Learning and Skills 2008a), the Welsh Government (WG) strategy 'Together for Mental Health' (Welsh Government 2012) and the School Effectiveness Framework (Department for Children Education Lifelong Learning and Skills 2008b). Continuing in this vein, the Welsh Government has reiterated its clear commitment to improving mental wellbeing in two ways. Firstly, through the introduction of statutory guidance - the Framework On Embedding A Whole School Approach To Emotional And Mental Well-Being – which necessitates every school to embed a whole school approach to supporting wellbeing (Welsh Government 2021). Secondly, through the proposed school Curriculum for Wales 2022, which promisingly forefronts health and wellbeing as one of the six areas of learning alongside traditional subjects like mathematics, science, and literacy (Welsh Government 2019).

Regardless of the aspirations of Welsh educational policy to attend to health promotion in schools, currently institutions can struggle to achieve this. Solely considering health education, a review of the Welsh curriculum, known colloquially as the Donaldson Report (Donaldson 2015), stated a radical improvement in PSE, especially in Key Stage 3, was needed. Thinking more holistically about health promotion, research from 45% (n=100) of Welsh secondary schools used a composite measure for embeddedness of health promotion policies and practices. The measure brought together scores for the three Health Promoting School (HPS) domains of health education, school ethos, and engaging family and community. On a self-report 0-3 scale the variability of implementation ranged from 0.31 – 2.43 with a mean of 1.40 (Littlecott. et al. 2018), demonstrating there is still work to do for schools to achieve holistic, embedded health promotion.

Barriers to undertaking health promotion in schools have been shown at the teacher and school levels. At the teacher level, the Saving and Empowering Young Lives in Europe study was undertaken with 2,485 teachers from 158 schools in 11 European countries. The results demonstrated stronger teacher belief in an ability to help students was predicted by increased mental health knowledge and a desire to be educated in this area (Sisask et al. 2014). However, a small-scale study of 14 staff from eight schools in England found teachers felt unequipped to deal with the range of MHWB tasks they are asked to deal with, e.g. providing health curricula and pastoral care, identifying and referring students, as well as acting as positive role models. They felt teacher training did not equip them for these tasks and better initial and on-going training was needed (Kidger et al. 2009). Similar results were found in a further study with 32 teachers but this also showed teachers wanted more opportunities to raise awareness and discuss mental health within schools (Rothì et al. 2008). Although MHWB training for teachers has been developed (PSHE Association 2016) and an abundance of toolkits produced by third sector organisations (for example, NSPCC Date unknown), their use, usability, and effectiveness is unknown.

Welsh-based research has also elaborated on the structural barriers to health promotion in schools. Welsh schools involved in the national School Health Research Network (SHRN) are provided with school-level needs assessments detailing the prevalence of health and wellbeing issues, gender effects, and spread across the school year groups, grounding the school-level data against the national averages (School Health Research Network 2021).

Littlecott (2016) conducted interviews with the network coordinator, school staff, and parents, which highlighted barriers to addressing school-level needs due to a lack of infrastructure to support wellbeing in schools, and the omission of non-teaching roles with the time, capacity, and power to support the embedding of wellbeing practice. Participants were also cognisant embedding structural change takes a long time and requires knowledge of the current landscape of the school, and therefore is dependent on the specific person leading this task. As this research took place in the early years of SHRN which has since expanded to include all Welsh secondary schools, up-to-date qualitative research could help to elaborate on both teacher and structural challenges to undertake health promotion. Of particular interest would be how schools with higher composite measures for embeddedness have overcome such challenges.

An alternative to requiring school personnel to take on health promotion has been provided by school-based MHWB interventions. Many of these interventions are empirically tested for effectiveness, elaborated on in the following section.

2.4   Mixed Effectiveness of School-Based MHWB Interventions

Many school-based MHWB interventions exist which target varying social determinants that can occur at a range of socio-ecological levels (McLeroy et al. 1988). At the individual level, prevention of depression and anxiety has most consistently been targeted through including elements of cognitive behavioural therapy in classroom education, to regulate emotions and develop cognitive skills or coping strategies (e.g.Stallard et al. 2012; Stallard 2013; Stallard et al. 2014; Ahlen et al. 2018; Urao et al. 2021). Whereas the combining of individual and interpersonal level determinants susceptible to change has been most frequently operationalised through social and emotional learning (SEL) (e.g. Humphrey et al. 2010; Knight et al. 2019; Collaborative for Academic Social and Emotional Learning 2020; Kelley et al. 2021). Within the UK, there has been some consistency through defining the five SEL domains of developing self-awareness, self-regulation, motivation, empathy, and social skills (Department for Children Schools and Families 2007; Humphrey et al. 2010). However, there has been a recognition within SEL that whilst mastering competencies may go some way to promoting wellbeing, this needs to be as part of a settings approach (Humphrey et al. 2010; Bell 2014; Collaborative for Academic Social and Emotional Learning 2020) where

multiple intervention components work together to target change at the individual and system levels.

The settings approach further draws on multifarious interpersonal and school-level determinants (e.g. Bond et al. 2004; Libbey 2004; Kidger et al. 2012). A School Climate research review including 206 citations distilled concepts into the following five highly interdependent and correlated domains (Thapa et al. 2013): Safety, which involves social and emotional safety linked to areas such as bullying, violence and aggression, and student behaviour management; Relationships, both between students and with their teachers, as well as inter-racial interactions and feelings of inclusion and mutual respect; Teaching and Learning, which involves promoting students' abilities through cooperative learning, group cohesion, and mutual trust; The Institutional Environment, delineated as the need for school connectedness and engagement, as well as an understanding of the layout and surroundings, and the adequacy of resources. Lastly, the review highlighted that School Improvement Processes were needed to change and constantly reform schools.

Further still, community factors such as engaging parents in wellbeing promotion or involving local communities through forums have been targeted in programmes (Patton et al. 2003; Humphrey et al. 2010; Sawyer et al. 2010; Pössel et al. 2018). Whilst these have been considered in SEL thinking within UK programmes such as Social and Emotional Aspects of Learning (SEAL) (Humphrey et al. 2010), they have most frequently been targeted in whole school interventions linked to the HPS framework (World Health Organization 1997). The HPS conceptualisation is variable, but the approach necessitates targeting determinants through individual-level curricula as well as making change at the setting-level (through altering school climate, ethos, and/or policies and practices) and the community level (through engaging members in supporting the focus of programmes) (Langford et al. 2016; Sadjadi et al. 2021). The approach further acknowledges how agency and structure influence each other and the determinants of health (McLeroy et al. 1988).

An abundance of research has been conducted internationally on mental health education programmes and whole school MHWB interventions but they show mixed and sometimes limited effectiveness. This has been demonstrated for mental health education programmes through a meta-analysis of 14 Randomised Control Trials (RCTs) accumulatively including

5,970 students (Johnstone et al. 2018). Small significant effects in depression symptoms were found post-intervention and in the long-term (12 months plus) but not in the short-term (6-11 months). This was attributed to short-term and long-term follow-ups not being reported by the same studies. However the meta-analysis also showed that anxiety symptoms between intervention and control participants did not differ at any follow-up points. Whilst other meta-analyses have found evidence on anxiety symptoms post-intervention, they have also shown that these small effects do not prevail at 12 month follow-ups (e.g. Werner-Seidler et al. 2017). Education interventions have been criticised more generally because of their focus on the pathogenic understanding of mental health and, hence, their targeting of the characteristics of students with a paucity of attention to school-level effects (Hawe et al. 2015).

Whole-school interventions have demonstrated limited mixed effects as well, however. For example, a systematic review (Clarke et al. 2021) incorporated 13 trials of SEL interventions conducted in North America or Europe between 2017-2020. It found strong evidence of a small to moderate impact on student's social and emotional skills and symptoms of depression and anxiety. However, the same review also concluded that this impact was limited in most studies to short-term follow-ups (3 months post-intervention) with a paucity of evidence of longer term impacts (between 3 and 20 months). Whilst a Cochrane systematic review of 67 HPS cluster RCTs found positive effects for weight, physical activity, fruit and vegetable intake, smoking, and being bullied; no effects for violence and bullying others, or negative intervention effects for mental health, were found (Langford et al. 2014). However, the limited number of studies associated with mental health outcomes (n=2) and violence (n=2) (Langford et al. 2016) demonstrates more research is needed to understand if HPS can be effective in the field of MHWB.

2.5   Implementation of School-Based Interventions

The mixed effectiveness of school-based interventions has been partially attributed to how programmes are implemented. This is demonstrated in both SEL (Humphrey et al. 2010; Evans et al. 2015a; Dowling and Barry 2020) and HPS intervention evidence (Hung et al. 2014; Sadjadi et al. 2021).

In SEL interventions, variability in implementation has been shown to affect outcomes. For example, a cluster RCT of the MindOut programme was conducted in 32 Irish secondary schools with 675 15–18-year-olds. It was reported that the programme had significant positive effects on students' short-term outcomes such as coping skills and emotional regulation but not on longer term outcomes such as students' well-being, and academic performance (Dowling et al. 2019). However, when accounting for differences in implementation quality in a subset of schools (n=16), the interventions' positive effects were only observed in the high (n=8) and not low (n=8) implementation schools (Dowling and Barry 2020). Whilst implementation was measured mainly through teachers' and students' self-report rather than systematic observations, the use of a comprehensive composite implementation measure of the four dimensions of dosage, adherence, quality of delivery, and participant responsiveness provided a more reliable measure than previous studies.

Further this variability in SEL implementation has been shown to be affected by a range of barriers and enablers. For example, narrative reviews of SEL (Durlak 2016) have highlighted that broader and community-level factors (a developed theoretical understanding of the programme, adequate funding, and alignment with educational policies), professional development factors (training of delivery staff and on-going support), and school-level factors (compatibility with schools priorities, vision, and needs) affect implementation. For school-level factors it has been long documented that implementation enablers and barriers have included: the readiness of the schools to deliver and integrate interventions; the susceptibility of organisations to change; the quality of delivery; and contextual relevance. Contextual relevance being elaborated as the philosophical fit with school or teachers' ideals, the practical fit with pedagogical style and resources, and the alignment with school goals and needs (Greenberg et al. 2005; Durlak and DuPre 2008; Forman et al. 2008; Humphrey et al. 2010).

Similar barriers and enablers have been found in HPS programmes. The HPS Cochrane review found that most studies omitted detailed descriptions of implementation of the three levels of the framework, which resulted in a lack of contextual or process data (Langford et al. 2016). However, a more recent systematic review (Sadjadi et al. 2021) of 17 HPS interventions, specifically targeting bullying and violence, identified two overarching synergistic factors that enabled implementation. These were intervention characteristics and

stakeholder buy-in. Intervention characteristics enabled implementation when there was in-built flexibility, allowing tailoring or the development of context-specific actions that met the needs of the school and, hence, the needs of the student population. Stakeholders' buy-in was important to ensure they committed to and dedicated time to support the HPS approach. Buy-in was increased by: the involvement of students, parents, staff, and school leaders; the positive relationships between these stakeholders; and links to higher level influences such as national policy. Again this evidence has been reported in other systematic reviews of qualitative evidence to understand enablers to enacting the HPS framework (e.g. Hung et al. 2014).

The barriers and enablers to implementation raised by evidence from SEL and HPS programmes mirrors wider recognition of the contextual contingency of interventions (Craig et al. 2018). This has led to major concurrent changes in intervention research which will be expounded in the following sections. Section 2.6 explains how the incorporation of contextual contingency has resulted in a recent shift in the conceptualisation of interventions. Section 2.7 demonstrates that there has been an increased drive for interventions to be co-produced to develop interventions based on more contextualised theories (Moore et al. 2019), but that recent progressions in intervention development guidance and frameworks are neither context-specific nor developed for schools. Section 2.8 highlights a few promising co-produced school-based interventions but highlights that practice has been piecemeal, and there is a need to develop our understanding of co-production. Drawing on the wider co-production literature, section 2.9 defines the parameters for school-based co-production which will be used in this thesis.

2.6   Reconceptualising Interventions as 'Events' in Complex Systems

Increased recognition of, and attendance to, context has led to a progressive body of literature reconceptualising interventions as 'events in systems'. This section will draw out the original understandings that interventions were based on, how they have been reconceptualised to consider complexity from the intervention interacting with the system, and what implications this has for this study and other intervention research.

Historically, interventions were conceived with a predominant focus on complexity as an inherent property (Moore et al. 2019) with several varying attributes (Craig et al. 2008).

These included the number of components and the interactions between them, the number and difficulties of behaviours deliverers and participants need to perform, the groups or socio-ecological levels the intervention is directed towards, and the variety and variability of outcomes. Intervention theory attempted to capture this complexity through elucidating the intervention resources, intended activities, and the numerous causal assumptions which predict the mechanisms that will be triggered to make change and produce the desired outcomes. Depiction of intervention theory was most commonly achieved through the production of graphical representations called logic models (W.K. Kellogg Foundation 1998), which tended to be linear, showing input to output chains. Additionally, implementation was conceived as ensuring programme delivery adhered to pre-specified set activities, with fidelity measuring the consistency of what was delivered in each school setting (Moore et al. 2015).

Intervention research has been criticised as it has overlooked the importance of complexity caused by how the intervention interacts with context (Hawe et al. 2009; Hawe 2015; Moore and Evans 2017; Moore et al. 2019). Attending to this has led to reconceptualising interventions as 'events' in complex systems, where an event has been defined as "something significant that happens" (Hawe et al. 2009, p. 274) which can change the dynamics and trajectory of the system. Drawing on the field of complexity science, schools have been acknowledged as Complex Adaptive Systems (CAS) (Keshavarz et al. 2010; Moore et al. 2019; Murphy et al. 2021) with a "dynamic network of many diverse agents and characteristics, constantly acting and reacting to other agents' behaviour, generating emergent system characteristics, which in turn exert influence on individual behaviour" (Littlecott 2016, p. 1). It is also acknowledged that schools are part of open systems as they are nested within, and hence, influenced by other systems and the changes in other systems, for example local educational authorities (Moore et al. 2019)

This necessitates a focus on how the introduction of an intervention disrupts the context, and how the system adapts to the new resources and/or displaces and redistributes resources already within the system. If the system adapts, then the intervention is postulated to leave a lasting imprint on the setting as the changes made become system regularities, whilst resistance to change means that the intervention will be washed out and leave no mark on the functioning of the organisation (Hawe et al. 2009). This allows researchers to look wider

than the intervention to understand how and why interventions are effective or not. The understandings of change gained when studying interventions as a disruption in a complex system can then be used to explain the variability in outcomes.

This shift from foregrounding complexity within the intervention to within the system has provided a vital progression, but intervention research has only recently addressed issues of context (Moore and Evans 2017). This progression has also created specific challenges for school-based research. First, to fully incorporate this complexity, there has been a growing recognition that interventions need to have some in-built flexibility to be able to accommodate the needs and starting contexts of schools. Some of the complexity for intervention implementation in these settings was discussed earlier for SEL and HPS programmes. To support this, interventions are being described in terms of a functional view (Hawe et al. 2004; Hawe et al. 2009; Kemp 2016; Perez Jolles et al. 2019). The original conceptualisation meant interventions had set activities delivered identically in numerous settings, irrespective of their contextual diversity; while the functional view of interventions allows the activities within interventions to be tailored and adapted to the school context as long as the overall functions are met and the theory of change is activated (Hawe et al. 2009).

Hence, interventions are conceived as having standardised functions (steps in the intervention process necessary to trigger change) rather than forms (intervention activities which use the resources provided to enact the functions) (Hawe et al. 2004; Hawe et al. 2009; Kemp 2016; Perez Jolles et al. 2019). For example, a function to recruit students from different year groups to an intervention could take place through the forms of voting, student self-nomination, or staff nomination. Different forms may be used in different schools as agents within the system consider them aligned with the current system i.e. how they currently recruit students to initiatives, or they may be used variably within a school to recruit students from different years groups, or with different characteristics.

Secondly, conceptual thinking about how we capture and assess complexity in intervention research is in its infancy (Moore et al. 2019). This includes what characteristics and concepts we believe make up complex social systems such as schools, and how we assess implementation fidelity when using a functional view of interventions where activities can fluctuate between schools. These will be explored further in the succeeding research design

chapter in section 3.2.2. The last challenge is how we can capture this complexity when we are developing interventions to produce more contextualised intervention theory. To achieve this, there has been a drive for stakeholder co-production within intervention development which will be expounded in the next section.

2.7   The Drive for Co-production in Intervention Development

This section will focus on the drive for co-production within intervention development as a vehicle to address the contextual contingency of interventions. To do this, it takes a chronological view of influential documentation which have structured how the scientific community have developed complex health interventions over the last 20 years. It considers early MRC documentation, which gave only brief considerations of the intervention development stage (Campbell et al. 2000; Craig et al. 2008), to more recent extensive work that has centred on incorporating context and stakeholder involvement (Craig et al. 2018, p. 2) and involved the development of a taxonomy of intervention development (O'Cathain et al. 2019b) and guidance specific to this stage (O'Cathain et al. 2019a).

There has been a clear increase to attending to context in intervention development guidance. Early offerings demarcated intervention development as a discrete, foremost stage (Campbell et al. 2000) which was refined to an iterative framework of development-feasibility-evaluation-implementation processes (Craig et al. 2008). The goal of Phase I was elucidated as developing the *"intervention to the point where it can reasonably be expected to have a worthwhile effect"* (Craig et al. 2008, p. 10); avoiding conducting expensive trials on weak interventions (Hawe 2015). This results, ideally, in a clear description of the intervention and the articulation of the underpinning programme theory. However, the guidance dedicated only a concise section on how to achieve intervention development (O'Cathain et al. 2019a), and the document is limited in how it attends to context (Moore and Evans 2017). Resultingly, the development of weak prevention interventions has been partially attributed to impotent theories of change, which have very little utility in real world contexts (Hawe et al. 2009).

Newer guidance attempted to fill these gaps by centering on context, which it stated during intervention development would produce *"more appropriate, implementable, effective and sustainable interventions that either work well in a specific context or have sufficient*

flexibility in-built to their design to work across a range of contexts." (Craig et al. 2018, p. 2). This guidance provides an encompassing definition of the epidemiological, historical, cultural, geographical, social, political, legal, and financial domains of context, with researchers advised to identify which domains of context should be addressed for any specific intervention during early intervention development iterations.

This increase in attention to context has been accompanied by a growing drive to employ stakeholder involvement to address context when developing interventions. This is because stakeholder involvement is believed to increase intervention relevance, resulting in more effective interventions (Craig et al. 2008). By addressing issues in context, interventions are developed based on more contextualised theories (Moore et al. 2019), shifting away from developing interventions based on established academic theories which lack contextual relevance. It is advocated that stakeholders can outline contextual and pragmatic enablers and barriers early in development processes (Gitlin 2013), and limited intervention resources can be targeted towards the mechanisms that actually cause and sustain the identified health issues (Moore and Evans 2017). Hence, stakeholder co-production is being proffered widely as the vehicle to embed contextual understanding into interventions as a solution to existing programme implementation problems and the mixed effectiveness of interventions (Hawe et al. 2009; Moore et al. 2019).

The understanding of how to involve stakeholders in intervention development has progressed but is still limited. In MRC guidance, this growing emphasis on stakeholder involvement in intervention development started as a brief acknowledgement (Craig et al. 2008). It was presented in a subordinate role to utilising existing evidence and theory through classifying it as 'supplementary information', collected 'if necessary' to plug the gaps from the academic literature. It was also presented as a one-time event rather than a continuous collaboration with stakeholders. Therefore, it was recognised that our early methods of involving stakeholders in intervention development were inadequate (Hawe et al. 2009), as they encouraged researchers to utilise top-down intervention development approaches, which privileged academic evidence and theories. More recent guidance (Craig et al. 2018) foregrounds a mixture of stakeholder experiences and behavioural and social theory to develop intervention-specific theories of change. However, intervention theory is still realistically often a mixture of academic theory, stakeholder experience, and common

sense (Pawson and Tilley 1997; Moore et al. 2014). The correct combination of top-down and bottom-up approaches to intervention development is indeterminate (Moore et al. 2019) and potentially variable depending on the existing evidence base, the outcomes targeted, the setting, and the required stakeholders involved. Whilst the newer guidance (Craig et al. 2018) does give a plethora of different examples of how stakeholder experiences have been captured in previous intervention development, it falls short of defining, standardising processes, or outlining what needs to be considered when involving stakeholders.

This gap has begun to be addressed through considering how intervention development is being accomplished in practice. This has been achieved through INDEX (IdentifyiNg and assessing different approaches to DEveloping compleX interventions), which is the first systematic consideration of the different approaches used to develop health interventions through a taxonomy of different approaches (O'Cathain et al. 2019b). It has clear utility in the field as it was developed through a robust process and showcases how we can optimise intervention development. The process combined a multi-phased mixed methods study focused on the development of a taxonomy of different approaches produced from a systematic methods overview (O'Cathain et al. 2019b) and intervention development guidance (O'Cathain et al. 2019a). It benefits researchers through drawing together different guidance and explicating the variety of ways that intervention development is achieved, some of which are dedicated specifically to developing interventions with stakeholders, i.e. the Partnership or Target Population-centered approaches. INDEX Guidance advises using frameworks already developed to optimise intervention development, but cautions that intervention developers need to assess the relevance and utility of these for their specific interventions and intended contexts (Turner et al. 2019).

Even though the INDEX taxonomy and guidance were not published until after the commencement of this PhD in 2017, the relevance and utility of a purposeful sample of guidance and frameworks were assessed to direct how co-production could be conducted in schools for this thesis. This is elaborated in the next section.

2.8   The Utility of Intervention Development Guidance and Frameworks for School-Based Co-Production

Aligned to advice in INDEX documents (O'Cathain et al. 2019a; Turner et al. 2019), the utility of established frameworks should be assessed to examine if they are relevant to the developers' specific purpose (Turner et al. 2019). This section will assess the utility of frequently cited documents in the field. Scoping found five such documents (Table 1), which cover a diversity of disciplines and focus as they are drawn from health promotion and implementation science and include more generic guides and school health specific examples. The utility of guidance/frameworks were assessed in terms of whether they supported context-specific co-production and were developed based on school settings. Context specificity is defined as the intervention allowing individual schools to tailor programmes to their own needs (Sadjadi et al. 2021).

The MRC guidance (Craig et al. 2008) was critiqued in the preceding section showing it does not focus specifically on schools and has limited value in attending to co-production. It is important to note that updated guidance was published immediately before this thesis was submitted which does have a greater focus on co-production but would still not have meet both criteria set (Skivington et al. 2021). The Intervention Mapping Approach (Bartholomew et al. 1998; 2011; 2016) gives a six step procedure that commences with conducting a needs assessment, followed by outlining programme objectives; developing strategies through theory and practical solutions, then planning, adopting and implementing, and evaluating the programme. It outlines a transparent and systematic approach; however, akin to the MRC guidance, it addresses involving stakeholders in the target population in a subordinate role to utilising theory to understand how problems can be redressed and is not specific to schools.

Table 1: Assessment of the Utility of Intervention Development Guidance/Frameworks

Reference	Guidance/ Framework	Schools	Context-specific
(Bartholomew et al. 1998; 2011; 2016)	Planning health promotion programs: an intervention mapping approach	X	X
(Craig et al. 2008)	MRC Framework for developing and evaluating complex interventions	X	X
(Michie et al. 2011)	Behaviour Change Wheel	X	X
(Wight et al. 2016)	Six essential Steps for Quality Intervention Development (6SQUID)	X	✓
(Hawkins et al. 2017)	Development of a framework for the co-production and prototyping of public health interventions	✓	X

The Behaviour Change Wheel (Michie et al. 2011) is a standardised eight step process with three stages which support researchers and policy makers to characterise and design behaviour change interventions. It was profusely utilised and referenced in early intervention development studies, however its intended use does not meet either of the utility concepts as shown in Table 1. Most notably, this mechanistic approach to intervention development limits the possibility of co-production with stakeholders, because although stakeholders could be involved in categorising the target behaviour, they are not able to influence behaviour change activities or policy actions.

Six Steps in Quality Intervention Development (6SQuID) (Wight et al. 2016) is a popular framework with a stepped process that has a major emphasis on co-producing with the target population throughout intervention development. It clearly outlines the necessary steps for intervention development tasking stakeholders to: understand the problem and what causes it; identify factors that can be changed; understand how change can be achieved; and decide how to deliver the change. It is also favourable as it draws on Hawe et al.'s (2009) work as outlined in section 2.6, which attends to context. However, 6SQuID is limited in how to involve school stakeholders in intervention development, with the illustrative example given being on a gender-based violence parenting programme.

Hawkins et al. (2017) provide a framework developed through a case study of a school-based intervention which showcases the adaptation of a project called ASSIST + Frank and FRANK friends, two peer-led drug prevention interventions. Contrary to 6SQuID, this framework was based on a school intervention. However, it is limited for use here because it does not allow stakeholders to develop context-specific interventions for their own schools. Instead, it focuses on adapting/producing standardised material for use in multiple schools, supporting a broad understanding of context by addressing issues at a cultural rather than school-level, as substance misuse is a prominent UK public health issue. Assuming health problems profile similarly in different school contexts is a plausible solution to the implementation problems found in section 2.5, and it is suitable to trial multiple ways to achieve effectiveness. Nevertheless, it could also be considered this downplays the contextual variation between schools, as it does not allow schools to tailor to their own public health needs.

Beneficial guidance in the form of co-production frameworks (Wight et al. 2016; Hawkins et al. 2017) gives an overall direction on how stakeholder co-production can be achieved in intervention development. However, their utility within this thesis to direct the context-specific co-production process in school-based health interventions was considered limited. The number of interventions that utilise stakeholder co-production to develop context-specific interventions in schools has grown in recent years though, and these will be the focus of the succeeding section.

2.9   Co-produced School-Based Health Interventions

Specifically in school settings, the range of interventions that encourage stakeholder co-production is growing, with the evidence base for effectiveness emergent but promising (i.e. Bond et al. 2004; Ozer and Douglas 2013)[1]. An overview of these effective examples is given to demonstrate the progress made, the availability of research about these interventions, and the gaps in the evidence about co-produced school-based health interventions.

The seminal Australian study the Gatehouse Project (Bond et al. 2001b; Patton et al. 2003; Bond et al. 2004) involved students aged 12-14 years old (n=2,678) in 12 intervention and 14 control schools and assessed outcomes at 36 months. It was a whole school intervention including teaching skills and developing action groups which co-produced school health activities to address needs. A 3-5% difference in smoking and drinking between groups at 36 months was found, but no significant differences in mental health outcomes. This suggested whilst co-produced interventions can address the contextual issues found in standardised interventions, the theories developed in schools may not have adequately targeted the complex determinants of MHWB (Bond et al. 2004). The promising evidence from this project though, has led to emulation in other countries. For example, in the UK a feasibility trial has been conducted of the INCLUSIVE programme (Bonell et al. 2015). This was a cluster randomised controlled feasibility trial with eight secondary schools (four intervention and four control) in London and south-east England. The intervention also allowed contextual tailoring of health activities delivered through action groups of school students, staff, and an external facilitator. However, this project did vary from the Gatehouse Project in

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[1] Another effectiveness evaluation (Bonell et al. 2018) has been published since the inception of this PhD and will be discussed in the thesis discussion.

many of its processes, including the number of students involved in action groups and how they were recruited, the different stakeholders involved, and the physical and/or MHWB issues targeted.

Another example of co-production with school stakeholders was through the Participatory Research on Urban Teens in the United States study (Ozer and Douglas 2013). This was a randomised within school trial with clustering at the classroom level. The study was conducted in five schools where both condition groups received a peer support programme, but the intervention group also had a youth participatory research (YPAR) programme. The YPAR training taught students research skills and how to affect broader change so classes of students could research their school environments to produce actions to affect change. Post-intervention, the YPAR group showed modest significant improvement in their socio-political skills, motivation to influence their schools and communities, and participatory behaviour but not their perceived control at school or self-esteem. Supporting students to develop as researchers is an increasing phenomenon, with other examples shown that include children as young as 10 (e.g. Kellett 2004). What is uncertain is how widespread this approach is in schools and how often the focus on involving young people is to change their health behaviours rather than educational outcomes.

Critiquing and comparing these studies raises five issues which demonstrate that the co-production of school-based health interventions is an indistinct field which requires clarity to progress. First, these studies are examples of different types of intervention which can fall under the purview of co-production, but there is an omission of a comprehensive typology. Secondly, as shown, even within examples of the same co-production type there are differences in processes used. Thirdly, while the Bonell et al. (2015) study does discuss the underlying theory and provides a logic model, this is not commonplace, resulting in uncertainty about how co-production functions to affect change. Fourthly, whilst some co-production studies have assessed stakeholders' experiences of types, this literature needs reviewing to understand if co-production is acceptable to stakeholders and feasible in schools. Lastly, there remains equivocality about what is meant by co-production in school-based health interventions. Drawing these issues together demonstrates that the field of co-produced school-based health interventions needs elucidating. This will begin to be

addressed in the last section of this chapter which focuses on defining co-production for this PhD.

2.10   Defining Co-production for this Thesis

The more general literature about co-production considers it as a complex, egalitarian approach involving a multitude of processes and stakeholders, often conflated to bringing together distinct communities to collaborate (Williams et al. 2020b). Further, definitions of co-production vary, and a lack of consensus on how to use the terminology appropriately is apparent (Oliver et al. 2019). It is reasoned though that the crux is to include the individuals/communities who are usually excluded from decision-making (Williams et al. 2020b). Hence when defining co-production as a means to develop interventions in schools there are two interwoven uncertainties that need clarification. Specifically, who should be involved in articulating intervention theory, and how should they be involved.

When considering who should be involved, arguably the most often excluded but salient stakeholders as the targets for, and recipients of, school interventions are students.   The reasons for involving young people as the main, but potentially not only, stakeholder propagates from three main sources. First, children's political and legal status, delineated through children's rights, has driven the cause to involve them in decision-making about their lives. This emanates from the establishment of the United Nations Convention on the Rights of the Child (UNCRC) (1989), specifically, Article 12.1 that states: *"States Parties shall assure to the child who is capable of forming his or her own views the right to express those views freely in all matters affecting the child, the views of the child being given due weight in accordance with the age and maturity of the child"*. This right has been engendered in multiple ways internationally and specifically in Wales. Most notably, the Welsh Government clearly committed to children's rights by ratifying the UNCRC and children's rights as the foundation for policy affecting those under 18 (Welsh Assembly Government 2004). This has led to the statutory requirement for all maintained schools in Wales to have a functioning student council (Welsh Assembly Government 2005), which showcases the belief in children's capability to take part in school decision-making

Secondly, the socio-cultural view of the 'new sociology of childhood', widely accepted from the 1990s, acknowledges children's social agency, which is the fundamental ethos of

children's involvement. It recognises children as competent 'co-constructors of knowledge, identity and culture' and experts in understanding and articulating their own lives (Dahlberg et al. 2007). It is believed children have first-hand insights into their experiences which adults are not privy to, preventing them from acting within a proxy capacity for children's issues (Clark and Statham 2005). This positions children as social 'beings', worthy in their own right, and not solely as 'becomings' (James and Prout 1997). This movement has questioned the traditional approach of doing 'research on' rather than 'research with' children as they became appreciated as the key to understanding their own health and wellbeing (Darbyshire et al. 2005).

Lastly, the HPS framework (World Health Organisation 1996) takes credence from the Ottawa Charter (World Health Organisation 1986) which advocates for the empowerment of community stakeholders. Specifically, the Charter states its support for developing interventions through allowing communities to set their own health priorities, which it claims will result in better health outcomes. It also acknowledges young people's capability to be part of decision-making in their social settings, including schools. This is also recognised by democratic health education advocates who align their work to the HPS framework. They perceive participation as affording students the opportunity to engage in health decision-making. Advocates simultaneously believe students can express their views about health in schools whilst further developing action competence to continuingly support them in making individual and school-level decisions (Jensen 1997). Taken together, these three sources provide a clear rationale for involving students as the main stakeholder in school-based health intervention co-production.

According to Williams et al. (2020b) how stakeholders should be involved in co-production can be reconciled by considering the interlinked issues of how to differentiate co-production from other forms of involvement, and what key decision-making processes they are part of. A scoping review (Larsson et al. 2018) of 41 studies published between 2000-2017 has provided some clarity on the broad spectrum of approaches young people are involved in to develop health and wellbeing interventions. The paper demonstrates five progressive and sequential levels which move through listening to young people, supporting them to express opinions, taking their views into account, including them in decision-making, and sharing power and responsibility with them. The authors characterise the latter two levels as positions

where young people hold power which could be perceived as the tipping point for young people's involvement becoming co-production. However, this review does not necessarily attend to context in a manner parallel to the aspirations outlined in section 2.6. This is because most included studies involved young people in the development of standardised interventions which would be placed identically into different schools, and not in the context-specific co-production which has been deemed important in this thesis (section 2.5).

Further, when considering the key decision-making processes within schools, the wider public health literature has been scoped to understand what these are. It has been determined that stakeholders should be involved in intervention development to ensure programmes target the most salient mechanisms that cause and sustain problems. They can do this by identifying and providing clarity on the contextually situated drivers of the public health issues within settings and developing appropriate theory to redress them (Moore and Evans 2017). These two functions can be aligned to problem-setting and problem-solving, with the former defined as the requirement *"to identify and articulate the issues, to question core assumptions, and to develop shared beliefs and understandings"* (Bond et al. 2001b, p. 374) about health issues. This sets stakeholders the role of prioritising the problems worth attending to in interventions. Whereas, problem-solving is aligned to *"developing appropriate mechanisms to address them, either building on the experience of a particular program, or as an activity in its own right"* (Hawe 2000, p. 4), tasking stakeholders with developing solutions to address the health issues found.

Utilising the key functions of problem-setting and solving, in lieu of a single definition that can encompass co-production activity, is in-line with complex systems thinking. This is because it can allow the stakeholders and the activities they undertake within intervention development to vary between examples, as long as problem-setting and solving are achieved. It can also address the avoidance of 'cobiquity', which has been noted as the conflation of co-production with other forms of participatory practice that are collaborative (Williams et al. 2020b) but do not reach the threshold of allowing young people to have power over decision-making (Larsson et al. 2018). For example, co-production can be differentiated from other forms of stakeholder involvement, such as one-off consultations or involving students in prespecified activities like peer education delivery (Baum 2015).

Endorsing young people as a traditionally excluded but competent population sets them as the main stakeholder when co-producing school-based health interventions. To avoid 'cobiquity' whilst falling within the purview of complex systems thinking, co-production was delineated as an iterative process of problem-setting and solving which is conducted within school settings to develop school-specific interventions responsive to need. Situating intervention development processes within settings differentiates co-production as a contextualised approach to involvement, separating it from broader approaches to develop standardised programmes. Therefore, this PhD is positioned as developing intervention theory for the co-production process itself, which will be the main aim of this thesis.

2.11   Summary

This chapter explored the increased significance of utilising a complex systems perspective to attend to context in intervention conceptualisation and development. There is an emergent endeavour to utilise co-production as a vehicle through which to achieve the understanding of context during intervention development. This could serve the purpose of producing school-based health interventions with contextual fit to ameliorate implementation issues. Whilst support to involve stakeholders within intervention development processes is augmenting, intervention development guidance and frameworks were deemed unsuitable to direct the process of co-producing school-specific interventions. The chapter also contended that there remains equivocality in terms of the understanding of the different types of school-based co-production, their intervention processes, and stakeholders' experiences of them. This resulted in an indistinct field of work which requires clarity. This serves as the rational for the current PhD which will develop co-production theory for school-based MHWB interventions. It utilises a mixed methods intervention development study of co-production to achieve this, which will be detailed in the succeeding chapter.

3   Chapter 3: Research Design and Phases

To address the need for clarity within the field of co-producing school-based health interventions, this PhD uses an intervention development study to build and refine co-production programme theory. The purpose of this brief chapter is to set out the overall design of this intervention development study. The chapter commences by setting out the study's aim, objectives, and research phases. It further considers the philosophical and operational implications of using a complex systems perspective for intervention development studies. It continues by justifying the use of INDEX (IdentifyiNg and assessing different approaches to DEveloping compleX interventions) guidance to structure the overall research design as a two-phase, mixed methods development study. Study phases are then mapped against the guidance key actions. It ends with a section to orientate the reader to the forthcoming methodological and empirical chapters.

3.1   Intervention Development Study Design: Aim and Research Phases

The central aim was to develop co-production intervention theory. Chapter 2 elaborated on the need to differentiate a type of stakeholder involvement at the individual setting level from broader approaches to develop standardised programmes. Hence interventions are developed in each school with stakeholders rather than having a fixed programme delivered, which may not meet the needs of the school population. This justified building and refining intervention theory for the co-production process itself. To achieve this, the overarching design of this thesis was an intervention development study conducted to build and then refine the co-production theory. This was achieved through a mixed methods study with two phases which were conducted, and are written up, sequentially. This was necessary as results from phase 1 were used to shape the methodology and focus of phase 2.

Phase 1 built and articulated programme theory by determining the most appropriate type of co-production for the thesis and the type's underlying intervention theory and properties. This was achieved predominantly by conducting a systematic review of co-produced school-based health intervention studies with a thematic synthesis of stakeholders' views. This was complemented by work with an established young people's advisory group, and a pilot of participatory data production methods that could enable students to elicit their understandings of school wellbeing. Phase 2 assessed the co-production theory through the conduct of a mixed methods process evaluation with two case study secondary schools where co-

production was delivered. The process evaluation results were combined and discussed with the young people's advisory group, allowing the co-production theory to be refined.

Intervention development guidance was employed to bring together the various actions and support the writing of the thesis. Section 3.3 will justify the use of this guidance and map the study against the guidance actions. Preceding this is a discussion of the philosophical and operational implications of using a complex systems perspective within an intervention development study.

3.2 Using Complex Systems Perspectives in Intervention Development

Section 2.6 described that recent progression in intervention science was to foreground complexity in the delivery context rather than consider complexity as an inherent property of the intervention (Hawe et al. 2009; Moore and Evans 2017; Moore et al. 2019). Whilst this shift in thinking is welcomed, it creates further challenges for intervention research. The following two sections will draw out the implications of using a complex systems perspective for the philosophical stance taken, and the operational decisions in terms of thinking conceptually about schools as CASs, and how a functional view of interventions will be incorporated into this study.

3.2.1 Philosophical Position: Critical Realism

Philosophically, complex systems perspectives are aligned with critical realism (Bhaskar 1978) and generative causality as outlined in realist evaluation (Pawson and Tilley 1997). Critical realism (Bhaskar 1978,1989) outlines reality as an external, objective phenomenon that has the stratified domains of the real, actual and empirical. Generative mechanisms reside in the real, and they have causal potential to yield or sustain, here, wellbeing problems. Mechanistic causal potential is activated (or not) in the actual domain where human activity, or events in contexts, trigger processes that produce the wellbeing phenomena. The intention of promotion interventions is to provide participants with resources and/or activities they can act upon to trigger desired mechanisms at varying socio-ecological levels, which researchers expect will produce their desired outcomes (Pawson and Tilley 1997; Bonell et al. 2016).

This results in intervention outcomes being dependent on the composition of the intervention, the interactions between the resources provided, participant actions, as well as the pre-

existing context and its propensity to evolve, change structures, and use resources (Hawe et al. 2009; Byrne 2013; Fletcher et al. 2016). Hence, intervention development studies attempt to articulate the complex causality underpinning the phenomena under investigation and how it can be modified (Moore et al. 2015).

The 'empirical' domain is where research resides, allowing the collection and analysis of data about the real and actual domains (Bonell et al. 2016). Acknowledging access to the domains of the real and actual is gained indirectly through the empirical strata requires the acceptance of the potential to produce fallible transitive knowledge, even though the aspiration is to capture intransitive knowledge (Sayer 2000). Notwithstanding, intervention theory can be developed through an iterative and accumulative process (Kazi 2003) of hypothesising how interventions will most regularly operate within different contexts, examining and refining understanding through empirical research (Marchal et al. 2013) to understand *"what works, for whom, under what circumstances and why"* (Pawson and Tilley 1997 p. 85). Consequently, it is only through multiple iterations of identifying and assessing intervention knowledge about co-production that we will be able to get closer to the truth.

In this vain, O'Cathain et al. (2019a, p. 8) remark that considering intervention development as a discrete phase can be considered artificial because *" In many ways, development never stops because developers will continue to learn about the intervention, and refine it, during the later pilot/feasibility, evaluation and implementation phases"*. This study begins this knowledge development about co-production through an intervention development study, which has two sequential phases to build and refine programme theory. However, it is recognised that further refining and knowledge development about co-production and how it functions within school settings will be necessary.

3.2.2   Operationalising Complex Systems Perspectives

At an operational level, using a complex systems perspective creates challenges in how intervention research can conceptualise thinking about organisations as CASs and incorporate a functional view of interventions.

Regarding conceptual thinking about CAS, a focus on capturing this through established and developing frameworks and checklists has been seen. However, this is an evolving

endeavour and debates on the best ways to achieve this acknowledge the primitive nature of our understanding (Moore et al. 2019). At the broadest level, the most recent version of the MRC (Craig et al. 2018) guidance for population health intervention research has had a predominant focus on context. The guidance concedes that identifying which domains of context should be addressed for any specific intervention must feature in early iterations of intervention research. It continues that a number of nascent checklists and frameworks in which to understand the dynamism of complexity are materialising that can support this endeavour, but, again, which to choose is specific to the intervention focus.

Within school-based intervention research, the most frequently cited are from the work of Hawe et al. (2009) and Keshavarz et al. (2010), so are appropriate for this thesis. Hawe et al. (2009) advised that in addressing complexity, we must extend our notion of ecological past recognition of targeting multiple levels as part of a programme to a perspective that focuses on how the system parts interact, i.e. relationships between actors and feedback loops in the system. To do this they originally theorised there should be a focus on the three dimensions of activity settings, social networks, and time. Activity settings are bounded patterns of interactions featuring certain actors, resources, roles, and symbols, an example being a class where the ratio of staff to students can affect student behaviour. Social networks are not just constituted by the connection between people but also to the activity settings, i.e. the staff hierarchy, and the implications for this on roles within different activity settings. Time indicates that these contexts are not static but ever changing. A key intention is to understand the existing system and consider whether the programme changes it and saturates the context. For example, are new activity settings developed, or prior activity settings stopped or changed to meet intervention aims, or do key agents take on the intervention or change their roles to fit with it. If the system adapts, then the intervention will leave a lasting imprint on the setting as the changes become embedded, whilst resistance to change means that the intervention will leave no mark on the functioning of the organisation.

Similarly, Keshavarz et al. (2010) termed schools as CASs. This seminal paper theorised that complexity is influenced by intrinsic and extrinsic factors and the interactions between them. Intrinsic influence is exerted by the numerous agents within the system including students, staff, and parents who are constantly changing, interacting, adapting as they learn, and who vary in their degrees of autonomy. Agents' behaviour is shaped through their knowledge and

experience, the informal values and formal system rules, as well as the feedback they receive from other agents and the system. Extrinsically schools are part of nested network systems, so their autonomy is limited by ever-changing educational curricula, policies, inspectorate expectations, and technologies imposed by national and local education authorities. Additionally, schools have parallel systems such as families and the wider school community who influence their internal working. Even though the work of Hawe et al. (2009) and Keshavarz et al. (2010) may be considered just a starting point in understanding how we unify knowledge on context (Moore et al. 2019), taken together they highlight the various school components and structures that will be used throughout this thesis to understand schools as complex systems. They will be explored further in section 5.3.1 which focuses on the process evaluation design (Phase 2) which has a central domain of understanding context.

Regarding using a functional view of interventions, this alludes to how we conceptualise the internal intervention properties. A shift from conceiving interventions in terms of standardised packaged programmes, with set forms delivered the same regardless of contextual diversity, has taken place. Alternatively, interventions are being described in terms of standardised functions rather than form (Hawe et al. 2004; Hawe et al. 2009; Kemp 2016; Perez Jolles et al. 2019). This defines interventions in terms of the functions they seek to enact, allowing an adaptive form to sync with contextual dynamics and participant responses. However, the best ways to operationalise intervention properties through this system lens are embryonic (Movsisyan et al. 2021) as rapid progressions in thinking have outpaced intervention research.

Combining traditional understandings of interventions as proposed through logic modelling (W.K. Kellogg Foundation 1998) and perspectives in complex systems thinking (Hawe et al. 2009; Dalkin et al. 2015; Kemp 2016; Moore and Evans 2017; Moore et al. 2019; Perez Jolles et al. 2019) intervention properties will be defined in this PhD in terms of the following:
- resources are the intervention inputs (human, financial, procedural etc.) provided to support the enactment of forms and functions.
- forms are the multiple, adaptable intervention activities which use the resources provided to enact functions.

- functions are the standardised steps in the intervention process necessary to trigger change which can be affected by how the school system interacts with the intervention.
- mechanisms are the hypothesised causal pathways which produce change within the individual/setting affected by how individuals who interact with intervention resources reason and respond to them, and the contextual conditions in the system.
- outputs are the direct products of intervention.
- outcomes are the changes in intervention participants' behaviour, knowledge, skills, and or status.

These properties have begun to be considered for co-production in section 2.10. This set the functions of problem-setting and solving as key to co-production to avoid cobiquity with other forms of involvement whilst allowing the stakeholders and the activities they undertake to vary between examples. This study will endeavour to understand the other functions necessary for co-production in secondary schools. However, accepting interventions in accordance with their function rather than form has further implications for this study. The first of these is the assessment of implementation fidelity and the need for flexibility built into the intervention. The amount of flexibility built into an intervention has been discussed extensively (Moore et al. 2014). The crux centres on producing an understanding of whether adaptations improve fit to context whilst maintaining functionality to produce the desired outcomes or whether functionality is compromised, which derails effects (Hawe et al. 2004). Hence fidelity has been repositioned to be determined at the functional rather than form level (Hawe et al. 2009; Perez Jolles et al. 2019). The methodological challenges with assessing functions, planned forms, and if and how adaptations affect the intervention's functional integrity (Pérez et al. 2016) in the phase 2 process evaluation are discussed in section 5.3.2.

Secondly, complex systems thinking affords intervention evaluators the opportunity to assess if interventions activate the postulated theory of change, regardless of the form activities take. However, individuals have agency to reason and respond to resources, which can be shaped by structural determinants (Dalkin et al. 2015). These responses can, in turn, result in unintended consequences and iatrogenic effects (Bonell et al. 2014b). Therefore, the study of mechanisms and a goal of intervention development centres on postulating what causal mechanisms will be triggered through the resources provided, if these mechanisms were

triggered and how they worked, and how participants interact with, reason with and respond to resources; all of which are also affected by contexts (Wong et al. 2013; Van Belle et al. 2016). Again, how this will be achieved in this thesis is considered in the primary research (phase 2) methodology in section 5.3.3.

The increased drive and propagation for interventions to be reconceptualised as 'events' in complex systems has repositioned the focus of complexity to the social systems within which they are implemented (Hawe et al. 2009; Moore and Evans 2017; Moore et al. 2019). This change in perspective aligns with a critical realist philosophy which necessitates the acceptance of this study as an initial elucidation of co-production theory that will need further refinement and testing. It also shapes the thesis through understanding schools as CASs and interventions through a functional view. Both endeavours are in their infancy in terms of operationalising them in intervention research, and the implications of using them will be considered throughout the thesis. First though, the use of intervention development guidance will be justified, and the study will be mapped out according to guidance key actions.

3.3   Intervention Development Guidance

As discussed in the preceding chapter, recognition of the importance of intervention development has grown significantly with successive iterations of MRC guidance (Campbell et al. 2000; Craig et al. 2008; Craig et al. 2018), funding streams specifically for development studies (UK Research and Innovation 2016), and the multi-phased INDEX (O'Cathain et al. 2019a; O'Cathain et al. 2019b). Whilst the INDEX guidance was not available at the beginning of this PhD to structure the study, it outlines the key actions to be considered in intervention development studies and therefore provided a valuable framework within which to write up and reflect on this study. The guidance is structured through the five principles for intervention development to be a dynamic, iterative, creative, open to change, and forward-looking process. Further, the guidance has 10 key actions that should be used flexibly by researchers as not all will be relevant to the intervention focus or settings in which the intervention will function. These actions are to: plan the process; involve stakeholders; bring together a team; review published research evidence; draw on existing theories; articulate programme theory; undertake primary data collection; understand the context; attend to future implementation; and design and refine the intervention.

3.3.1 Justifying the Use of INDEX Guidance

The four main reasons for using INDEX were the strength of the evidence-base underpinning the guidance, the alignment with the phases of building and refining an intervention, the parallels with complex systems thinking, and the attendance to using both top-down and bottom-up approaches within intervention development.

The strength in the INDEX evidence base is shown by the multi-phased study commissioned by the MRC to establish it. This involved: a systematic methods overview of published approaches; a systematic review of primary research; qualitative interviews with intervention developers and wider stakeholders; two simultaneous e-Delphi consensus exercises with developers and wider stakeholders; all of which were directed by an expert panel, an experienced study team, and discussion with other researchers at academic events (O'Cathain et al. 2019a). This guidance has provided clarity through drawing together the learning from a range of sources that have been involved in augmenting the intervention development research field. As such, it was considered the most up-to-date and relevant source to structure this intervention development study write-up.

The three remaining reasons link to the intersections between the guidance and how the current intervention development study was conducted. The first reason is the focus in the guidance on initially developing an intervention before refining it through iterations of the intervention. This is shown through the two key actions to 'articulate programme theory' and 'design and refine the intervention'. The second reason is that the guidance inherently incorporates the need to consider context as an action throughout the intervention development process (see sections 2.5 & 2.6), aligning it to the complex systems thinking approach taken in the study (Hawe et al. 2009; Moore and Evans 2017; Moore et al. 2019). Again, this is shown by elaborating a key action to 'understand context'. Lastly, the guidance attends to the need to use top-down and bottom-up approaches (Moore et al. 2019) within intervention development by encouraging the use of existing theory, and work with stakeholders, respectively. This was discussed as necessary in section 2.7.

3.3.2 Mapping the Study against Guidance Key Actions

Table 2 maps out the actions from the intervention guidance against the study phases and methodologies/research activities undertaken. Cognisant a foremost guidance action is

'planning the process', and as prior piloting work was conducted through a preceding integrated Masters in the 1+3 PhD programme, both study development and the MSc are charted within the table.

Table 2: Mapping Guidance Actions against Study Phases and Methodology

	Study Development (2015-16)	MSc (2016-17)	PhD Phase 1 (2017-18)	PhD Phase 2 (2018-21)
Plan the process	Funding application			
Involve stakeholders	Session 1 - PhD research design and views on secondary school co-production	Session 2 - Advising how to run participatory methods and reviewing participant documentation	Session 3 - Assessing the systematic review results and advising on phase 2 fieldwork	Session 4 - Assessing process evaluation results
Bring together a team	Supervisory team	Supervisory team	1 - Supervisory team 2 - Expert Panel consulted for Systematic Review	Supervisory team
Review published research evidence			Systematic review	
Draw on existing theories			Systematic review	
Articulate programme theory			1 - Systematic review results 2 - Pilot study results 3 - Public involvement advice	
Undertake primary data collection		Pilot study to assess the utility of participatory methods in secondary schools		Process evaluation with two case study secondary schools
Understand the context				Process evaluation with two case study secondary schools
Attend to future Implementation				Process evaluation with two case study secondary schools
Design and refine the intervention				Process evaluation results

As shown in Table 2, both phases of this PhD intervention development study mapped onto the INDEX key actions to 'involve stakeholders' and 'bring together a team'. The phase 1 systematic review met the actions to 'review the published research' and 'draw on existing theory' whilst the 'collect primary data' action was fulfilled by the MSc pilot results. Jointly they supported the key action to 'articulate programme theory'. The process evaluation in phase 2 addressed four key actions, which were to 'undertake primary data collection', 'understand context', and 'attend to future implementation', all of which supported the researcher to 'design and refine the intervention'.

The next section will elaborate on the two actions which supported both phases, while all other key actions will be mapped in their respective phase methodology sections. The last section outlines the forthcoming methodological and empirical chapters for clarity.

3.3.2.1 Stakeholder Involvement

INDEX states the key action to 'involve stakeholders' in intervention studies will help identify priorities, understand the problem, and produce solutions that are implementable in the real world (O'Cathain et al. 2019a). Specifically, working with advisory groups of young people in research is a growing activity (Bourke and Loveridge 2014), as they offer insight into the acceptability, relevance, and ethicality of research. The young people's advisory group worked with were ALPHA (Advice Leading to Public Health Advancement), an established group developed and maintained through DECIPHer (Centre for the Development, Evaluation, Complexity and Implementation in Public Health Improvement). Up to 20 young people aged 13-20 who live throughout South Wales attended meetings to help direct the public health research undertaken in the Centre. The young people have received basic training on public health and research methods, so they are fully informed to engage in debates about public health research. The group came from a range of areas in South Wales, and hence different secondary schools; so had a range of knowledge about how schools' function, how they differ, and advice on how to implement fieldwork and understand results.

The stakeholder involvement work undertaken was in line with the guidance as it was planned within the funding application and conducted periodically throughout the research (Table 2). A public involvement log along with session write-ups are available in Appendix

A. Altogether, four sessions were run with ALPHA which were undertaken as per the guidance recommendation that "*Innovative activities can be used to help engage stakeholders*" (O'Cathain et al. 2019a, p. 5). The four activities and the focus of sessions were as follows: a SWOT analysis so ALPHA could assess the strengths, weaknesses, opportunities, and threats to the original PhD idea prior to developing the PhD funding application; a Think Stations activity where the young people physically moved around three different workstations to consider how the three participatory methods being piloted during the MSc should be conducted and what ethical issues needed deliberating; the use of vignettes of intervention functions and their respective forms located from the systematic review were produced for young people to comment on to direct the co-production fieldwork in phase 2; and an online Mentimeter session which allowed the young people to give their views on the process evaluation results (conducted online due to COVID restrictions).

3.3.2.2 Bring Together a Team

In accordance with PhD regulations two experienced supervisors guided and supported the decision-making for the intervention development study. To draw on further perspectives in the study an international expert panel of six researchers were asked to nominate vital papers for inclusion in the systematic review.

3.4   The Structure of the Remaining Thesis

Chapter 4: Phase 1 - Building Co-production Theory

The chapter consolidates the first phase which built the initial co-production theory. The phase determined the most appropriate type of co-production for phase 2 and drew out the type's intervention properties. This was achieved predominantly through a systematic review of co-produced school-based health intervention studies with a thematic synthesis of stakeholders' views. It is complemented by work with ALPHA, and an MSc pilot.

Chapter 5: Phase 2 – Methodology to Refine Co-production Theory

The chapter outlines the design of the second phase which assessed and refined the co-production theory. This was accomplished through a mixed methods, process evaluation with two case study secondary schools where co-production was delivered. It is followed by three process evaluation empirical chapters.

Chapter 6: Implementation Fidelity accounted for by Context

The chapter explores implementation through functional fidelity and uses the similarities and differences found between the case study school contexts to explain what supported or compromised implementation.

Chapter 7: The Upstream Mechanisms of Shared Decision-Making

The chapter assesses the four postulated decision-making mechanisms outlined in Chapter 4. It covers how the mechanisms of change worked within the co-production intervention, whether this was as postulated, and what affected their functioning. It also explains an emergent unintended consequence of the intervention.

Chapter 8: The Social Validity of Wellbeing Plans

The chapter covers the relevance and likelihood of wellbeing plans being implemented in the case study schools. It closes by considering the dynamism of the concepts of relevance and likelihood of implementation and the implications of this for co-production.

Chapter 9: Refinements to Co-production Theory

Chapter 9 collates the findings from the three empirical chapters to produce recommendations to refine the programme theory for school-based co-production.

Chapter 10: Discussion

The thesis closes by revisiting the thesis aims and rationale as well as discussing the implications of this intervention development study.

4 Chapter 4: Phase 1 Methodology and Results for Building Co-production Theory

The chapter outlines the methodologies and results for phase 1 of this study, which was building initial programme theory for co-production. The four key intervention development actions to 'review published research evidence', 'draw on existing theory', 'involve stakeholders', and 'undertake primary data collection' were accomplished and are detailed within the chapter. This involved the conduct of a systematic review, iterative stakeholder involvement work with ALPHA (Advice Leading to Public Health Advancement), and a pilot study with secondary school students, respectively. Within this chapter, the prominence of the systematic review is due to it providing most of the information to articulate the co-production intervention theory in terms of the resources, forms, functions, mechanism, output, and potential outcomes. Enacting and assessing the enactment of these intervention properties needed further exploration, which was accomplished by drawing on data from the MSc pilot and stakeholder involvement session.

The questions that will be addressed in this phase are:

- *What types of co-production are utilised in developing secondary school-based health interventions?*
- *What is the most appropriate type of co-production for phase 2 of this thesis?*
- *What is the underpinning theory of change and intervention properties for this type?*

Sections 4.1-4.3 outline the methodologies for the systematic review, the stakeholder session for this phase, and the MSc pilot, respectively. Section 4.4 gives an overview of key systematic review results which supported the decision to use a system-level capacity-building co-production type in phase 2 of the thesis. It continues by articulating the intervention properties for this type. Section 4.5 draws on the results from the stakeholder involvement session and the pilot study to discuss how the intervention will be operationalised within schools in phase 2. Intervention clarity is provided through a logic model of the co-production theory and a Function and Form Matrix.

4.1 Methodology for Systematic Review and Thematic Synthesis of Research on Co-production in Secondary Schools

Two key actions within the O'Cathain (2019a) guidance are to review the published research evidence and draw on existing theory. This was achieved through a systematic review of the research on co-producing school-based health interventions with an integrated thematic synthesis of stakeholders' co-production experiences. A protocol (CRD42018090920) was registered in PROSPERO, and the overall results, reported in accordance with the 2009 PRISMA reporting guidelines, have been published elsewhere (Reed et al. 2020). The peer-reviewed publication is attached as an appendix (Appendix B). The systematic review is not reported in the same detail and format in the present PhD for two reasons. First, restrictions in the university policy on the Submission of Research Theses (Cardiff University 2018) which state papers can be adapted to conform to a standard narrative thesis but cannot be included in their entirety. Secondly, whilst there is overlap in the questions for the published paper and this research phase, additional work has been done to justify the use of one co-production type over the others found, and an extended articulation of this type's properties in terms of functions, forms, and mechanisms is given to support the researcher to conduct the co-production process in phase 2. What follows is a synopsis of the review which is reported according to the most up-to-date PRISMA guidelines available when publishing the paper (Shamseer et al. 2015).

4.1.1   Introduction

4.1.1.1 Rationale

Section 2.9 outlined the rationale for reviewing the literature because there has been an increase in co-produced school-based interventions and their evaluation studies which has demonstrated a promising, emergent body of evidence (Bond et al. 2004; Ozer and Douglas 2013). Despite this, understanding and progression in the field was nebulous, piecemeal, and required clarity, which the review attempted to address.

4.1.1.2 Review Questions

The review questions were:

> 1. What are the types of co-production utilised in developing secondary school-based health interventions, and what are their underpinning theories of change, and intervention properties?

2. What are stakeholders' experiences of these co-production types?

4.1.2   Methods

4.1.2.1 Eligibility Criteria

Interventions were included that met the criteria for school-based co-production explicated in section 2.10, which were:

1. At a minimum young people were involved in development as the targets for and recipients of intervention. This resulted in omitting interventions where only adult stakeholders contributed to co-production.

2. Stakeholders needed to be involved in the functions of problem-setting and solving.

3. Involvement was conducted within secondary schools, so stakeholders generated school-specific interventions responsive to needs.

Further paper inclusion criteria were used which were:

1. Intervention Primary Outcome: MHWB, violence and aggression, and/or substance use as these were the most frequent focuses of co-production studies found during scoping.

2. Data: Studies detailing intervention types, properties, and/or stakeholders' experiences where data were available in study documentation.

3. Study Context: Any Country

4. Language: Published in English.

5. Date: Published between the Ottawa Charter for Health Promotion (World Health Organisation 1986) as the foremost global agreement supporting co-production with stakeholders in interventions, and the search date (February 2018).

4.1.2.2 Information Sources and Searches

The review involved searching five relevant school health electronic bibliographic databases (Medline and PsycINFO (Ovid); Embase; ASSIA; and ERIC). The search was developed in Embase (Appendix C) and adapted for other databases. Further papers were located through citation tracking, consultation with a panel of six international experts, and contacting authors of potential papers for further documentation.

4.1.2.3 Study Selection

Rayyan online software (Ouzzani et al. 2016) was utilised during screening after retrievals were exported from Endnote. Throughout study screening, data extraction, and quality assessments, two reviewers undertook processes independently, with the PhD researcher maintained as the lead, and the PhD supervisor (RE) was utilised as an arbitrator to reconcile unresolved disparities.

4.1.2.4 Data Extraction

Data extraction was conducted through a standardised Excel pro-forma refined through piloting with known co-production studies and confirmed by the PhD supervisory team. Extracted data items linked to study/paper characteristics and co-production. For the former, items extracted were: author; date; country; publication type; study focus; methods; intervention characteristics; and primary, secondary, and process outcomes. For the latter, items extracted were: co-production theory; included stakeholders; recruitment strategies; form of involvement; development tasks undertaken; problem-setting and solving activities undertaken; resultant health solutions and their adoption processes; and implementation information.

4.1.2.5 Quality Assessment

Quality assessment was undertaken through The EPPI Centre health promotion review criteria (Rees et al. 2009; Jamal et al. 2013). Paper trustworthiness was assessed through critiquing the sampling strategy, data collection and analysis, and the extent to which findings were grounded in data. Relevance to this review was considered by assessing findings depth and breadth and whether multiple stakeholders' views were considered, with student's views privileged. Papers were assigned low, medium, or high ratings for both trustworthiness and relevance. Ratings (Appendix D) informed the contribution papers made to syntheses.

4.1.2.6 Syntheses

Mapped onto the two review questions, findings were synthesised in two distinct forms. First, continual reading of extracted data allowed the PhD researcher to understand the differences and similarities between studies. which resulted in initial ideas about different co-production types and their links to theory. These ideas were refined with the supervisory team before the PhD researcher and another researcher independently categorised studies by

type. Extracted data about co-production were produced into logic models for each type by the PhD researcher (Appendix E).

Secondly, all paper data linked to co-production and stakeholders' views were coded in NVivo. Some studies were multicomponent as they included co-production as well as other intervention components; in this case, only co-production data were coded. This involved the PhD researcher making judgements on coding where it was not clear which component was being addressed. Accuracy was verified with double coding of 1/3 of papers by another researcher. The sequential steps followed by each coder were: coding differentiated into different types, and then into different stakeholders within types; thematic synthesis (Thomas and Harden 2008) used to code each line of papers descriptively; memos constructed to summarise themes; finally, further memos developed about analytical themes. Initial findings were discussed with the supervisory team and refined where necessary.

4.2   Methodology for Stakeholder Involvement

Section 3.3.2.1 outlines the stakeholder involvement work with ALPHA. The current session was conducted post systematic review to discuss the results and support planning the fieldwork for phase 2. It consisted of using vignettes of intervention functions and their respective forms located from the systematic review with the young people. They then commented on the proposed forms to direct how the researcher intended to implement them. This helped to support the development of preferred forms to run in schools in phase 2. However, they were flexible to be tailored to individual school contexts, with ALPHA providing some of the nuance on how they could be tailored.

4.3   Methodology for the MSc Pilot of Participatory Methods with Students

The final guidance action met within phase 1 was to collect primary data to address key uncertainties within the evidence base. The pilot study, which was completed under the auspices of the MSc dissertation (Reed 2017), did this. Literature scoping for co-produced studies showed practice frequently privileged gathering student data to understand health within school settings through researcher-initiated forms. For example, the studies commonly utilised needs assessments and student surveys (see Patton et al. 2003; Fletcher et al. 2015) or allowed students to decide data collection methods without clearly stating which were used (e.g. Ozer and Douglas 2013). Outlined in section 2.10, the Convention on the Rights of the

Child (United Nations 1989), the Ottawa Charter, the HPS framework (World Health Organisation 1996), and the sociology of childhood (James and Prout 1997; Clark and Statham 2005; Darbyshire et al. 2005; Dahlberg et al. 2007) provided the rationale for young people being able to develop their own knowledge about school wellbeing. For this reason, it was considered valuable to support students to undertake participant-initiated forms of data production, but method suitability was unclear.

Within social sciences, an abundance of participatory research methods are employed to support participants, including young people, in generating data from a participant perspective (Mannay 2016). In deciding which methods could support students to articulate their understanding of wellbeing it was considered pragmatic to pilot a small number of them. Choice of pilot methods was guided by their previous use with young people to elicit their accounts of health (Macintyre et al. 1993; Darbyshire et al. 2005) whilst ensuring the different modalities of talking, seeing, and creating (Edwards and Holland 2013) were trialled. This resulted in piloting guided walks, photography, and mapping.

As a suitable Assessment Framework did not exist, one was constructed. This was achieved through using the underlying assumptions participatory methods were historically propagated through, which have more recently been problematised (Gallagher 2008a,b; Holland et al. 2010). These assumptions were four-fold as participatory methods have been assumed to be: an acceptable form to conduct research with young people (Punch 2002); a feasible way to undertake research within spaces young people know such as schools (Gallagher 2008c); more democratic methodologically as young people hold the power during enactment (Gallacher and Gallagher 2008; Gallagher 2008b); and a more productive form of data generation (Gallagher 2008b; Holland et al. 2010). Hence, the framework included the four criteria: acceptability, feasibility, power enactment, and internal validity.

The study had two stages. The first was to undertake the participatory methods with secondary school students so they could produce wellbeing data about their school context. Year 8 students were involved in guided walks (n=6), photography (n=6) and mapping (n=2). Within this stage, methods were assessed by the researcher through observations (n=14) of the methods and the elicitation interviews that were concurrent with (guided walks) or after (photography and mapping) methods. Students also assessed the methods they were assigned

to in semi-structured interviews (n=14). Stage 2 involved students assessing the internal validity of the wellbeing data generated through method-specific focus groups (n=3). This allowed students to also add further reflections on acceptability, feasibility, and power enactment.

In summary, the three methodologies of a systematic review, a stakeholder involvement session, and an MSc pilot study have been used and described in this chapter to show what informed the building of co-production intervention theory. Leading on from this, the ensuing section will consolidate the knowledge learnt through these methodologies to produce the initial co-production theory.

4.4   Key Results from the Systematic Review for Articulating Co-production Type and Intervention Properties

The knowledge developed about the intervention in this section is inclusive of the type of co-production accepted, the underpinning theory, resources, functions, and their respective multiple forms. Table 3 maps out which methodologies linked to each.

Table 3: Mapping Intervention Articulation by Phase 1 Methodologies

	Type	**Theory/ Mechanism**	**Resources**	**Functions**	**Forms**
Systematic Review	X	X	X	X	X
Stakeholder Involvement				X	X
Pilot Study					X

4.4.1   Co-production Type

As shown in Table 3, data on intervention type came from the systematic review. Full systematic review screening, the included studies, and study characteristics are given in the published paper in Appendix B. A total of 37,976 articles were identified including four by the international expert panel. Nineteen papers were excluded as they did not have sufficient descriptions of co-production processes, even after efforts to locate more data from authors. After de-duplication, screening processes, and the addition of eight supplementary study sibling papers used to represent co-production adequately, 30 papers detailing 22 studies remained. These aided the synthesis of types, underpinning theory, and intervention

properties. A subset of 23 papers of 18 studies were analysed for the systematic review to understand stakeholders' experiences and here to support the consideration of what type of co-production was most appropriate for phase 2.

The main finding from the systematic review was a typology of co-production for secondary school-based health interventions which defined and described three types. These were called: external capacity-building; individual-level capacity-building: and system-level capacity-building. The typology discriminated between the capacity-building undertaken for studies, with health promotion capacity defined as the ability to *"identify health issues and develop appropriate mechanisms to address them"* (Hawe 2000, p. 4), synonymous with conducting the problem-setting and solving functions of co-production. This section commences by describing the three types found in the review and continues to justify the decision to utilise the system-level capacity-building type within phase 2.

External capacity-building co-production was evidenced by six interventions described in six papers (Delara 2000; Paul et al. 2010; Tew 2010; Paul et al. 2012; Vaughn et al. 2013; Voight 2015). This type involved co-production capacity-building for an individual external to the school, which was either researchers who enhanced their knowledge of established co-production frameworks (Delara 2000; Paul et al. 2010,2012; Vaughn et al. 2013; Voight 2015) or charity workers who drew on theory and research to build a framework (Tew 2010). Once in school settings the researchers and charity workers used these frameworks to support secondary school stakeholders to problem-set and solve.

Individual-level capacity-building included nine interventions detailed in 12 documents (Youth In Focus 2002; Jensen et al. 2005; Epstein 2007; Simovska 2007; Ozer et al. 2008; Simovska and Jensen 2008; Soleimanpour et al. 2008; Ozer et al. 2010; Miller 2011; Ozer et al. 2013; Goodnough 2014; Shriberg et al. 2017). This included the delivery of formalised curricula or training for students to upskill them to identify and prioritise health issues and activities to redress these. These included students deciding on project methods, for example, what data collection methods to use during problem-setting. Researchers (Jensen et al. 2005; Simovska 2007; Simovska and Jensen 2008; Miller 2011; Goodnough 2014; Shriberg et al. 2017) or specialist youth workers (Youth In Focus 2002; Epstein 2007; Ozer et al. 2008; Soleimanpour et al. 2008; Ozer et al. 2010; Ozer et al. 2013) developed curricula/training,

and combinations of delivery to students were multitude, with involvement from researchers, youth workers, and school teachers.

System-level capacity-building was found in seven interventions conveyed in 12 papers (Bond et al. 2001b; Glover et al. 2002; Mino 2003; Poulin and Nicholson 2005; Bonell et al. 2010a; Bonell et al. 2010b; Davison et al. 2011; Bell 2014; Bonell et al. 2015; Fletcher et al. 2015; Hawe et al. 2015; Bell et al. 2017). All interventions focused on building capacity through the establishment of Research Action Groups (RAGs) involving multiple school and external members that undertook problem-setting and solving.

The decision to use system-level co-production capacity-building was based on evidence comparisons for types. Specifically, quality assessments (Appendix D) of paper subsets, and stakeholders' experiences as found in the review's thematic synthesis. Regarding quality assessments, the paper subset for system-level studies ranged through low (Glover et al. 2002; Poulin and Nicholson 2005; Davison et al. 2011; Hawe et al. 2015), medium (Bond et al. 2001b; Mino 2003; Bell 2014; Bell et al. 2017), and high (Bonell et al. 2010a; Bonell et al. 2010b; Bonell et al. 2015; Fletcher et al. 2015) for trustworthiness of results and relevance to the review. However, the high appraised papers were extensive mixed methods process evaluations with a range of stakeholders including students, adult RAG members, school decision-makers, intervention facilitators, and researchers. Further, knowledge has accreted in this paper subset as four studies (Bond et al. 2001b; Glover et al. 2002; Bonell et al. 2010a; Bonell et al. 2010b; Davison et al. 2011; Bonell et al. 2015; Fletcher et al. 2015; Hawe et al. 2015) are iterations of the same project, resulting in the findings from previous studies structuring future interventions (Bonell et al. 2010a; Bonell et al. 2010b; Bonell et al. 2015; Fletcher et al. 2015).

In comparison, the external capacity-building type had a very weak evidence base demonstrated through five papers assigned low appraisal ratings (Delara 2000; Paul et al. 2010; Tew 2010; Paul et al. 2012; Vaughn et al. 2013) and one assigned a medium rating (Voight 2015). Papers predominantly focused on the processes rather than assessments of co-production or stakeholders' views of them. Additionally, papers lacked depth in reporting on data collection methods, participants involved, and findings. For the individual-level capacity-building type the evidence base was also varied. Trustworthiness ratings ranged

from low (n=3) (Youth In Focus 2002; Jensen et al. 2005; Soleimanpour et al. 2008), as data procedures were omitted, through medium (n=6) (Epstein 2007; Ozer et al. 2008; Ozer et al. 2010; Miller 2011; Goodnough 2014; Shriberg et al. 2017), and high (n=3) (Simovska 2007; Simovska and Jensen 2008; Ozer et al. 2013), where analytical procedures were clear and data interpretation was verified by quotes. Review usefulness was deemed low (n=3) (Youth In Focus 2002; Soleimanpour et al. 2008; Miller 2011), medium (n=7) (Epstein 2007; Simovska 2007; Ozer et al. 2008; Simovska and Jensen 2008; Ozer et al. 2010; Goodnough 2014; Shriberg et al. 2017), and high (n=2) (Jensen et al. 2005; Ozer et al. 2013). Low denoted papers had brief researcher reflections with limited student and facilitator experiences, whereas high papers included multiple co-production perspectives. The overriding issue was the paradox of a complete omission of student views in some evaluation studies, whilst other papers privileged adults' views.

Regarding co-production experiences, stakeholders' views were themed around how acceptable receipt of the intervention was, the feasibility of delivering co-production within school settings, and stakeholders' thoughts on decision-making in terms of developing and delivering co-produced health activities. The limited data for external capacity-building meant it was not possible to consider it for inclusion in phase two of the PhD. Considering the other two types, all stakeholders in both types reported high levels of acceptability for activities and processes. Additionally, feasibility variations were described by stakeholders in both types, however such fluctuations have been outlined in other school-based studies (Langford et al. 2016). The overarching issue was that feasibility was not considered through a complex systems thinking perspective in evaluations mainly due to evaluations predating the popularity of considering context in this manner. This further highlights the need for this in phase 2 of this PhD.

The difference between types that set system-level as the correct type for this PhD was found in the analytical theme of decision-making. Studies reported fewer limitations in decision-making for the system-level type. Within the individual-level, limitations were noted by a range of stakeholders including facilitators and researchers. They agreed that student ideas were hard to implement as they chose targets that were in opposition to accepted school practices and policies (Ozer et al. 2008; Ozer et al. 2013), required community change which the school decision-makers could not affect (Jensen et al. 2005), or changes that headteachers

didn't agree with so did not adopt (Jensen et al. 2005). Therefore student decision-making was sometimes constrained to ensure they developed realistic student-led actions rather than school change (Soleimanpour et al. 2008; Ozer et al. 2013) or 'quick wins' that resulted in students seeing some change happen (Ozer et al. 2008). Rather than perceiving this lack of implementation as a core issue with how co-production functioned, studies framed this as an opportunity to understand democracy (Jensen et al. 2005), with curricula adapted post one study to include lessons learnt about unsuccessful co-production (Ozer et al. 2008).

Similarly, decision-making was reported as constrained within the system-level type on a few occasions. This was because facilitators were trying to ensure health actions were produced with clear intervention logic and that RAGs were mindful of avoiding iatrogenic effects (Bonell et al. 2015; Fletcher et al. 2015). However, high levels of adoption of health activities developed through the co-production process by RAGs was partially attributed to stakeholders from throughout the school system, including the SMT, taking part in the decision-making processes. Additionally, student data legitimatised health problems (Bond et al. 2001b; Bell 2014; Fletcher et al. 2015; Bell et al. 2017) and ensured schools didn't overlook salient problems (Fletcher et al. 2015).

In summary, the strength in the system-level evidence base was demonstrated through quality assessments and the accumulative knowledge developed by linked studies, as well as the limited decision-making problems. The latter increased the likelihood of health activity adoption making it the obvious choice to replicate in this PhD. The rest of this chapter will focus on explicating the intervention properties for this co-production type.

Author & Year	Study	Component	Country	Design	Setting	Outcome	Resource	Underpinning Theory/ies & Research	Frameworks
Bond et al 2001 **Glover et al 2002**	**Gatehouse Project**	Multi	Australia	Process Evaluation of Cluster RCT	12 secondary schools	Mental Health, Bullying, and Substance Use.	External Facilitator Manual Student Data	Health Promoting Schools Framework (WHO, 1995) Attachment e.g. (Rutter et al, 1997) & (Resnick et al, 1997) Risk and Protective Factors (Hawkins et al 1992).	Action Research Cycle
Mino 2003	**Brownsville**	Mono	USA	Retrospective Process Evaluation	A middle school	Bullying, Weapon Carrying & Violence.	Student Data		Scanning, analysis, response, & assessment Model
Poulin and Nicholson 2005	**SCIDUA**	Mono	Canada	Process Evaluation of Quasi-Experiment	Four middle/senior schools	Substance Use & Gambling.	External Facilitator	Cooperative Participatory Research (Reason, 1994) Stages of Change Model (Prochaska & DiClemente, 1982) Cognitive Dissonance (Festinger, 1957); Jessor's (1993) adolescent risk theory; Social Learning Theory (Room, 1994);	
Bonell et al 2010a Bonell et al 2010b	**Healthy School Ethos**	Multi	UK	Process Evaluation of Intervention Pilot	Two secondary schools	Substance Use	External Facilitator Manual Student Data	Health Promoting Schools (WHO, 1995) Pathways of school effects on drug use (Fletcher, 2009) Social psychology theories (Ajzen et al 2009; Bandura, 1977; Catalano & Hawkins 1996; Flay et al, 1994). Attachement Theory e.g. (Rutter et al, 1997) & (Resnick et al, 1997)	

Davison et al 2011 Hawe et al 2015	**CORE**	Multi	Canada	Process Evaluation of Intervention Pilot	A high school	Mental Health, Bullying, Substance Use, and Sexual Health	External Facilitator Student Data	Health Promoting Schools (WHO, 1995) Social Development Model (Catalano & Hawkins, 1996; Catalano, 2004; Catalano et al., 1996) Attachment and school connectedness (Rutter et al, 1997) & (Resnick et al, 1993) - Attachment and social support theories (Patton et al. 2000 and 2003)	
Bell 2014 & 2017	**SEL Cycle**	Mono	USA	Case Study	An elementary-middle school	Wellbeing	External Facilitator Student Data	Nastasi et al (2004) Participatory Culture-Specific Intervention Model National School Climate Council (2007) school climate reform model Hess et al (2012) public health problem-solving model for schools. Devaney et al (2013) social and emotional learning implementation cycle	The SEL (Socio-Emotional Learning) Cycle
Fletcher et al 2015	**INCLUSIVE**	Multi	UK	Process Evaluation of Pilot Trial	Four secondary schools	Bullying, Aggression & Violence.	External Facilitator Manual Student Data	Health Promoting Schools Framework (WHO, 1995) Theory of Human Functioning and School Organisation (Markham and Aveyard, 2003)	
Bonell et al 2015									

Table 4: System-Level Capacity-building Intervention Studies

4.4.2   Intervention Properties

As shown in Table 3, data on intervention properties were derived from the systematic review. Intervention properties were defined in section 3.2.2 as follows: resources were the inputs needed to support functions and forms; forms were the adaptable activities in which to enact functions; functions were the standardised steps in the intervention process necessary to trigger change; and mechanisms as what change was enacted within the setting.

Two challenges were shown in the system-level type dataset to articulate intervention properties (Table 4). First, four interventions were multicomponent studies (Bond et al. 2001b; Glover et al. 2002; Bonell et al. 2010a; Bonell et al. 2010b; Bonell et al. 2015; Fletcher et al. 2015; Hawe et al. 2015) that required occasional researcher judgement about what intervention properties linked to the co-production component. This was achieved through the multiple readings of papers to gain a clear understanding of studies. Secondly, availability of data meant the researcher needed to explicate some data or that some was missing. For example, only three interventions utilised co-production frameworks (Bond et al. 2001b; Glover et al. 2002; Mino 2003; Bell 2014; Bell et al. 2017), creating the need for forms within functions to be explicated. Additionally, whilst intervention manuals were discussed in three studies (Bond et al. 2001b; Glover et al. 2002; Bonell et al. 2010a; Bonell et al. 2010b; Bonell et al. 2015; Fletcher et al. 2015) even after attempts to contact intervention teams only one manual for the Gatehouse Project was available.

4.4.2.1 Intervention Theory and Mechanisms of Change
As outlined in the previous section, system-level capacity-building involved the establishment of Research Action Groups (RAGs) with multiple school and external members. Seven interventions reported in 12 papers were included, and Table 4 shows the intervention characteristics and the properties of resources, underpinning theories, and frameworks for the studies included in this subset.

System-level capacity-building theory positioned co-production at the organisational level, actively involving stakeholders in shared decision-making to affect change through developing school plans (Bond et al. 2001b; Glover et al. 2002; Bell 2014; Bell et al. 2017). Articulated in six studies through a pluralistic layering of academic theory, conceptual frameworks and models, and research combined with latent hypotheses for how programmes

functioned (Table 4). Overarching theory for studies was drawn from the HPS Framework (World Health Organization 1997) for the four multicomponent studies, and Participatory Action Research (e.g. Reason 1994) for the two mono-component interventions. As shown in section 2.4, The HPS Framework's tripartite model targets change at the individual level mainly through curricula, the system-level through modifying school climates, ethos, and/or policies, and the community-level through community engagement to reinforce interventions (Langford et al. 2016). These studies position co-production at the organisational level to allow RAGs to identify and implement effective school change strategies through shared decision-making (Bond et al. 2001b). Shared decision-making being conceived as the ability and conditions needed for RAGs to make decisions as a group. Likewise, mono-component studies made predictions such as *"using a participatory, culture-specific, action research approach to universal, SEL-focused school climate reform will produce a culturally acceptable, socially valid, and sustainable process and plan for school reform"* (Bell 2014, p. 48).

Knowledge about the change pathways of utilising RAGs as decision-making structures on behalf of schools to affect health outcomes has accreted over studies but was still not comprehensive. Three important factors in the theoretical evidence base were found. First, it is posited that attachment processes between the individual students and the school mediate health outcomes in the interventions. This was shown in the three studies of the Gatehouse Project, The Healthy School Ethos Project, and Core (Bond et al. 2001b; Bonell et al. 2010a; Bonell et al. 2010b; Hawe et al. 2015) through their use of Attachment theory and Social Development theory. School attachment or connectedness is believed to make students feel fairly treated, included, and close to others which are protective against health risk behaviours (1992; Resnick et al. 1997). Hence the Gatehouse intervention promoted *"building a sense of security and trust, enhancing skills and opportunities for good communication, and building a sense of positive regard through valued participation in aspects of school life"* (Bond et al. 2001b, p. 370).

Secondly, there has been disparity between articulating upstream and downstream pathways, first drawn attention to through The Healthy School Ethos project (Bonell et al. 2010a; Bonell et al. 2010b). Downstream pathways were defined as connections between the mediated outcomes of attachment and feeling supported in schools to the health outcomes, as

shown above. Whilst upstream were designated as the pathways which run from participants receiving the interventions to these intermediate outcomes. Due to the lack of articulation of the upstream pathways, The Healthy School Ethos project built them retrospectively through the analysis of qualitative process evaluation data. It was found that students' involvement in planning and/or delivering interventions made them feel listened to, taken seriously, and empowered to make change. This then transferred to those students who were in receipt of the planned health activities as they experienced increased notions of school safety, attachment, feeling supported, and/or their self-regard.

Thirdly, there has been a progression from multiple, distinct theories being combined within studies to drawing on a single encompassing theory (shown in Table 4). For example, The Healthy School Ethos project drew on formalised individual and social psychology theories such as Social Learning Theory and The Theory of Planned Behaviour (Bandura 1977; Flay and Petraitis 1994; Catalano et al. 1996; Ajzen et al. 2009) in conjunction with the pathways of school effects on drug use (Bonell et al. 2010a; Bonell et al. 2010b) to acknowledge structural influences on health behaviours. Whereas INCLUSIVE, aligned to a complex sociological theory of HPS which succinctly orientates health in human functioning (Markham and Aveyard 2003). The latter theory postulates core upstream change pathways as encouraging student involvement in school decision-making processes through the formation of partnerships with community actors. This allows the erosion of barriers between students and teachers, alongside the development of students' action competence (Jensen et al. 2000), that is, their skills and understanding, so they can engage in the health promotion processes and take action.

However, the latter does not fully explain how RAGs work and share decision-making. The INCLUSIVE study highlighted the salient issue that having the most diverse set of students on these RAG formations was important to ensure students within groups echoed the voices of all in the school. Further, a critique of both the sociological theory of HPS and INCLUSIVE is that neither orientate 'action competence' to the group setting. Action competence has been elaborated at the individual-level through democratic education, as shown in the systematic review results, with the individual-level capacity-building type of co-production. It is characterised through students increasing their knowledge and understanding of health to enable them to make conscious decisions on health actions to

target the causes of those problems (Simovska and Jensen 2008). Extrapolating this to the group setting of a RAG, results in the need for the group to increase their knowledge of the health context of their schools. Further, understandings of co-production highlight both a relational and emotional element are needed, in the forms of developing good relationships and feeling empowered and included (Clarke et al. 2019) so RAGs can share decision-making.

Linking together these ideas, four upstream mechanisms were hypothesised to support RAGs in school decision-making to produce needs-based plans, which when delivered, would increase student attachment, and positively affect health outcomes. The mechanisms were for RAGs to: have a diverse set of members to allow all the opinions in the school to be represented during shared decision-making; develop good relationships so that they worked together to share decision-making; understand the wellbeing context of the school so they can make informed decisions; all of which should lead to RAGs feeling empowered to participate in shared decision-making.

In conclusion, a profusion of theories, frameworks, models, and research have been drawn on in system-level co-production studies. Initially, projects focused on downstream pathways that mediated processes, i.e how increasing attachment to schools can result in better health outcomes. More recent interventions have started to attend to upstream pathways to understand how RAGs affect change, but underdeveloped pathways were found, so theoretical ideas were extrapolated from the individual to the group setting, and nascent co-production research was utilised to fill gaps. After considering the theoretical underpinning of the co-production type, the next section will elaborate on the intervention properties necessary to trigger these mechanisms including the resources, functions, and forms.

4.4.2.2 Resources

As shown in Table 3, data on intervention resources were located by the systematic review. Table 4 shows the three main resources used to support the RAGs to undertake co-production functions were external facilitators, student data, and intervention manuals.

External facilitators were present in six studies. This role was taken on by either researchers who were existing research team members that took on the dual roles within studies (Bond et

al. 2001b; Glover et al. 2002; Poulin and Nicholson 2005; Bell 2014; Bell et al. 2017) or individuals employed solely to facilitate RAGs (Bonell et al. 2010a; Bonell et al. 2010b; Davison et al. 2011; Bonell et al. 2015; Fletcher et al. 2015; Hawe et al. 2015). For the latter, process evaluations highlighted the importance of this individual having either experience of educational settings in a school leadership capacity, or a track record in facilitating school-based student-centred projects. These individuals would then have the skills to facilitate the overall co-production processes within schools, to support the advocacy of voices within RAG discussions, and to aid the functioning of groups during activities.

Student data were collected by research teams in six studies (Bond et al. 2001b; Glover et al. 2002; Mino 2003; Bonell et al. 2010a; Bonell et al. 2010b; Davison et al. 2011; Bell 2014; Bonell et al. 2015; Fletcher et al. 2015; Hawe et al. 2015; Bell et al. 2017). Note these were considered a resource rather than an intervention activity as the data were collected by the research teams. The main aim was to collect rigorous data for RAG decision-making. Although the focus of surveys varied, there was an emphasis on these data providing an understanding of needs in the schools regarding MHWB. Therefore nomenclatures used included 'needs survey' or 'needs assessment'. Data were collected from select year groups (Bond et al. 2001b; Glover et al. 2002; Bonell et al. 2010a; Bonell et al. 2010b; Davison et al. 2011; Bonell et al. 2015; Fletcher et al. 2015; Hawe et al. 2015), whole student populations (Mino 2003; Bell 2014; Bell et al. 2017), and in one study with staff too (Bell 2014; Bell et al. 2017). Stakeholders thought this student data supported the validity of decision-making on the health needs and ensured school managers did not neglect salient issues (Bond et al. 2001b; Bell 2014; Fletcher et al. 2015; Bell et al. 2017).

Three studies had intervention manuals which structured the co-production processes (Bond et al. 2001b; Glover et al. 2002; Bonell et al. 2010a; Bonell et al. 2010b; Bonell et al. 2015; Fletcher et al. 2015). Whilst two manuals were elusive, study documentation did include descriptions of manual content for one (Bonell et al. 2010a). A further study was documented within a thesis with clear explanations and justifications for processes (Bell 2014; Bell et al. 2017). These documents showed a clear description of project aims and objectives, cycles of co-production which were occasionally shaped by frameworks (Bond et al. 2001b; Glover et al. 2002; Bell 2014; Bell et al. 2017), and activity session plans. As co-

production stakeholders thought manuals were difficult to understand, often facilitators selected certain parts to share with RAGs (Bonell et al. 2010a).

4.4.2.3 Intervention Functions and Forms

The following section draws out the functions and forms data found in the systematic review. Papers within the systematic review did not present interventions in terms of functions, but the synthesising of forms led to the discovery of shared functions throughout types. Logic models for types (Appendix E) show these shared functions. As already stated, the pre-set functions of problem-setting and solving (Hawe 2000; Bond et al. 2001b) were demarcated to allow the distinction between co-production from other forms of collaboration with stakeholders and utilised as review inclusion criteria. This also supported complexity as forms and stakeholders were permitted to vary between co-production studies even within types. Additionally, capacity-building has already been acknowledged as the function which allowed the distinction between different types of co-production. Other functions found were termed structure, recruitment, group development, adoption, implementation, and evaluation.

Terms were defined cognisant with a complex systems perspective hence representing how the school system interacts with them, and so were closely aligned to Hawe et al. (2009) (section 3.2.2). Terms are defined below in the order they were enacted within interventions.

1. Capacity-building – How stakeholders are enabled to undertake intervention co-production within schools.
2. Structure – How stakeholders are connected within schools through the RAG subsystem.
3. Recruitment – The development of new activity settings or events if a necessary structure does not already exist.
4. Group development – The development of social relationships between stakeholders.
5. Problem-Setting – How stakeholders produce an understanding of how health problems manifest in schools and decide health priorities.
6. Problem-Solving – How stakeholders decide to redress problems.
7. Adoption – Whether and how processes are used to accept recommended health activities.
8. Implementation – The delivery of resultant health activities and how they saturate context.
9. Evaluation – The changes in student health outcomes.

Consolidating the learning for the intervention thus far from the theory/mechanisms, resources and functions, figure 1 provides an initial logic model for the system-level capacity-building co-production type.

Figure 1: Initial Logic Model of the System-level Capacity-Building type of Co-production

RESOURCES	RAG FUNCTIONS	UPSTREAM MECHANISMS	OUTPUT	SCHOOL FUNCTIONS	DOWNSTREAM MECHANISMS	OUTCOME

External Facilitator; School Data RAG group manual.

RECRUITMENT Recruit a diverse group of school and community personnel, and students.

GROUP DEVELOPMENT Develop the group to be able to undertake the intervention.

PROBLEM-SETTING Develop an understanding of wellbeing problems and how they manifest within the school to decide on health targets.

PROBLEM-SOLVING Develop ideas of how to change the wellbeing problems and decide on the most important.

All the different opinions in the school community are represented during decision-making.

All RAG members build good relationships to support shared decision-making.

The group feel informed about wellbeing in their school so can make decisions.

Action group members feel empowered, and they have been given the opportunity to participate in shared decision-making throughout co-production.

Increase co-production student's attachment to teachers and school.

School Wellbeing Intervention Theory/ Action Plan

ADOPTION School Decision-Makers are presented with plans and incorporate into School Planning.

IMPLEMENTATION School implement plan as whole or the parts possible.

Increase students' notions of school safety, attachment, feeling supported and/or their self-regard.

EVALUATION Positive changes in wellbeing outcomes

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4.4.2.4 Intervention Forms

The following section presents the data on intervention forms found in the systematic review. Table 5 charts the RAG forms/activities found in each intervention for each of the functions in turn. What follows is a written summary of the main findings in terms of forms.

As already discussed, the only structure used within system-level capacity-building co-production was the development of RAGs. There was a consensus about the importance of a committed SMT and to have at least one member of this school decision-making body on the RAG, but no other specific activities were detailed. RAGs were made up of stakeholders from schools and the wider community including students, parents, Governors, teaching and non-teaching staff, senior management, school nurses, and police. Numbers of students involved ranged from one (Bell 2014; Bell et al. 2017) to a recommendation of six minimum (Bonell et al. 2015; Fletcher et al. 2015), but actual numbers were often omitted.

Recruitment took multiple forms. A few intervention teams allowed schools to decide how to recruit members (Poulin and Nicholson 2005; Bonell et al. 2010a; Bonell et al. 2010b; Davison et al. 2011; Hawe et al. 2015). Whereas others used election or self-nomination (Bond et al. 2001b; Glover et al. 2002; Mino 2003), a combination of staff and student nomination (Bonell et al. 2015), or headteacher selection (Bell 2014; Bell et al. 2017). Group development tasks were only discussed in two interventions which included the development of roles, group norms, goals, and tasks (Bond et al. 2001b; Glover et al. 2002; Bell 2014; Bell et al. 2017).

	Gatehouse Project	SCIDUA	Healthy School Ethos	CORE	SEL Cycle	INCLUSIVE	Brownsville
Structure	6-8 reps from: leadership team; Student support; Sub-school coordinators; Professional development coordinator; Director of studies/ curriculum; teachers; parents; students; community workers	Students, teachers, counsellor and an Addiction Services staff. Some involved police, parents, & community groups & local government.	Senior leadership staff; Teachers (a Head of Year; those responsibility for professional development, pupil support, and curriculum); Support staff; Students; Parents; and a Governor.		Eight teachers, a parent, a student, and a school administrator.	Min of six students, and staff including members of SMT and pastoral and support staff each. Specialist health staff were optional.	Students, parents, teachers, and community officers
Recruitment	Either students elected or self-nominated.	Schools decide how students recruited.	School to decide how students were recruited.	School decides how students were recruited.	Headteacher selection.	Mix of staff and student-self nominated.	Students/teachers -self-selected Parents – letter. Officer – Captain selected.
Group Development	Elect roles & organise meeting schedule. Develop goals and tasks.				Team building & developing group norms.		None specified.
Problem-Setting	School climate survey with year 8 students. Assess current policies, programmes and practices. RAG members ranked needs.	Group discussion.	Needs survey results prioritised.	School climate & health survey. PhotoVoice with students. Mapping of existing activities & initiatives. Priority setting exercise.	Social-Emotional Skills and School Climate surveys for staff and students. Results ranked by teachers. Student focus groups supported modelling of	Needs survey Year 8. Audit of practices and policies. Prioritised through discussion & using routine	School safety assessment - student survey and mapping hotspots. Group interviews with students, teachers, parents, and police

					Problem-In-Context	data.	officers.
Problem-Solving	RAG discuss but consultation with whole school. • Teams use wellbeing theory, research & practice.	Group discussion.	Group discussion.		Group brainstormed solutions & discussed until consensus reached. Researcher fed in school psychology practice & research.	Group discussion.	Group discussion.
Adoption					Staff agreed resources and RAG checked logic model.		
Implementation			£4000 core funding with £5000 responsive available through a grant application.		Principal gave support of roughly $20,000 in curriculum, materials, and training.	£4000 for administration costs, staff cover and activities.	$120,000 grant for the school to develop and implement safety programs.
Evaluation	Outcomes of smoking, drinking and mental health.	Evaluated outcomes of substance misuse (tobacco, alcohol, LSD, cannabis, amphetamines use) and resultant behaviour i.e. driving whilst drunk.	Intermediate effects on relationships, social support, self-regard, security, engagement in school, and substance use intention.	Evaluated intermediate outcomes of school engagement, attachment, and health outcomes of bullying., depression, substance use, sexual activity.	Process evaluation measured acceptability of RAGs and social validity of intervention plans.	Primary, secondary & intermediate outcomes. Primary were bullying victimisation, & perpetration of violence & aggression. Process evaluation measured acceptability.	

Table 5 Functions and Forms of System-Level Capacity-building Interventions

Problem-setting activities were utilised to understand the health and wellbeing issues in the school context and prioritise them. The resources of the needs assessments were used in all studies except SCIDUA (Poulin and Nicholson 2005) which identified needs through group discussions only. Prioritising needs was achieved through the survey (Bonell et al. 2010a; Bonell et al. 2010b), through ranking activities (Bond et al. 2001b; Glover et al. 2002; Davison et al. 2011; Bell 2014; Hawe et al. 2015; Bell et al. 2017), or discussion (Mino 2003; Poulin and Nicholson 2005; Bonell et al. 2010a; Bonell et al. 2010b; Bonell et al. 2015; Fletcher et al. 2015). Problem-solving activities were conducted to develop solution strategies for the identified school priorities and produce these into realistic health activities which could be implemented within contexts. However, this was the opaquest function as studies simply stated this was achieved through RAG discussions, structured through theory, practice and research in two studies (Bond et al. 2001b; Glover et al. 2002; Bell 2014; Bell et al. 2017).

Adoption processes not described as RAGs, including facilitators, remained in six studies (Bond et al. 2001b; Glover et al. 2002; Mino 2003; Poulin and Nicholson 2005; Bonell et al. 2010a; Bonell et al. 2010b; Davison et al. 2011; Bonell et al. 2015; Fletcher et al. 2015; Hawe et al. 2015) to support seamless implementation of health activities. Implementation was supported through funding granted: a priori (Mino 2003; Bonell et al. 2015; Fletcher et al. 2015), a combination of a priori and responsively (Bonell et al. 2010a; Bonell et al. 2010b), and post-intervention project (Bell 2014; Bell et al. 2017). Activity implementation was not assessed in any study though. Evaluation studies for population health outcomes were found for five studies collecting primary, secondary, and intermediate outcomes (Bond et al. 2001b; Glover et al. 2002; Poulin and Nicholson 2005; Davison et al. 2011; Bonell et al. 2015; Fletcher et al. 2015; Hawe et al. 2015). Two studies also had explicit process outcomes in terms of RAG acceptability (Bonell et al. 2015; Fletcher et al. 2015) and acceptability and social validity (Bell 2014; Bell et al. 2017), respectively.

4.5   Operationalising Resources, Functions and Forms through Stakeholder Involvement and a Pilot Project

Whilst the antecedent section outlined the functions and forms from the systematic review, enacting and assessing enactment of these properties in phase 2 needed further exploration. This was achieved through the stakeholder involvement session and the pilot study explained

above. Table 6 presents the functions, the descriptors of fidelity developed to assess whether the functions are met during implementation, and the multiple potential forms, with those preferred indicated in bold. Note an intervention manual was developed (Appendix F), and the generation of school-level data were captured through an established school survey run by the SHRN in Wales.

The issues raised from ALPHA were as follows. Schools vary on their size, geographical location, and the student demographics so these can be used as sampling criteria. Teacher RAG recruitment should be dependent on school size as within smaller schools headteachers would know staff well enough to nominate key members, whereas in larger school staff may need to self-select. Students nominating themselves would be preferable with no consensus on staff nominations being reached. Efforts should be made to repeatedly inform and remind students of the interventions through assembly time, form time, emails, and posters in an attempt to increase student self-nomination. Icebreakers are necessary when developing groups, but just as important is setting group rules. To understand school wellbeing the SHRN survey data could be accompanied by another student method (elaborated below). A diamond ranking was suggested to prioritise school health issues during problem-setting. Having examples to support solution ideas for problem-solving is necessary as this is difficult to do. The final RAG activity to action plan through a blank template was also accepted.

The pilot study of participatory methods with Year 8 students showed that photography was the most suitable method to utilise for co-production. This was because photography was found to be highly acceptable, even with those students not assigned to the method. This aligned to previous photography research with young people where researchers obtained more cameras during a study due to its popularity (Darbyshire et al. 2005). A further advantage found was students and the researcher felt individuals could produce a full understanding of wellbeing. Again, research has previously indicated photographs as a great tool to encourage children to talk about their experiences of contexts (Morrow 2001). Students also thought that method issues were easily surmounted by ensuring the researcher negotiated method parameters before enactment, e.g. the length of time students had cameras and whether to use researcher strategies to support students to elicit their understandings of wellbeing.

Table 6: Function and Form Matrix

Functions	Descriptors of fidelity	Forms
Structure	1. Recruit two secondary schools to develop RAGs	**School sampling by Free School Meal (FSM) entitlement, different geographical locations, and population.** **Send information through SHRN network.** **Ensure Senior Management Teams are on-board.**
Recruitment	2. Recruit a minimum of 10 students of differing year groups and genders.	**Assemblies delivered to offer all students the chance to take part.** **Students nominated themselves through nomination box.** Repeatedly inform students of project through assemblies, form time, e-mails. Staff nominated if necessary. Students nominate each other.
	3. Recruit a minimum of 3 school staff.	**Students nominate staff.** Other forms maybe dependent on school size but need one member of SMT. Large school – staff self-nominate; Small school – Headteacher nominate.
	4. Recruit a minimum of one community member	**School staff approach and nominate external members.**
Group Development	5. Run Group Development Tasks	**Run introduction session for those potentially wanting to be involved.** **First session ice breaker/fun activity.** Other session could have icebreakers to start. Setting Rules in group with researcher ensuring all areas are covered.
Problem-Setting	6. Access school-level health data to understand wellbeing.	**Research agreement signed by SMT.** **Access tailored school reports from SHRN.**
	7. Involve RAGs in understanding and prioritising school health needs.	**Undertake photography with students to understand wellbeing from their perspective.** **Meeting 1: Present wellbeing theme cards with photography and survey data.** **Meeting 2: Verify top 5 wellbeing themes as scored from last meeting.**
Problem-Solving	8. Generate school priorities and solution actions.	**Meeting 2: Brainstorming Initial Stakeholder Solutions Activity.** **Between meetings: Researcher to scope research and practice examples for solutions.** **Meeting 3 – Action Planning Activity to decide actions, by who, when and how achieved.** **Meeting 4 – Action Plan Finalisation Activity to verify whole plan.**
Setting and Solving	9. Involve 50% of RAG in three or more meetings.	
Adoption	10. SMT commit to taking some actions forward.	**SMT read final plan before adoption meeting.** **Discuss the way forward and/or commit to some actions.**

4.6   Summary

This chapter focused on phase 1 of this mixed methods intervention development study. It built and articulated programme theory for co-production in schools with INDEX guidance (O'Cathain et al. 2019a), providing the key actions to structure the chapter. Actions were achieved through the conduct of a systematic review, work with ALPHA, and a pilot study with secondary school students, respectively. The strength in the system-level capacity-building co-production type evidence base provided the rationale for developing and refining it in this PhD. Located intervention study documentation articulated the necessary resources and downstream theoretical pathways well but could not fully explain the upstream pathways of how RAGs function, so these gaps were filled through co-production research and theory about health decision-making. Further, it was possible to synthesise interventions and bring together multiple forms which can be used to fulfil intervention functions. Intervention clarity was provided by finalising the chapter with a logic model (figure 1) and a Function and Form Matrix (Table 6). The next section of this thesis focuses on Phase 2 which assessed and refined the intervention through the conduct of a mixed methods process evaluation with two case study secondary schools where this co-production process was delivered. The subsequent methodological chapter commences Phase 2 by linking to the key actions from the intervention development guidance and justifying the research decisions made for the process evaluation.

5 Chapter 5: Phase 2 Methodology to Refine Co-production Theory

Chapter 4 articulated intervention theory for system-level capacity-building co-production in schools. This chapter presents the mixed methods process evaluation used to assess and refine this intervention theory in phase 2. Section 5.1 outlines the key intervention development actions utilised in this phase, the key uncertainties addressed, and orientates the study of process evaluation to the aim of intervention development. Section 5.2 outlines the process evaluation aim, objectives, the four evaluation domains of context, implementation, mechanisms of change, and social validity and their respective research questions. Section 5.3 focuses on defining the evaluation domains, discussing, and critiquing their prior use, before articulating how they will be operationalised in this thesis. Section 5.4 describes the mixed methods case study methodology used, the purposive sampling of schools, and the research settings and participants. Sections 5.5-5.7 respectively outline the five data collection methods, the Framework and statistical analyses conducted, and the validity strategies employed to ensure a robust inquiry. Section 5.8 presents the ethical issues considered, before section 5.9 orientates the reader to the empirical chapters.

5.1 Key Actions and Uncertainties used to focus the Process Evaluation

The conduct of a mixed methods process evaluation with two case study secondary schools where co-production was delivered addressed four key actions from the intervention development guidance (O'Cathain et al. 2019a) (see Table 2 which mapped guidance actions against study phases and methodologies). These were to 'undertake primary data collection, 'understand context', 'attend to future implementation', and 'design and refine the intervention'. A further key action addressed was to 'involve stakeholders' as ALPHA considered the process evaluation results before the refinement of the co-production theory.

The first key action to collect primary research is acknowledged in the guidance as necessary to address uncertainties from reviewing the evidence base and can give focus to a study (O'Cathain et al. 2019a). This links to four key uncertainties which were found in the systematic review regarding the lack of attention on complexity in prior process evaluations of school-based co-production, the omission of a clear understanding of problem-solving, the neglect of the theoretical upstream pathways, and a lack of knowledge about the utility of data production forms to understand school health. A reminder summary of these follows.

Diverse school sampling in studies allowed co-production assessment in varying baseline contexts (Bonell et al. 2010a), and feasibility variations in the delivery and receipt of co-production were described by stakeholders in process evaluations. However, a complex systems perspective was not used. Hence, interventions were not articulated and assessed in terms of functions and adaptable forms or in terms of the contextual changes or intransigence to accommodate interventions. Presumably because they were conducted prior to the increased understanding and use of this perspective.

Problem-solving forms were conducted to develop solution strategies for the identified school priorities and produce these into realistic health activities. Whilst multiple forms were found and described for the RAG functions of recruitment, group development, and problem-setting, there was a lack of detail about the problem-solving forms used. Data in six (85%) studies described the forms as group discussions, one included the brainstorming of ideas, and two structured discussions through data on theory, research, and practice. A focus on elaborating problem-solving forms will be considered during the process evaluation.

Upstream pathways were understood as the mechanisms of shared decision-making, conceived as the ability and conditions needed for RAGs to make decisions as a group. In previous co-production studies how RAGs enacted group decision-making was not comprehensively predicted or explained. Therefore the researcher drew on further co-production research (Clarke et al. 2019) and extrapolated the concept of action competence (Jensen et al. 2000) to the group setting, to more clearly articulate these decision-making mechanisms. These upstream pathways would benefit from being further explored and assessed in a real-world contexts so will form a focus of the process evaluation.

Multiple forms of data production about school health were found in studies inclusive of needs assessments/surveys, audits of policies and practices, mapping hotspots, and student photography with staff social network analyses. There was an omission of assessing their utility, except for the needs assessments. Consequently, this thesis assesses photography as a participant-initiated form of data production in conjunction with the needs survey. This commenced in the MSc pilot; however, limited student numbers and the separation of this from wider co-production functions provides a rationale for readdressing it.

To provide an in-depth understanding of these uncertainties and of the entire intervention, because parts need to be considered in terms of the whole (Moore et al. 2014), phase 2 took the form of a process evaluation. Process evaluations have been defined as *"a study which aims to understand the functioning of an intervention, by examining implementation, mechanisms of impact, and contextual factors"* (Moore et al. 2015, p. 8). However variability in the emphasis of domains is dependent on the phase the study is embedded into (Moore et al. 2014). They can support the understanding of complexity or, more specifically, *"what works, for whom, under what circumstances and why"* (Pawson and Tilley 1997 p. 85), which is essential to intervention replication. Process evaluation studies were originally conceived to be embedded within feasibility, effectiveness trials, and during post-evaluation scale-up to assist in clarifying how the intervention was applied or not (Moore et al. 2014). This assures against concluding a programme is ineffective when actually it was implemented incorrectly (Basch et al. 1985). However, Moore et al. (2014) recognised their application could be extended, which has been achieved through pragmatic, formative process evaluations of existent programmes that omit scientific development (Evans et al. 2015b).

This thesis endeavours to explicitly extend process evaluation application to an intervention development study of school-based co-production. Three parallels between intervention development guidance (O'Cathain et al. 2019a) and process evaluation guidance (Moore et al. 2014) were found. A concentration on understanding context, implementation, and mechanisms of action are subsumed into both. Additionally, both advocate collecting primary data through a mixed methods approach to assess feasibility in context and participant responses through acceptability and engagement. Lastly, each state key uncertainties should be identified to focus studies ensuring an overly ambitious breadth does not result in lack of depth of understanding. Key uncertainties have been addressed above, and the need to produce an in-depth understanding to address these led to the decision to focus this iteration of co-production only on the functions from capacity-building to adoption (outlined in orange in figure 2) rather than the whole intervention programme.

Figure 2: Initial Logic Model of the System-level Capacity-Building type of Co-production with Process Evaluation Focus delineated

RESOURCES	RAG FUNCTIONS	UPSTREAM MECHANISMS	OUTPUT	SCHOOL FUNCTIONS	DOWNSTREAM MECHANISMS	OUTCOME

External Facilitator; School Data_RAG group manual.

External facilitator and group resources supports the group to function throughout with Decision-Makers Commitment to Project.

RECRUITMENT Recruit a diverse group of school and community personnel, and students.

GROUP DEVELOPMENT Develop the group to be able to undertake the intervention.

PROBLEM-SETTING Develop an understanding of wellbeing problems and how they manifest within the school to decide on health targets.

PROBLEM-SOLVING Develop ideas of how to change the wellbeing problems and decide on the most important.

All the different opinions in the school community are represented during decision-making.

All RAG members build good relationships to support shared decision-making.

The group feel informed about wellbeing in their school so can make decisions.

Action group members feel empowered, and they have been given the opportunity to participate in shared decision-making throughout co-production.

Increase co-production student's attachment to teachers and school.

School Wellbeing Intervention Theory/ Action Plan

ADOPTION School Decision-Makers are presented with plans and incorporate into School Planning.

IMPLEMENTATION School implement plan as whole or the parts possible.

Increase students' notions of school safety, attachment, feeling supported and/or their self-regard.

EVALUATION Positive changes in wellbeing outcomes

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5.2 Process Evaluation: Aim, Objectives and Domains, and Research Questions

The process evaluation aim was to assess the system-level capacity-building intervention in a real-world context to allow the refinement of the theory. To achieve this, two objectives were assessed in terms of the co-production process, and the output of co-production. As shown in Table 7, the first objective illuminates, in practice, if and how implementation was achieved and how this was affected by context, along with if and how the mechanisms of change worked, including how participants' responses and context affected these. The second objective was assessed through the domain of social validity to understand if the school-specific wellbeing intervention plans developed were considered relevant and implementable by school stakeholders. Each process evaluation domain is aligned to research questions as shown in Table 7, and the domains are discussed fully in the next section.

Table 7: Linkage between objectives, process evaluation domains and research questions

Objective	Process Evaluation Domains		Research Questions
Process	Context	Implementation	1.Were the co-production functions implemented with fidelity and what is the nature of any adaptations? 2. How does school context affect implementation?
		Mechanisms of Change	3. Did the mechanisms of change work as hypothesised? 4. How were these affected by the resources and activities provided, participants' reasoning and responses, and contextual conditions?
Output		Social Validity	6. Can co-production support school stakeholders to produce valid and implementable wellbeing intervention plans?

5.3 Defining Process Evaluation Domains and Justifying Using Mixed Methods

Three of the domains were taken directly from MRC process evaluation guidance which were context, implementation, and mechanisms as shown in figure 3 (blue sections). As expressed above, these domains overlapped with intervention development guidance and addressed two further guidance key actions in terms of the need to 'understand context' and 'attend to future implementation'. These are used to demarcate a framework in which to assess the co-production intervention, with an addition of a fourth domain termed social validity. This was deemed necessary to substitute for evaluating the outcomes domain (see figure 3) as this iteration of co-production did not follow up the implementation of resultant health activities within plans and evaluate outcomes (see figure 2). Although these domains are separated for

explanatory purposes, as shown in the figure 3, they interact and feedback to influence each other. Each domain is considered in turn to define the domain, discuss and critique its prior use, and elaborate on how it was operationalised in this thesis.

Figure 3: MRC process guidance domains and the relationships between them.
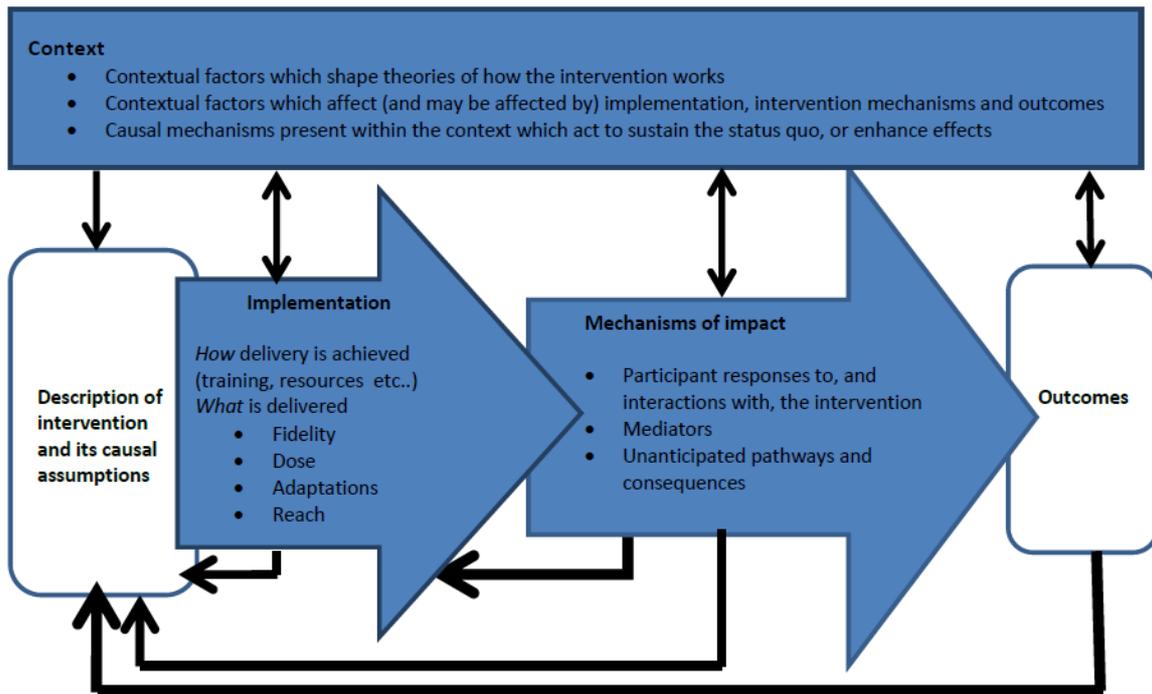
5.3.1 Context

As shown in figure 3, context is a cross cutting domain (Moore et al. 2014), and understanding how contextual factors within a system change the intervention, shape participants reactions to it, and whether they hinder or facilitate the production of effects is important to support intervention replication (Bonell et al. 2006). Section 3.2.2 outlined a multitude of definitions for context (Craig et al. 2018) and continued to highlight the primitive understanding of our conceptual thinking regarding capturing complexity in school-based intervention research and frameworks (Moore et al. 2019). Although prevalent work outlining the characteristics of CASs and their intervention/context interface were found in Hawe et al. (2009) and, for schools, with Kesharavarz et al. (2010). Informed by this literature, and due to the omission of a framework which encapsulates a comprehensive understanding of complexity, the subsequent section provides a summary of concepts which will frame context for the process evaluation.

School characteristics include that they are part of **nested systems** with internal **subsystems**, such as teaching faculties, **parallel systems** in terms of families, and **supra systems** such as Local and National Education Authorities. This nested system structure results in their functioning being characterised through both **autonomy and dependency**. Schools are made up of **diverse and dynamic** agents whose patterns of interaction shape how they function. There are frequent changes in agents such as teachers, headteachers, support staff, and students and their families. Additionally, schools are diverse in terms of size, resources, student populations, and location. **Activity settings** are the time and space bound patterns of interaction between agents which can include classes, staff meetings, and assemblies. **Social networks** can be shaped by subsystems, i.e. teachers within a faculty, or activity settings, i.e. students and teachers connected by sporting endeavours. **Information flow** between agents can be through formal information systems, i.e. e-mail, or informally through social networks. Whereas information flow between the school and the parallel or supra systems constitute **feedback loops,** i.e. inspections of schools conducted through School Inspectorates.

When responding to a system 'event' such as the introduction of an intervention, research should focus on how the **intervention couples** with the context including whether the system tries to self-organise to wash out the intervention or accepts and accommodates it. It is important to assess school's **baseline contexts**, their **formal rules**, the **communities** they are situated in and their **histories**, and how the **subsystem hierarchies** interact and respond to the intervention. Also, accommodation can be assessed through understanding how the system and agents within it **displace** activity sets, **rework or introduce new** subsystems or social networks, or **modify the use** of resources. While researchers need to be cognisant that change cannot always be easily understood due to its non-linear and unpredictable nature, it may be **partially accounted** for by both individual and system-level properties.

When operationalising the assessment of context, the primitive nature of conceptual frameworks and the in-depth data needed to understand complexity led the researcher to use a qualitative, idiographic inquiry. This allowed an exploration of the lived experience of those involved in the research, including the researcher. Further, additional steps were taken to support this through recruiting diverse schools, and diverse agents within the school to assess

co-production (discussed further in section 5.4). But first, the three other process evaluation domains, which context interlinks with, will be explored.

5.3.2   Implementation

Section 2.4 partially attributed the mixed effectiveness of whole school interventions to implementation issues, showcasing the need to assess implementation. MRC process evaluation guidance (Moore et al. 2014) conceives implementation as an examination of the extent to which the intended intervention was delivered and how this delivery was achieved. However, as outlined in section 3.2.2, the conception of interventions as dynamic, events in systems where forms are able to fluctuate to adapt to different conditions in each setting (Hawe et al. 2009) highlights the issue of intervention flexibility. How much flexibility should be in-built into interventions is debatable (Hawe et al. 2009; Moore et al. 2014). Interventions underpinned by empowerment, capacity-building, social action, and participatory research, such as the current one, have been considered exemplars of programmes that allow change to be guided by principles rather than activities controlled through minutiae details (Durlak 1998; Pérez et al. 2016). Hence there should be a focus on understanding whether adaptations improve fit to context whilst maintaining functionality or whether functionality is compromised which derails effects (Hawe et al. 2004).

Accommodating this into implementation assessment repositions fidelity to the functional rather than form level (Hawe et al. 2009). Intervention research has only recently considered functional fidelity as a prime understanding of implementation (Movsisyan et al. 2021), but examples show how multiple forms tailored to context can be used to meet standardised functions (Kemp 2016; Perez Jolles et al. 2019) and how implementation can be assessed through the fidelity-adaptation balance (Pérez et al. 2016). This involves assessing pre-specified descriptors of fidelity, considering adaptation in terms of the effect on intervention functioning, and identifying the elements essential to maintain intervention outputs and effects (ibid).

In the current study, pre-specified descriptors of fidelity (see Table 6) were developed based on the systematic review results, information from a stakeholder involvement session, and latent knowledge of the researcher. The application of a traffic light system was used to indicate whether descriptors were implemented with high fidelity (green), adapted but

maintained fidelity of function (amber), or implemented with low fidelity/adapted but fidelity of function was not maintained (red). This is in accordance with coding standardised forms to assess the extent they were delivered based on pre-specified ideas of what should be delivered (Moore et al. 2014) but is displaced to the functional level to incorporate the new conceptualisation of fidelity. Judgements on fidelity were made through an exploration of how functions were/were not achieved, if forms were adapted or tailored within settings, how and why the researcher or stakeholders considered these adaptations necessary, and how context can explain the need for adaptations. Therefore, implementation will be assessed through employing mixed methods to categorise functional fidelity and understand adaptations.

5.3.3 Mechanisms of Change

Understanding implementation should be accompanied by an understanding of the mechanisms and how they work to produce outcomes, or here; the desired output of a valid and implementable school-specific wellbeing plan. As discussed in Section 3.2.1, interventions have been theorised to be underpinned by generative causality (Pawson and Tilley 1997), where mechanisms exist with causal potential to produce or sustain phenomena that need triggering to make change and produce results. The intention of interventions is to provide sufficiently appropriate resources and activities for the participants and systems to trigger mechanisms that will produce the desired outcomes (ibid). Section 3.2.2 continued to outline how agents within the system have agency to reason and respond to resources, which can be shaped by structural determinants (Dalkin et al. 2015) and result in unintended consequences and iatrogenic effects (Bonell et al. 2014b). Hence the study of mechanisms involves predicting the causal mechanisms that will be triggered through the resources provided, then assessing whether these mechanisms were triggered and how they worked, and trying to understand what participant actions and contextual circumstances affected them (Wong et al. 2013; Van Belle et al. 2016).

Process evaluation guidance aligns with this, as shown in figure 2, as mechanisms are assessed through 'participant responses to, and interactions with, the intervention'; 'unanticipated pathways and consequences', as well as the assessment of 'mediators', where necessary, whilst attending to context. The guidance and example studies from the systematic review operationalise this through acceptability. However, they have done so

differently. For example, INCLUSIVE (Bonell et al. 2015; Fletcher et al. 2015) participants made quantitative judgements on acceptability through the usefulness of resources to trigger mechanisms, as well as whether the RAGs were developed in line with upstream pathways, such as they included students from a range of different backgrounds. Whereas the SEL cycle (Bell 2014; Bell et al. 2017) also focused quantitative acceptability judgments on the triggering of mechanisms, i.e. did stakeholders feel empowered. Further, the study focused on whether stakeholders' beliefs aligned with the process. In both cases an understanding of these quantitative judgements was made in conjunction with stakeholders' qualitative expressions of acceptability and their links to context, and researchers' observations of participant intervention interactions in settings. This also allowed the exploration of unintended consequences.

Following these examples, operationalising the assessment of mechanisms will encompass both quantitative judgements and qualitative data about participants' reasoning and responding to resources in context, their receipt of the intervention, and the assessment of upstream pathways to allow an understanding of expected and unexpected change. However, acceptability may not be an encompassing enough domain to attend to all of the issues. Also, assessing acceptability with secondary schools students has been criticised due to a lack of training or support for them to make critical judgements, particularly as students think any involvement in school decision-making is favorable to the normality of being omitted from these processes (Ozer et al. 2013). Extending process evaluation domains to incorporate 'social validity' has been deemed important to temper reliance on acceptability (Reed et al. 2020), which will be our last domain discussed below.

5.3.4 Social Validity

As the current thesis only followed up the intervention to adoption processes (see figure 2), the evaluation of outcomes in the process evaluation guidance (see figure 3) were substituted to assess the output of the emergent wellbeing plans. To achieve this an auxiliary domain of social validity was constructed using two key pieces of literature. First, within the systematic review, the SEL cycle project (Bell 2014; Bell et al. 2017) utilised the concept of social validity, a nomenclature adopted here. It defined this as the *"degree to which the SEL Cycle is congruent with cultural values and extent to which the emergent plan of the SEL Cycle represents cultural needs and values"* (Bell 2014, p. 47). Critiquing this, congruence with

cultural values is believed to be encompassed by acceptability, used in the former domain about mechanisms, especially as it links to co-production processes. Whilst the second part of the definition focuses on assessing the validity of the output of the emergent plans, which is how it will be operationalised in this study.

Secondly, the intervention development guidance used in this study was produced, in part, through in-depth interviews with 15 prior intervention developers and six stakeholders such as funders and members of the public (Turner et al. 2019). This found successful intervention development was defined through the production of interventions that were relevant to the contexts in which they were developed for, acceptable to the recipients, deliverers, and funders, and implementable in real world contexts. Here, the domain of acceptability does link to the output of the interventions rather than the process of co-production, but this is still subsumed within relevance of plans within this process evaluation.

Hence, when constructing the domain of 'social validity' for intervention development it explored the two subdomains of whether resultant intervention plans were relevant to the individuals and contexts in which they were created, and whether they were implementable in those contexts. It will be operationalised in an equivalent form to in the SEL project (Bell 2014; Bell et al. 2017), where members of the RAG are asked to rate both subdomains quantitively, but these judgments are explored through qualitative data to understand them. An addition will be the inclusion of SMT members in discussing the relevance and implementation of plans as ultimate school decision-makers. Cognisant this is a preliminary use of the construct, and it may have further value in continued iterations of co-production, its usability within this thesis is reflected on in the discussion (section 10.3.3).

In conclusion, a process evaluation study was set to refine the co-production theory devised in phase 1. It addresses the four INDEX guidance actions to 'undertake primary data collection, 'understand context', 'attend to future implementation', and 'design and refine the intervention'. It also attends to four key uncertainties highlighted in phase 1 which were to assess complexity, the function of problem-solving, the upstream theoretical pathways, and the use of photography to elicit understandings of wellbeing. Designating two objectives to assess the co-production process and output resulted in the accustomed domains of context, implementation, and mechanisms of change being accompanied by social validity. Domains were defined and critiqued, before deciding how to operationalise them in phase 2. A vital

consequence of deciding domain operationalisation was the need for a mixed methods study to quantify domains, whilst allowing a qualitative exploration to provide nuance to quantifications and an idiographic understanding of people's lived experiences of co-production. The next section explores the mixed methods case study methodology used.

5.4   Methodology: A Mixed Methods Case Study

5.4.1   Mixed Methods Case Study Approach

A realist epistemology is not prescriptive of the methodology used in empirical research (Bonell et al. 2013a; Marchal et al. 2013), however, a mixed methods approach is increasingly becoming a dominant way to combine knowledge in process evaluations (Moore et al. 2014) as outdated paradigmatic contentions are abandoned. The advancement of mixed methods has generated new understandings of causality and generalisability, with causality focusing on casual processes or the events and actions that lead to outcomes within contexts, and analytical generalisability being the production of key knowledge that can be applied in other contexts (Yin 2015). Case study research permits the study of these through the understanding of processes and detecting patterns (causality) whilst developing contextual knowledge (analytical generalisability) (Erickson 2012). Therefore, Yin (2015) positions case study research as fertile for a mixed methods approach as both quantitative and qualitative methods are valuable to understand a case (Yazan 2015).

A case study methodology was productive on three other fronts. First, a case study suited the co-production field as there were inadequate theories (Eisenhardt 1989) prior to this iteration which attempted to bring clarity to an indistinct field. Secondly, wanting to understand the complexity of how the intervention interacted with contexts parallels the understanding of case study research to study phenomena *"within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident"* (Yin 2018, p. 49) Thirdly, an empirical inquiry allowed the exploration of the phenomena in terms of 'how' and 'why' questions, with the former being pertinent to this phase, as shown in Table 7.

Crowe et al. (2011) distinguish three epistemological approaches that can be used in case study research. The critical epistemological approach focuses the researcher on questioning their own or others' assumptions, which can overly focus on considering power relationships and privileges the researchers' thoughts on judging whose accounts count. This was

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considered not useful for this project as it does not align with a realist philosophy where multiple accounts should be used to understand reality. The interpretive approach focuses on elaborating individual and shared meanings which are important for this study, but it has been highlighted this can neglect contextual issues which are central to the complex systems perspective taken here. Whereas the latter approach, associated with a Yinian case study methodology, orientates towards focusing on generalisability, and the testing and refining of theory which are important for the realist epistemology, and for the aims of phase 2 of this thesis.

Taking this approach (Yin 2018), the number of cases and units of analysis were considered. The multiple-case, embedded design allowed co-production to be examined through two divergent cases with multiple subunits in terms of different stakeholders. This affords the consideration of similarities and differences between cases and stakeholders, supporting both a theoretical replication in terms of the prediction that contrasting cases will vary, in addition to a literal replication when similar results are found. Recruiting cases to provide contextual diversity was based on key case demographics (Fletcher et al. 2016) allowing an understanding of each case in turn, and then, a cross comparison of the two cases. Within cases, the views of multiple stakeholders occupying different hierarchical roles within the school system and from outside it, in the form of students, staff, SMT members, and the researcher were collected.

Further, similarities and differences were operationalised at the method and analysis levels. The multiplicity of methods through a fieldwork journal and researcher observations, RAG surveys and individual interviews, and SMT focus groups emphasised where stakeholders' views about co-production varied or changed throughout the intervention. Framework analysis (Ritchie et al. 2003) was utilised to separate different cases and different stakeholders' views to show how themes varied. These factors were also productive to ameliorate the issues with the indirect access to an objective, true reality (Sayer 2000; Bonell et al. 2016), by layering knowledge. They are expounded in detail in following sections which focus on school sampling, school profiles, participants involved, data collection methods, ethical considerations, analysis, and the validity strategies used.

5.4.2 School Sampling

A school is a case due to it being a bounded entity with blurry definitions (Yin 2018) with its supra and parallel systems meaning it is dependent but autonomous (Keshavarz et al. 2010). As no current studies incorporating co-production were being conducted in Wales, the researcher rolled out the interventions and process evaluation concurrently. Separation of the co-production processes from the process evaluation are shown in figure 4. The study was set in Wales which is split into four regional Educational Consortium which are further divided into Local Authorities. The case study sampling commenced at the consortia level with the Central South Consortia deemed suitable as all Local Authorities were within travelling distance of the researchers base to allow continual, longitudinal research to be

Figure 4: Separating Co-production Functions from Process Evaluation Data Collection

Co-production Approach

Function 1 & 2: Capacity-building and structure development

Function 5: Accessing SHRN report

Function 5: Understanding Wellbeing in context Meeting

Function 6: Solution Development Meeting

Function 7: Adoption Meeting with SMT

Function 5: Problem prioritisation Meeting

Function 6: Action Plan Finalisation Meeting

Function 5: Problem-Solving: Photography

Function 4: Group Development

Function 3: RAG recruitment

| Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul |

Research Diary

Individual Observations

Group Observations

Group Observations

RAG Survey and Group Observation

SMT Focus Group

Group Observations

Group Observations

RAG member (Student and Staff Interviews)

Process Evaluation Data Collection

conducted. It is a Joint Education Service that covers five local authorities in South Wales (Bridgend, Cardiff, Caerphilly, Rhondda Cynon Taf and Merthyr Tydfil). Table 8 shows the national, consortia and local authority secondary school profiles.

Table 8: Profiles of Secondary Schools in Wales

	Population of Secondary school students n (%)	Maintained Secondary Schools	Average number of students in schools*
Wales (national figures)	174,812 (100)	195	896
Central South (Consortia figures)	57,250 (32.7)	59	970
Bridgend	9,044 (5.2)	9	1004
Caerphilly	10,169 (6.8)	12	847
Cardiff	20,116 (11.5)	18	1118
Merthyr Tydfil	2,833 (1.6)	4	708
Rhondda Cynon Taf	15,088 (8.7)	16	943

Data provided through https://gov.wales/sites/default/files/statistics-and-research/2018-12/180725-school-census-results-2018-en.pdf
*Calculated through other statistics.

Diverse cases were sought through purposive sampling at the school-level based on their variations in FSM entitlement, school size, and geographical location. School recruitment was undertaken with the support of the SHRN as the co-ordinator had existing relationships with schools, and because the co-production process dictated the use of a student population survey which SHRN could provide with agreement from the school's Headteacher.

53 of the Consortia schools had completed SHRN surveys so were considered for recruitment. The remaining English medium Consortia schools were split into high and low FSM, dependent on if they were above or below the 16% 2018 Welsh average figure for secondary schools (Welsh Government 2018). When examining the split, it was decided one school would be recruited from the low FSM schools with large populations (above the 970-student Consortia average; see Table 8) from the Southern Counties (capital city and surrounding areas), while the other would be a high FSM, small population school from the Northern Counties (known locally as the Valleys).

14 schools were approached (six low FSM and eight high FSM) via an e-mail sent from the SHRN co-ordinator. The e-mail included a document (Appendix G) summarising the research, the benefits to the schools, the commitment expected, how data collected would be used, and the researcher contact details. Schools were advised that as part of the intervention they should permit the researcher and RAGs access to their 2017-18 SHRN Student Health and Wellbeing Report. Overall, a high level of response was received with eight (57%) schools responding positively but school response varied by stratum. Five (83%) of the low FSM, high population schools located in urban areas responded within 5 days. Whereas in the high FSM, low population schools located in semi-rural areas, a reminder e-mail was sent eight days after due to non-response; subsequently, three (37.5%) schools responded. Recruitment was on a first response basis, with the caveat schools met with the researcher to understand the extensive, longitudinal commitment needed. This was upheld, and the first two schools met with accepted the opportunity to be involved.

To protect school identity the pseudonyms Rowland High (RH) and Partridge Comprehensive (PC) are used. The profiles of the two case schools in respect to the sampling criteria are presented in Table 9. Both schools are English-medium, mixed gender secondary schools with sixth forms. Further discussion about school recruitment and characteristics are retained for the succeeding chapter as they link to findings about implementation and context.

Table 9: Sampling Criteria Differences

	RH	PC	Welsh Average
School Population (n)	1,307	945	970
FSM Entitlement (%)	7	20	16
Geographical Location	Urban	Semi-rural	N/A

Data provided by MyLocalSchool (Welsh Government2018 https://mylocalschool.gov.wales/); School Census results 2018 (Welsh Government 2018 https://gov.wales/sites/default/files/statistics-and-research/2018-12/180725-school-census-results-2018-en.pdf)

5.4.3 Participants

Again, elaborated discussions about recruitment of participants will be in the succeeding chapter. However, Table 10 shows the profile of the 38 participants involved in the process evaluation data collection for each school. This is inclusive of SMT members where most

featured in the assessment of the co-production intervention's resultant wellbeing plans but not in the RAGs.

Table 10: Participants in the Process Evaluation

		RH		PC	
Participants		**Male**	**Female**	**Male**	**Female**
Students	Year 7	2	0	0	2
	Year 8	1	1	1	1
	Year 9	1	1	1	1
	Year 10	1	1	2	0
	Year 11	0	0	0	0
	Year 12	0	1	1	1
	Year 13	0	1	0	2
Adults	School Staff	1	1	1	0
	External RAG Member	1	0	0	1
	Senior Management Team	3	2	3	3
	OVERALL TOTAL	**10**	**8**	**9**	**11**

5.5   Methods and Data Collection

In order to conduct an in-depth case study in the real world, multiple sources of evidence perform the function of *"converging lines of inquiry"* (Yin 2018, p. 186) to produce a bricolage of knowledge. Five methods were used to collect data for this process evaluation as shown in figure 4 and Table 11. Concurrent with intervention rollout, a research diary (n=45 entries), individual observations of students undertaking photography (n=21), and group observations of meetings (n=8) were conducted. Post-intervention, a RAG survey (n=26) and interviews (n=26), and SMT focus groups (n=2) were undertaken. Table 11 shows how the data feeds into the process evaluation domains, and that completion of process evaluation data sources was consistently high (67–100%). For RAG members, percentages are given as the total number of individuals recruited designated as those who returned a consent form, irrespective of whether they attended any intervention activities. For SMTs, percentages are given as the total number of SMT members within the school. The staff and student RAG surveys took the same format but are separated to demonstrate completion rates by different stakeholders. Each method is discussed in turn below.

Table 11: Data Collected for the Process Evaluation

Data Source	Process Evaluation Domains	Informant	RH N (%)	PC N (%)
Research Diary	C; I; M; S.	Researcher	32-pages with 45-day entries.	
Individual Observation Sheets	C; I; M.	Researcher	10 (100)	11[a] (100)
Group Observation Sheets	C; I; M.	Researcher	4 (100)	4 (100)
Student RAG member Survey	M; S.	Student RAG member	7 (70)	11[a] (100)
Staff RAG Member Survey	M; S.	Staff RAG member	4 (67)	4 (100)
Student Interviews Post Co-production	C; I; M; S.	Student RAG member	7 (70)	11[a] (100)
RAG Staff Interviews Post Co-production	C; I; M; S.	Staff RAG member	4[b] (67)	4[b] (100)
Senior Management Team Focus Group	C; S.	SMT	4[b] (80)	6[b] (86%)

[a] Two students asked to conduct data collection as a pair so actual number of students is one higher.
[b] Some staff were members of both the RAG and the SMT so featured in both data collection methods.
Key: C – Context; I – Implementation; M – Mechanisms of Change; S Social Validity

5.5.1   Research Diary

An electronic research diary with 45-day entries was kept from school recruitment to SMT focus groups. The diary reflected on all four domains inclusive of intervention knowledge and data collection issues. The diary met the defining characteristics of a regular, personal, contemporaneous research record (Alaszewski 2006). The researcher was the only entrant who journaled each time there was contact with or attendance in schools. The entries were made as close to the time of occurrence as possible, with 'jottings' created whilst in the field which were expanded on and transformed into formal fieldnotes the same day (Yin 2018). Recording what was considered relevant was shaped through the process evaluation domains (sections 5.3.1-5.3.4). Context was shaped through considering schools as CASs, and implementation formed the documenting of intervention adaptations, their purpose, and the perceived need for them. Mechanisms noted how participants responded to the intervention whilst social validity focused on how participants understood wellbeing plan relevance and future implementation.

Research diaries have been noted to afford the opportunity to document the unexpected and detours from what is anticipated, especially as these detours can be important findings (Altrichter and Holly 2005). Within intervention research this is salient because unintended

consequences are possible as interventions are unpredictable and do not interact uniformly with context. Therefore, diary entries moved between descriptive and inferential field notes (Frey 2018) to capture events in detail whilst making some judgments on why or what influenced this and whether this was expected or not. Also, entries were distinguished from research observations (considered below) because the latter were focused on time and space bound intervention activities such as RAG meetings, whereas the former generated data outside of these formalised encounters.

5.5.2 Individual and Group Observations

Twenty-one semi-structured individual observations were conducted of student photography elicitation interviews (Rowland = 10; Partridge 11) to assess it as a participant-initiated data production form. Additionally, eight semi-structured group observations were undertaken of RAG meetings (four per school). These two observation types are combined as their rationales and procedures are similar. Capturing the researcher perspective was pertinent as a realist philosophy supports the accumulation of multiple perspectives (Maxwell 2004), and it addressed the limited, affirmative data often found when participants assess methods (Sampson 2004). Sessions were recorded because the researchers dual role of co-production facilitator and evaluation researcher meant an 'observer as participant' role was taken and attention was divided between tasks (Junker 2004). Participants were aware the researcher would make preliminary notes and listen to recordings (within 48 hours) to develop comprehensive observations.

Observations captured data on the domains of context, implementation, and mechanisms. The semi-structured observation scales (Appendix H & I) allowed the researcher to concentrate the observation on the three domains (Merriam 2009), whilst permitting emergent data to be recorded (O'Leary 2004). The assessment of Context and Mechanisms was done through notes structured by the concepts outlined when conceptualising schools as CASs (section 5.4.1), and through students' reasoning and responses to mechanisms (section 5.4.3), respectively. These gave a nuanced understanding of the lived experience of photography to understand school wellbeing, and the group meetings. However, as the researcher was not present when students took photographs these focused on elicitation interviews except when the researchers unintentionally saw students or they returned to ask questions. Therefore, observation notes included any issues students encountered and their positive or negative

remarks about photography to capture these data close to the experience of using photography.

Implementation of photography was assessed through a mixture of pre-determined criteria and notes about students' levels of task understanding and support needed, how engaged they were, and task completion. The individual observation criteria were operationalised as follows: understanding, as whether students gave examples of wellbeing; support, as the need for strategies to help students elicit wellbeing; engagement, through the effort students took to produce photo datasets, including how prepared they were to discuss them; and completion, through the fullness of datasets; noting those who added further themes or omitted photos (and why). Group observations were structured around the same criteria and operationalised as: understanding, as whether the researcher had to repeat instructions or redirect groups back to task aims; support, as whether the researcher needed to facilitate part or all tasks; engagement, as whether the group remained on task; and completion, as whether the group completed all aims. Being conducted as part of a PhD, inter-rater reliability was not assessed.

5.5.3 Post Co-production Surveys

Twenty-six RAG members filled out short self-completion surveys about their co-production experience at the end of the last RAG meeting in each school. Inclusive of 18 students (Rowland = 7; Partridge = 11) and eight staff (four per school) the survey emulated and expanded the one used in the INCLUSIVE study (Bonell et al. 2015; Fletcher et al. 2015) Appendix J). It emulated the assessment of mechanisms by asking participants to make quantitative judgements on Likert Scales about the usefulness of resources to trigger mechanisms, and whether RAGs were in line with the pre-set upstream mechanisms (see section 5.4.3). It was expanded in two ways. First, the assessment of social validity on the relevance of wellbeing plans and also their potential to be implemented using a Likert Scale were added. Secondly, participants' assessments were extended through open-ended questions linked to the RAG or co-production processes.

Surveys were used to collect standardised data which could be compared between stakeholders and cases (Denscombe 2014) allowing the assessment of similarities and differences, outlined as important in the preceding section. Also, they afforded participants a

quick, convenient way, in the absence of the researcher, to make judgements about the co-production process (Bryman 2016), particularly pertinent because the researcher's dual role meant the amelioration of Hawthorne effects were paramount. Bryman (2016) has also outlined several survey limitations concerning the lack of opportunity to probe and expand on answers as well as a risk of missing data and the generation of short, curt answers to open-ended questions. Due to these limitations' interviews were used in conjunction with surveys with the researcher re-visiting participants' survey answers to provide clarity where needed, or more nuanced data where it was lacking.

5.5.4 Interviews

Twenty-six individual interviews were undertaken post co-production with 18 students (Rowland = 7; Partridge = 11) and eight RAG staff (four per school) (see Table 11). Interviews lasted between 34 and 65 minutes and were audio recorded for accuracy. The interviews captured data about all evaluation domains. Schedules were the same for different stakeholders with two divergences: staff were asked about the influence of supra systems such as the LA on the interventions and how other staff were recruited; students were asked about their prior experiences with school groups or involvement structures.

Semi-structured interviews sought to discuss known topics whilst allowing participants to raise their own salient points (Gubrium 2012; Denscombe 2014) and to capture comparable data (Bernard 2011) so that similarities and differences between perspectives could be assessed. Two salient issues were the time between enacting co-production functions and the interviews, and that participants can be overly positive when assessing methods (Sampson 2004) and co-production interventions (Ozer et al. 2013). For the study, the assessment of social validity ameliorates some of this, however, further strategies within interviews were taken to elicit an accurate and critical recall of co-production.

The first strategy was to employ a semi-structured interview schedule (Appendix L) which had several open-ended questions concerning participants' experiences and included a number of further probes to support in-depth understanding (Padgett 2012). Secondly, the researcher outrightly informed the participants that the co-production process was not developed by her but was emulating prior projects, to allow participants to detach the researcher from the process. Thirdly, the researcher asked outrightly whether the participants

had any concerns or criticisms about the process. Lastly, pertinent documents/images from the co-production intervention were used during interviews. To assess mechanisms each of the four RAG meetings in both schools were structured through the Intervention Manual's activity sheets which gave participants instructions and had images to illustrate what instructions meant (see Appendix F). For example, in meeting 1 the image was a diamond ranking shape. To assess social validity, the researcher used intervention plans and went through them with individuals before asking for their assessments.

5.5.5 Focus Groups

Two focus groups with 10 SMT members (Rowland =4; Partridge = 6) were conducted post-intervention to assess the social validity of wellbeing plans and whether they could commit to actions. There was crossover between RAG and SMT membership with two members in Partridge on both and one member in Rowland. Focus groups were audio recorded and lasted between 26 and 36 minutes.

Focus groups were chosen because the group setting provided insight into the SMT's decision-making processes through dynamic and interactive discussions (Sharon et al. 1996). Also, pre-existing groups with individuals accustomed to their discussions and set-up, and each other, can allow the production of naturally occurring data (Kitzinger 1994). However, an SMT is a hierarchical structure that distributes social power and status differently between members (Stewart et al. 2007), with higher-status individuals often dominating, leading to an overrepresentation of their ideas as others are reluctant to disagree with them (Reed and Payton 1997). These power dynamics were particularly salient as a standard management meeting was used because SMTs were too busy to meet solely for research purposes. Conscious of power dynamics and because the researcher was unfamiliar to some SMT members, strategies were used to structure them and allow all members to contribute. First, a semi-structured schedule and the wellbeing plans were used. Plans were sent to SMTs two weeks prior for them to read and consider the recommended actions, and were also available during focus groups. The second strategy was to prompt lower-status members for their opinions, specifically when the researcher thought sessions were dominated by one member.

5.6   Data Analysis

To synthesise and order the qualitative data, the Framework approach was utilised which manages data through the use of matrixes split by cases and themes (Ritchie et al. 2003). As a central component is themes, thematic analysis (Braun and Clarke 2006) is subsumed into Framework with thematic analysis pioneers (Braun et al. 2018; Braun and Clarke 2019) acknowledging Framework analysis within their typology as 'codebook' thematic analysis. They position 'codebook' between the detached 'reliability coding' of post-positivist thematic analysis and their own articulation of 'reflexive' thematic analysis which emphasises situated realities and uses researcher subjectivity and their philosophical assumptions as a resource for analysis. As 'codebook' shares the structured form of 'reliability coding' whilst having a 'reflexive' philosophy that underpins contextual knowledge it is cognisant with a realist approach. The distinguishing feature of codebook centres on the driving of analysis through both a priori deductive coding and inductive coding based on reflective engagement with the dataset (Parkinson et al. 2016; Braun and Clarke 2019).

In practice, it is difficult to pinpoint the commencement of analysis as diaries, in particular, allow the on-going, iterative production of knowledge throughout data collection (Altrichter and Holly 2005). However, the formalised analytical procedures commenced with the researcher concurrently reading the interview and focus group transcripts whilst listening back to audio to scrutinise for errors to correct. This was necessary as transcription was outsourced due to the volume, and it also provided the researcher an initial opportunity to make notes about the dataset. Subsequently, all qualitative data inclusive of the interview and focus group transcripts, the observations, the research diary, and the open-ended response to survey questions were uploaded to NVivo 12. Data were deconstructed into cases and the a priori themes, with cases being individual participants (except for SMT as their data were integrated within focus group transcripts), and the a priori themes being the domains of context, implementation, mechanisms, and social validity. Some data were coded in multiple themes due to the linkages between domains.

Inductive coding was used within themes to generate subthemes, and often subthemes of subthemes, giving a grandparent, parent, child theme structure to data. A re-reading of all themes and the production of an overview memo was constructed with the reformulating,

collapsing and refinement of themes constantly taking place throughout the process. This was shared with supervisors with advice taken to further split mechanisms into how they functioned and into participants' intervention receipt. Subsequently, subthemes were summarised into matrixes that were separated for case study schools and separated within by individuals (or SMT data). This allowed the assessment of the similarities and differences of themes between school cases, but also within school cases, and between individuals in different case study schools (i.e. how did students' views align or disagree in the two schools).

Excel was used for quantitative data analysis deemed sufficient for the descriptive statistics needed. Implementation and mechanism data were from the observations and surveys, respectively. Analysis included means, data ranges and standard deviations. Attendance data for meetings were also tabulated and plotted on a graph as an important function within implementation. Lastly, a memo with domains was produced combining the quantitative results with the qualitative summaries reporting where the latter explained the former, and where different domains explained each other. This structured the subsequent three findings' chapters focused on implementation and context, mechanisms, and social validity.

5.7   Research Validity

The process evaluation also took a realist approach to validity centred on utilising the categories outlined by Maxwell (2002), these are descriptive validity, interpretive validity, theoretical validity, generalisability, and evaluation validity. This has an appreciation for quantitative understandings of validity whilst focusing on how qualitative researchers can ensure validity when they believe there is only one reality; affording a combination of paradigms, where there has previously been paradigmatic separatism in terms of validity. For example, Yin's (2018) positivist criteria against Lincoln and Guba's (1985) constructivist criteria. Hence, Maxwell's typology moves away from the positivist assumption that the procedures used are the tools of validity, shifting to the conception that validity lies inherently within the account produced. However, unlike a constructivist viewpoint, the aim of validity is still to understand causality as realists accept the notion of one single reality.

Therefore, Maxwell (2004) contends the in-depth study of a phenomena and causality is based on an understanding of accounts of the multiple people who experienced it. Hence for

this co-production intervention, multiple perspectives were obtained from the researcher, the students, adult RAG members, and SMT members. This is because the stratified nature of reality predisposed by realism, means the researcher needs to accept they have indirect access to what occurred through the research data collected in the empirical domain of reality (Bonell et al. 2016). Consequently, it is not possible to collect an absolute truth of intransitive knowledge, but instead a representation of the truth is generated through fallible accounts of transitive knowledge (Sayer 2000; Maxwell 2002). For the co-production intervention getting closer to the truth can be captured through multiple iterative and accumulative empirical research to refine co-production theory (Kazi 2003; Marchal et al. 2013). Whilst within this iteration, steps were taken to ensure the rigour of the research within a realist paradigm (see Table 12) through Maxwell's categories which were operationalised as follows. Ensuring the factual accuracy of accounts (descriptive validity); ensuring the meaning of participants is accurately captured (interpretive validity); capturing an understanding that pertains to explaining a phenomenon (theoretical validity); capturing findings to support the understanding within the context and potentially to similar contexts (generalisability); allowing an evaluation of accounts accuracy (evaluative validity). These categories can include strategies undertaken throughout the research process, and Table 12 shows the strategies used in this process evaluation.

Table 12: Validity categories and strategies employed within the Process Evaluation

Category	Validity Strategies
Descriptive Validity	1. Research Diary: Taking notes during fieldwork with fieldnotes formalised the same day to aid recall. 2. Individual and Group Observations: Taking notes during observations supplemented by relistening to recordings within 48 hours. 3. Surveys: Open ended responses within surveys allowed participants to use their own words to describe co-production. 4. Surveys: Examine survey responses to check for uncertainties that can be addressed in interviews. 5. Interviews: Used to explore participants survey responses to expand on or clarify information. 6. Interviews: Ensuring participants criticise co-production through detaching the researcher from the process and asking for their criticisms. 7. Interviews and Focus Groups: Participants' verbatim accounts through audio recording and transcription were used. 8. Focus Groups: Intervention documents used to aid recall, and power addressed through asking lower ranking members their accounts. 9. Analysis: Constantly compare data summaries with the verbatim transcripts or fieldwork observations and diary entries. 10. Developing respectful relationships with participants so they feel able to give an accurate account of co-production. 11. Questioning if there are omissions in data, paying particular attention to what participants may not be comfortable to say.
Interpretive Validity	12. Producing rich data through multiple methods and accounts of the intervention. 13. Interview and focus group participants generate narratives about co-production with researcher probing to elicit meaning. 14. Ensuring a mixture of perspectives are considered when understanding the intervention and they are treated equally. 15. Utilising researcher observations to note researcher influence or where meaning may not be accurate due to external factors. 16. Scrutinising written and analytical memos to check for researcher influence on analysis.
Theoretical validity	17. Developing an initial theory (Chapter 4) to test within the process evaluation. 18. Exploring the similarities and differences between participant accounts. 19. Scrutinising findings in terms of the wider literature found during the systematic review on co-production. 20. Critically analysing data to highlight gaps in understanding. 21. Analysing data to explore alternative perspectives or deviant cases. 22. Producing a refined theory through recommendations made through process evaluation findings. 23. Checking findings with ALPHA in a public involvement session.
Generalisability	24. Using similarities and differences between cases and stakeholders to understand case-specific findings and more generalisable ones. 25. Acknowledging an absolute generalisable truth about co-production is not possible but patterns and cognisance within contexts are. 26. Acknowledging how further iterations can fill generalisability gaps.
Evaluative validity	27. Acknowledging accounts can be fallible whilst not judging whose accounts count and whose do not by status or participant characteristics.

5.8   Ethical Considerations

To ensure the study complied procedurally with an ethical process, ethical approval was obtained from Cardiff University's School of Social Sciences Ethics Committee and the researcher obtained an Enhanced Disclosure and Barring Service Check. Further, the researcher completed Child Protection Training, and understood their obligations under the Cardiff University Safeguarding Policy. Lastly, the evaluation was directed by the three ethical considerations for researching children's experiences outlined by Hill (2005) which were expanded to adult participants. These were voluntary informed consent, anonymity and confidentiality, and preventing harm and distress.

5.8.1   Voluntary Informed Consent

School-based research increases student compliance often because they think it is an acquiescent activity they need to be a part of (Denscombe and Aubrook 1992; David et al. 2001). This highlights the importance of voluntary, informed consent being an on-going renegotiated process (Alderson 1995). To address this, the British Educational Research Association guidelines (2018) were followed. These made the researcher aware of the need to verify participants were not coerced by schools, that at each research encounter the participants were happy to continue, and individuals were informed of the ability to withdraw without penalty. These were outlined to participants both verbally in research encounters and through 'Participant Information Leaflets' (Appendix N). All documentation inclusive of the Participant Information Sheets, Consent Forms and the Student Support Sheets (Appendix O & P) were verified by ALPHA to ensure they were ethical (Morrow 2005).

For students to self-select to take part, the researcher offered the project to all through year group assemblies, or staff informed students in form time. The 15-minute assemblies gave a project overview, detailed the data collected, and the self-nomination process. At the end students could ask questions or speak to the researcher individually. For form times, staff explained projects, but students were given the researcher's details to contact them to ask further questions if necessary. Students were also directed to the Participant Information Sheet (Appendix N) placed alongside nomination boxes in specified locations. After nominations, personal and parental consent was obtained through sending documents home with students. For adults, all participants had study documentation at least two weeks before research encounters to consider their involvement and contact the researcher, if wanted.

5.8.2 Anonymity and Confidentiality

To ensure data were anonymised and confidential, all research encounters were recorded via encrypted and password protected Dictaphones. Audio recordings and photos were uploaded and removed from digital devices as soon as possible after research encounters. The University drive was used to securely store data and identifying data were removed from transcripts and this thesis. Future publications will be produced with identifying information removed, with supervisors reading and confirming settings/participants cannot be determined.

5.8.3 Preventing Harm and Distress

Four strategies were used to safeguard participants from potential harm or distress, particularly pertinent in attempting to understand the lived experiences of MHWB. First, a research agreement was developed and signed by both schools outlining the commitments of both parties, and specifically the safeguarding procedures the researcher should adhere to when on-site. This also assigned a LT as an on-site point of contact for the researcher. Secondly, the researcher asked the LT about the school mental health resources available to support students and staff to add them to the debrief documentation available to participants during research encounters. Thirdly, two students were asked if they wanted to end photography elicitation interviews as they raised difficult topics, but both were happy to continue. Lastly, participants were given written (Participant Information Sheet) and verbal notices (project introduction sessions) that a disclosure of harm or production of inappropriate photographs would be reported to school designated Child Protection Officers.

5.9 Guide to Empirical Chapters

What follows are three empirical chapters linked to the process evaluation domains of context and implementation, mechanisms, and social validity, respectively. Below shows how the chapters link to the process evaluation research questions.

5.9.1 Chapter 6 - Implementation Fidelity accounted for by Context

This chapter addresses the research questions linked to implementation and context which were: ***Were the co-production functions implemented with fidelity and what is the nature of any adaptations?*** *and* ***How does school context affect implementation?***

5.9.2   Chapter 7 - The Upstream Mechanisms of Shared Decision-Making

The chapter answers the two research questions about the mechanisms of change. The questions were: *Did the mechanisms of change work as hypothesised? and How were these affected by the resources and activities provided, participants' reasoning and responses, and contextual conditions?*

5.9.3   Chapter 8 – The Social Validity of Wellbeing Plans

The chapter attends to the research question linked to the domain of social validity which was*: Can co-production support school stakeholders to produce valid and implementable wellbeing intervention plans?*

6   Chapter 6: Implementation Fidelity accounted for by Context

This chapter presents results for the domains of implementation and context. It seeks to address the following research questions:

Were the co-production functions implemented with fidelity and what is the nature of any adaptations?

How does school context affect implementation?

It commences with an implementation section (6.1) exploring delivery of pre-specified descriptors of fidelity for schools which draws on researcher-based data from the research diary, and individual and group observations. It describes if, and how, implementation was achieved including what adaptations were necessary. It closes with a summary of the similarities and differences in the delivery of co-production between the two case study schools. The subsequent section (6.2) assesses the intervention/context interface and accounts for the similarities and differences between schools found in fidelity. The context data is drawn from the four data collection methods of the research diary and observations, the RAG (Research Action Group) interviews and the SMT (Senior Management Team) focus groups. It uses concepts in CAS (Complex Adaptive Systems) to understand the contextual conditions that affected implementation.

6.1   Implementation Fidelity

Section 5.3.2, within the previous phase 2 methodology chapter, expounded that the integrity of implementing functions was to be assessed through pre-specified descriptors of fidelity. These descriptors were produced in phase 1 (section 4.5) through amalgamating the systematic review results, stakeholder involvement, and latent researcher understanding of co-production. Table 13 shows the functions, descriptors of fidelity, the preferred forms, as well as if and how forms were adapted by participants or the researcher in schools. Through a traffic light system, the table indicates whether descriptors were implemented with high fidelity (green), adapted but maintained fidelity of function (amber), or implemented with low fidelity/adapted but fidelity of function was not maintained (red). Following the table are descriptions of how implementation for descriptors was achieved inclusive of adaptations undertaken, and an implementation summary.

Table 13: Function and Form Matrix

Function (standardised)	Descriptors of Fidelity	Form (preferred)	Form (adapted) RH	Descriptor met	Form (adapted) PC	Descriptor met
Structure - How stakeholders are connected within the system through the RAG subsystem.	1. Recruit two secondary schools to develop RAGs.	a. Sample by FSM entitlement, geographical location, and population size. b. Ensure SMT on-board through signing research agreement. c. Send information through SHRN.	✓	*(green)*	✓	*(green)*
Recruitment - The development of new activity settings or events if a necessary structure does not already exist.	2. Recruit a minimum of 10 students of differing year groups and genders.	a. Assemblies delivered so all students have an opportunity to take part.	Researcher delivered assemblies to Years 7, 8, 9 & 11. Information given by tutors to other year groups.	*(orange)*	Researcher delivered assemblies to all year groups except 7.	*(orange)*
		b. Students nominate themselves.	Students asked to write why they would be good at role. Staff approached students.		Nomination box placed in reception but was lost. Staff approached students.	
	3. Recruit a minimum of 3 school staff	a. Students nominate staff.	LT nominated staff.	*(orange)*	LT nominated staff.	*(orange)*
	4. Recruit a minimum of one community member	a – Students nominate external members.	LT approached Youth Mentor from school.	*(red)*	Youth Engagement Officer from school nominated by student.	*(red)*
Group Development - The development of social relationships between co-production stakeholders in	5. Run Group Development Tasks	a. Run introduction session for prospective members.	✓	*(orange)*	Researcher met with students on 1-1 basis. LT briefed staff.	*(orange)*
		b. First session ice breaker/fun activity.	Ice breaker was started but not finalised.		✓	

Problem Phase	Objective	Action	Column A	RAG 1	Column B	RAG 2
	RAGs.			[orange]		[orange]
Problem-Setting - How stakeholders produce an understanding of how health problems manifest in schools and decide health priorities.	6. Access school-level health data to understand wellbeing	a. Research agreement signed by SMT.	✓	[green]	✓	[green]
		b. Access school SHRN reports.	✓		✓	
	7. Involve RAGs in understanding and prioritising school health needs.	a. Undertake student photography to understand their representations of wellbeing.	✓	[green]	✓	[green]
		b. Meeting 1: Present wellbeing theme cards with photography and survey data for RAG to prioritise needs.	✓		✓	
		c. Meeting 2: Verify top 5 wellbeing themes from last meeting.	✓		✓	
Problem-Solving - How stakeholders decide solutions to redress problems.	8. Generate school priorities and solution actions.	a. Meeting 2: Brainstorm solutions.	Not all themes had solutions so added to next meeting.	[orange]	Not all themes had solutions so added to next meeting.	[orange]
		b. Between meetings: Researcher scopes research and practice solutions.	Completed but process needs amending.		Completed but process needs amending.	
		e. Meeting 3 – Action plan to decide actions, by who, when and how achieved.	LT took charge of writing solutions to complete before end of meeting. Adapted next session to highlight parts not finalised by students.		Some parts of action plan were only discussed by half of group. Not all solutions were discussed so modified next session to highlight plan decisions not made.	
		f. Meeting 4 – Action plan finalisation.	Researcher decided to facilitate session. Not completed so plan taken back to students at another meeting.		Researcher decided to facilitate session.	
Problem-Setting	9. Involve 50% of		Difficulties getting staff	[red]	✓	[green]

and Solving	RAG in three or more meetings		to attend meetings.	■		■
Adoption – Whether and how processes are used to accept recommended health activities.	10. SMT commit to taking some actions forward.	a. SMT read final plan before adoption meeting.	Plan not read.	■	✓	■
		2 - Discuss the way forward and/or commit to some actions.	Met with SMT but no commitment to actions. LT advised will take forward what she can.		E-mail received from Headteacher stating three actions accepted.	

✓ indicates delivered as intended.

6.1.1   Recruit two secondary schools to develop RAGs.

Two contextually diverse schools were recruited (high fidelity). Schools were assigned the pseudonyms Rowland High (RH) and Partridge Comprehensive (PC), and their profiles are presented in Table 14.

Table 14: Profile of the Secondary Schools

	RH	PC	Welsh Average
School Population (n)	1,307	945	1,000
FSM Entitlement (%)	7	20	16
Geographical Location	Urban	Semi-Rural	-
Average Attendance (%)	94.2	93.1	93.9
Pupil to Teacher Ratio	17.1	18.2	16.5
Key Stage 4 Attainment (% 5 GCSEs A*-C)	72	51	53.8
School Budget per pupil (£)	4568	4666	4291

Data provided by MyLocalSchool (Welsh Government, 2018 https://mylocalschool.gov.wales/); 2018 School Census Wales https://gov.wales/sites/default/files/statistics-and-research/2018-12/180725-school-census-results-2018-en.pdf; Stats Wales https://statswales.gov.wales/Catalogue ;https://statswales.gov.wales/Catalogue/Education-and-Skills/Schools-and-Teachers/Examinations-and-Assessments/Key-Stage-4/interimexammeasuresforyear11pupils-by-year; https://statswales.gov.wales/Catalogue/Local-Government/Finance/Revenue/Delegated-School-Budgets/delegatedschoolbudgetsperpupil-by-sector

Rowland High is a large population school with a low FSM entitlement (Table 14). It is an English medium, mixed gender secondary school with a sixth form. It is in an affluent urban area, with its Lower Super Output Area (LSOA) ranking in the highest 5%. School attendance is slightly above the national average at 94.2%, and attainment is very high at Key Stage 4 with 72% obtaining 5 GCSEs A*-C or equivalent.

Partridge Comprehensive is a medium sized school with an above average FSM entitlement (Table 14). It is an English medium, mixed gender secondary school with a partnership sixth form which spans two school sites. The school is in a former coal mining town, with the LSOA assessed as among the 30-50% most deprived in Wales. School attendance is below the Welsh average at 93.1%, and attainment is comparable to the national average as 51% of students achieve 5 GCSEs A*-C or equivalent.

6.1.2   Recruit a minimum of 10 students of differing year groups and genders.

This descriptor was given an amber in each school denoting adaptations were made but fidelity was maintained. Rowland High met the 10 student target and Partridge Comprehensive exceeded it by recruiting 12 students (Table 15). However, neither school recruited Year 11 students, with Partridge recruiting two students from every other year group, but Rowland also struggling to recruit Sixth Formers (Year 12-13). Further, Rowland High achieved an equal student gender split, but Partridge Comprehensive had slightly more females (58%) than males (42%).

Table 15: Numbers and Profile of RAG members

		RH		PC	
	Participants	**Male**	**Female**	**Male**	**Female**
Students	Year 7	2	0	0	2
	Year 8	1	1	1	1
	Year 9	1	1	1	1
	Year 10	1	1	2	0
	Year 11	0	0	0	0
	Year 12	0	1	1	1
	Year 13	0	1	0	2
	TOTAL	**5**	**5**	**5**	**7**
Staff	School Staff	5		3	
	External Member	1		1	
	OVERALL TOTAL	**16**		**16**	

The preferred recruitment form, through researcher assemblies and self-nomination, was not always possible. Hence, some year groups received information from staff in form time, and staff selected five students in each school. Also, one Partridge student became involved due to a friend's suggestion.

6.1.3   Recruiting Staff to the RAG

Whilst both schools met the target of having at least three RAG staff members, only one adult was nominated in either school by a student as preferred (Youth Engagement Officer at Partridge); all others were nominated by the LTs, so schools received an amber rating (fidelity maintained).

Rowland High exceeded the adult recruitment target as six staff intended to be RAG members. The RAG staff (figure 5) were the project LT as Head of Inclusion and Wellbeing,

two Wellbeing Directors for Key Stages 3 and 4, and two Wellbeing Officers. The external member was a Local Authority (LA) Youth Mentor.

Figure 5: Map of Rowland High Staff RAG members
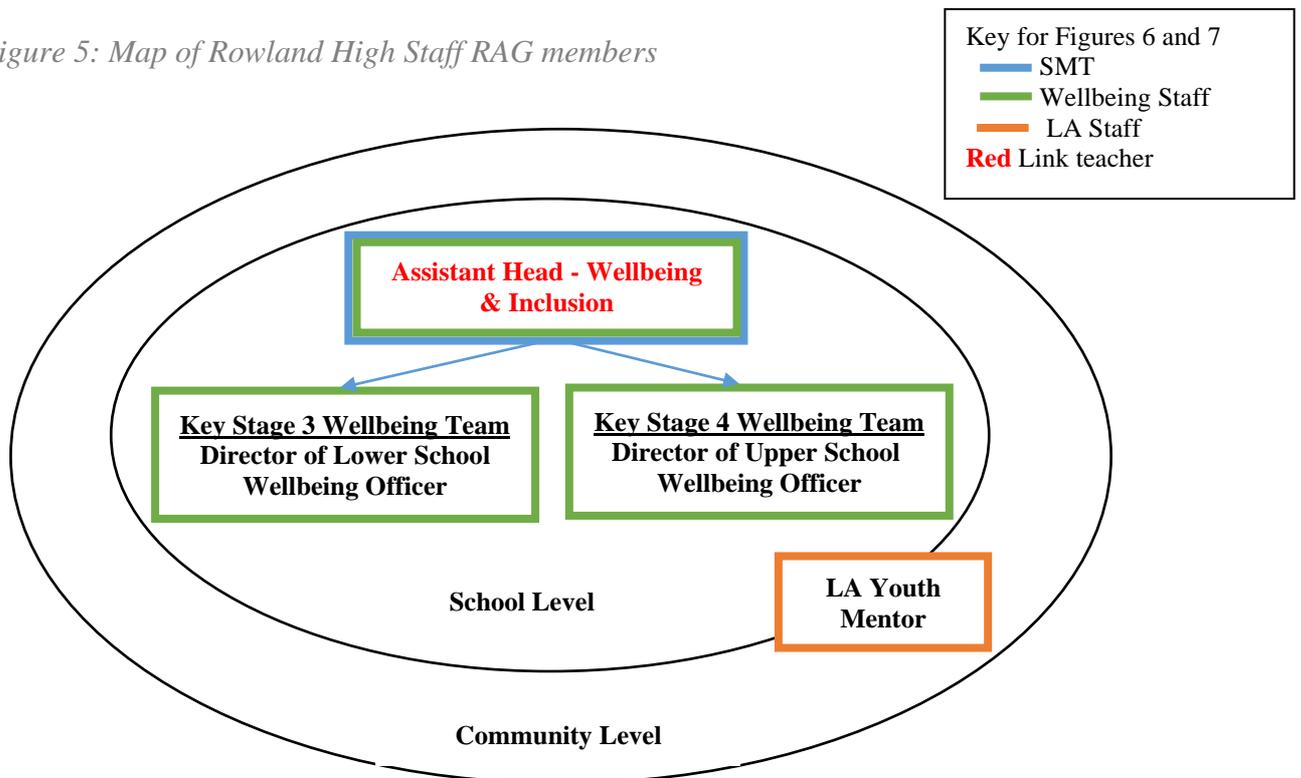
Partridge Comprehensive also met the target to recruit three school staff. The RAG staff (figure 6) were the LT who was Faculty Lead for Health and Wellbeing, his line manager as the Emerging Leader of Wellbeing and Attendance, and the Key Stage 4 Wellbeing and Attendance Manager. The external member was a LA Youth Engagement Officer (YEO).

Figure 6: Map of Partridge Comprehensive Staff RAG members
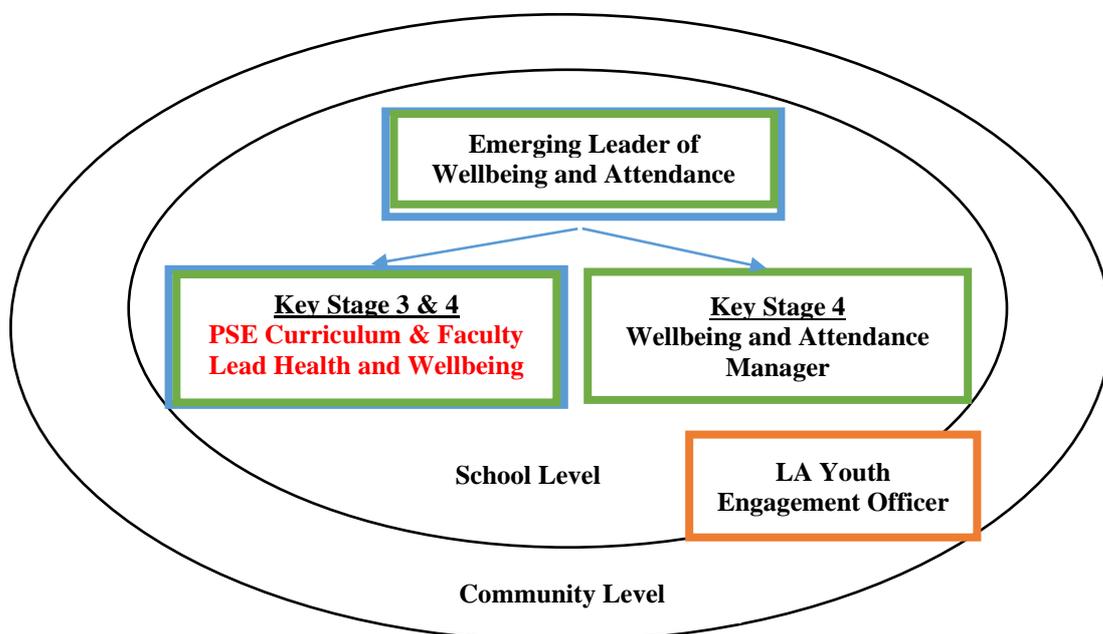
6.1.4 Recruiting Community Members to a School RAG

Low fidelity was found for both schools because LTs recruited LA staff who worked in the schools, and the intention was for this to be a parent, Governor, or other community member.

6.1.5 Running Group Development Tasks

Not all group development tasks were run as intended in either school, but fidelity was maintained (amber statuses). In Rowland High, the Introductory Session took place, but not all attendees went on to be RAG members, and not all final RAG members attended. Also, the researcher started to run an icebreaker during the first meeting, but it was not finalised, and most members were not involved. In Partridge Comprehensive, the initial icebreaker was run but no Introductory session took place, so the researcher briefed students in individual meetings and the LT informed staff. These adaptations were necessary to prioritise the functions of problem-setting and solving during meetings.

6.1.6 Accessing School-Level Health Data

To undertake problem-setting, RAGs needed their school-specific 2017/18 SHRN survey reports. In both schools, an SMT member signed the research agreement (Appendix R) to allow SHRN to release the reports (high fidelity). The survey response varied though as Partridge had a high student response rate of 787 (83%) but Rowland received a medium response rate of 584 students (45%). Both schools had very low non-consent rates (6% and 1% respectively) indicating students were happy to complete surveys.

6.1.7 Involve RAGs in Understanding and Prioritising School Health Needs.

All RAG students took part in photography and each RAG prioritised five school wellbeing themes within a problem-solving meeting (high fidelity). To understand students' involvement in photography, observations assessed students' level of task understanding and support needed, engagement, and task completion (observation criteria expounded in 3.5.2). Table 16 shows overall engagement and completeness of students' photographic datasets were consistently high; however, there were differences between schools.

In Rowland, the task understanding mean (1.90) was high as all but one student gave a range of wellbeing examples, inclusive of the School Climate research (Thapa et al. 2013) domains of safety, relationships, teaching and learning, connectedness to school as well as issues that

were pertinent to different times of the day, to individual health (food and eating), and/or wellbeing support. Whereas in Partridge, the lower mean (1.18), and larger standard deviation (0.87), and range (0-2), was because some students focused on one domain, stated they did not know what wellbeing was or what to photograph.

This corresponds to the higher level of support needed in Partridge (mean =1.00) than Rowland (mean = 0.80) as more strategies per student and a wider variety of strategies were used to develop students' wellbeing representations. Strategies included: talking through emotional wellbeing flashcards based on the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) (Tennant et al. 2007); advising students to take photos when they feel one of the flashcard emotions; and giving students examples of wellbeing. Also, some students reported seeking other's ideas (friends and family) because they struggled.

Table 16: Observer ratings of students understanding, engagement, level of support needed, and completion of photography aims.

	RH N=10		PC N=11*	
	Mean (SD)[a]	Range	Mean (SD)	Range
Initial Understanding	1.90 (0.32)	1-2	1.18 (0.87)	0-2
Support	0.80 (0.92)	0-2	1.00 (0.89)	0-2
Engagement	1.90 (0.32)	1-2	1.64 (0.50)	1-2
Completeness	1.80 (0.42)	1-2	1.18 (0.60)	1-2

*Two students did a paired interview so student numbers are plus one.

[a] Items measured using a three-point Likert scale.

Similarly, engagement levels and task completion were higher and less disperse in Rowland (1.90; 0.32) than Partridge (1.64; 0.50). For engagement, some students took a range of photos and gave clear rationales for taking them, resulting in free-flowing conversations controlled by the students. Whereas other students took few photos or several of the same issue, resulting in researcher-controlled interviews through questioning or prompting explanations. For task completion, more students in Partridge added themes during photo-elicitation they did not photograph.

6.1.8   Generating School Priorities and Solution Actions.

In both schools a finalised plan was developed and accepted by RAGs including five wellbeing priorities (Appendix X) and multiple solutions. However, both schools were assigned an amber status because group observations demonstrated challenges (observation criteria expounded in 3.5.2).

Table 17 shows the patterning of the meeting domains were relatively similar for schools with only a few departures. Task understanding was consistently high (between 1.50-2.00) as the researcher did not re-explain tasks often. However, support needs increased over meetings, engagement fluctuated, and aim completion was not always achieved. The reasons will be expounded in section 7.4.2 but were linked to task difficulty and knowledge limitations to undertake problem-solving. Consequently, this was an intervention point where the researcher decided to make major adaptations. First, RAGs were split into two smaller mixed (staff and student) groups for meetings rather than one large group to ensure all five issues were considered. However, by the last meeting, the researcher brought the groups together as one and decided to take over the meeting facilitation.

Table 17: Mean observer ratings of RAG understanding, support needed, engagement and activity completion.

RH				
Activity Meetings	Understanding	Support	Engagement	Completion
Ranking (meeting 1)	1.67	0.33	1.67	2.00
Brainstorming Initial Solutions (meeting 2)	2.00	0.50	2.00	1.50
Action Planning (meeting 3)	1.50	1.00	1.50	1.00
Finalising Action Plan Activity (meeting 4)	2.00	2.00	1.00	1.00
PC				
Activity Meetings	Understanding	Support	Engagement	Completion
Ranking (meeting 1)	1.67	0.33	1.33	2.00
Brainstorming Initial Solutions (meeting 2)	1.50	0.50	1.33	1.50
Action Planning (meeting 3)	1.50	1.50	1.00	1.00
Finalising Action Plan Activity (meeting 4)	2.00	2.00	1.00	2.00

[a] Items measured using a three-point Likert scale.
Note, for some of the activities the larger RAG groups were split into smaller groups to undertake tasks therefore mean ratings are used.

Additionally, between meetings 2 and 3 the researcher scoped the research and practice solutions available for priorities to propose them to RAGs. This was done by internet searching school schemes to affect change (i.e., Stonewall's Champions Programme) and consulting colleagues at their research centre, staff at Public Health Wales, and the Welsh Local Government Association. This was more laborious than intended and will need to be amended in future iterations which, again, is considered in section 7.4.2.

6.1.9   Involve 50% of RAG in Three or More Meetings

As shown in Table 18, the descriptor was met in Partridge as 11 (69%) members attended three or more meetings (high fidelity) but not in Rowland as only seven (44%) members achieved this (low fidelity). In Rowland, this was because of staff attendance, as only the LT (17%) attended all meetings with two staff (The Directors of both Key Stages) not attending any meeting but signing up for the intervention. Whereas Partridge Comprehensive had a small but stable group of four staff, with only one member (25%) missing a single meeting.

Table 18: Attendance at RAG meetings

	RH			PC		
Meetings Attended	Students n (%)	Staff n (%)	Total n (%)	Students n (%)	Staff n (%)	Total n (%)
Four meetings	3 (30)	1 (17)	4 (25)	1 (8)	3 (75)	4 (25)
Three meetings	3 (30)	0 (0)	3 (19)	6 (50)	1 (25)	7 (44)
Two Meetings	2 (20)	2 (33)	4 (25)	4 (33)	0 (0)	4 (25)
One Meeting	1 (10)	1 (17)	2 (13)	0 (0)	0 (0)	0 (0)
None	1 (10)	2 (33)	3 (19)	1 (8)	0 (0)	1 (6)

Student retention was moderate (RH=60%; PC=58% in three or more meetings) however, lower levels of attendance were found in older students (figure 7). Also, only one student from Rowland withdrew after photography (note the Partridge student who did not attend meetings did not withdraw and was interviewed post-intervention about attendance barriers).

6.1.10 SMT Commit to Taking Some Actions Forward.

The last fidelity descriptor was judged as low for Rowland (red) and high for Partridge (green). In Rowland, no SMT member had read plans, and although comments were made about some actions fitting with the School Improvement Plan, no commitment was given as the Headteacher was absent. Post-meeting the LT said she would take forward as many actions as possible. Whereas in Partridge, most attendees had read the plans, and the Emerging Lead for Attendance and Wellbeing (RAG member) had already met with the Headteacher to discuss taking actions forward. No commitment during the meeting was given as the Headteacher was cross-referencing the actions with the School Improvement Plan. Shortly after, the Headteacher emailed the researcher to commit to taking forward three priorities.

6.1.11 Implementation Summary

Table 13 gave an overview of implementation fidelity and intervention adaptations. It showed similarity between schools on 8 (80%) fidelity descriptors. Both achieved three green (high fidelity), four amber (adapted but maintained fidelity), and one red (low fidelity) statuses. The two (20%) differences in fidelity were in the descriptors of 'involve at least

50% of the RAG members in three or more meetings' and to 'Get SMT to commit to taking some actions forward', with Partridge gaining two green (high fidelity) but Rowland two red (low fidelity) statuses. The following section will account for these findings through assessing the intervention/context interface and outlining the contextual conditions which supported or hindered implementation.

6.2   Similarities and Differences in Implementation Fidelity due to Context

This section accounts for the similarities and differences in implementation through the understanding of how the context and intervention interacted. The process evaluation domain of context was framed through concepts informed by the work of Hawe et al. (2009) and Keshavarz et al. (2010) (section 5.3.1). Drawing on data from the four methods of the research diary, observations, RAG interviews, and SMT focus groups the section is organised through considering school's nested system structures. Similarities in implementation are explored in the section 6.2.1 and differences in section 6.2.2.

6.2.1   Similarities in Implementation for the Two Schools

This first subsection will outline the contextual conditions responsible for the eight (80%) fidelity descriptors which were assessed as the same for schools (Table 19). They both achieved three green (high fidelity), four amber (adapted but fidelity maintained), and one red (low fidelity) statuses. Similarities are explained through four analytical themes (Table 19). High fidelity was due to the alignment of the intervention with supra system duties and school needs. Understanding how the intervention and context successfully adapted to each other to maintain fidelity is explored in the subsections of realigning school resources to accommodate the intervention and intervention flexibility to align with school priorities and functioning. The last section discusses how low fidelity was found in the ability to engage with parallel systems such as families on wellbeing.

Table 19: Plotting the Descriptors of Fidelity by Analytical themes for Implementation

	Alignment of the Intervention with Supra system Duties and School Needs		Realigning School Resources to Accommodate the Intervention		Intervention Flexibility to Align with School Priorities and Functioning		Inability to Align with Parallel Systems		Embeddedness of the Intervention in School Subsystems		Intervention Coupling with the Existing Baseline Contexts	
	RH	PC	RH	PC	RH	PC	RH	PC	RH	PC	RH	PC
1. Recruit two secondary schools to develop RAGs	X	X										
2. Recruit a minimum of 10 students of differing year groups and genders.			X	X	X	X						
3. Recruit a minimum of 3 school staff.			X	X								
4. Recruit a minimum of one community member							X	X				
5. Run Group Development Tasks					X	X						
6. Access school-level health data to understand wellbeing.	X	X										
7. Involve RAGs in understanding and prioritising school health needs.			X	X	X	X						
8. Generate school priorities and solution actions.			X	X	X	X						
9. Involve 50% of RAG in three or more meetings.									X	X	X	X
10. SMT commit to taking some actions forward.									X	X	X	X

6.2.1.1 Alignment of the Intervention with Supra system Duties and School Needs

In both schools, a co-production intervention based on listening to learners to make wellbeing change was welcomed. The focus of the intervention aided school recruitment (high fidelity) and encouraged senior staff to sign the research agreement (high fidelity) so RAGs could utilise the SHRN school-level data to support decision-making. This was demonstrated by the LTs' rationales for engaging. In Rowland, the LT thought about the need to address wellbeing at a general level, as it was her role as Assistant Head leading on Inclusion and Wellbeing to consider student wellbeing needs. She wanted to extend their wellbeing focus to a more universal level.

> RES: Um just keen to really make links with people who have got um an invested interest in wellbeing, um, just because I have a passion for ensuring that you know, wellbeing is, is really sort of the profile is kept raised within the school that it's a really important aspect. That it doesn't just, we don't just forget about it, and it just you know runs along with the school day. Um it's something that I want to consistently be talking about with staff, with SMT, you know, I wanted to look at different areas of wellbeing, so taking it away perhaps from um individual student needs and looking more at the school as a whole. Um which I knew the project would do.
>
> *(Rowland LT)*

Further the SMT at Rowland thought the project was appealing as it aligned to the agenda around student voice:

> RES1: It always helps us to refocus when you're obviously on the treadmill of school, you know, kind of going through each day sometimes you forget to look at certain aspects and certainly the fact that the driving force came from our students, so it tied in really nicely with Student Voice.
>
> *(Rowland SMT)*

Similarly, in Partridge, staff thought the school was ready to listen to learners on wellbeing.

> RES1: Um I think obviously getting pupils involved and letting them have a say in, in what they feel is important, um, is a really good thing. You know, as staff we, we look at our Wellbeing behaviour, whatever policy it is, and it's always good to get the student feedback, because they're the ones who are going to be you know, the sort of agents of this policy.
>
> *(Partridge SMT)*

Although the Partridge LT identified the wellbeing need as more specific and urgent, as an impending visit from Estyn, the School Inspectorate, had orientated the school to consider how to address their SHRN report feedback about student health and wellbeing.

> RES: There's a lot of information to pull apart. so we looked at you know what we consider to be the worst areas if you like …and so some of that has been

addressed. We've got the, erm, the school liaison officer; has come in to do some work on texting or sexting, etcetera ... erm, and we did anti-bullying week, erm, because that was quite high up as well, so there were a few things that we sort of, we did act upon, but there was just so much in the report ....it was a bit of a, oh, blinking heck we've got to deal with all this and so I think what you're doing or when (SHRN manager) sort of said to me or said is it possible for you to come in and do this ...it was like, wow, that's going to be really helpful.

(Partridge LT)

This highlights that the intervention fell within the limits set by the Welsh national education system, a supra system to the schools as it sits above them in the nested system structure. Estyn guidance (2015) recognises the importance of health promotion through outlining that schools should ensure students feel healthy and safe, and a part of community involvement and decision-making. It also showed that the national health supra system infrastructure, in the form of SHRN, orientated them to changing wellbeing and drove school recruitment.

Hence, at intervention commencement the perceived need to make wellbeing change with students was facilitated by internal and external feedback loops. Internally, schools wanted to take stock and change their focus to better address wellbeing needs; whereas more formal external feedback about school duties and needs from education and health supra systems orientated schools towards the intervention.

6.2.1.2 Realigning School Resources to accommodate the Intervention

Intervention roll-out relied on schools realigning their resources to support implementation with five fidelity descriptors (Table 19) for both schools assessed as successful (two high fidelity and three adapted but maintaining fidelity). The four school resources harnessed to achieve this were the LTs, routine activity settings, the information systems, and space, all of which worked synergistically to result in successful intervention delivery. The nuances in this are explored below.

The LTs supported co-production through being the researcher contact, organising activities, and harnessing the other three resources. The LT at Rowland had an expansive role managing two Key Stage Wellbeing teams, all Additional Learning provision, and Student Voice, so she did not teach. Whereas the LT's role in Partridge started as the Head of PE but during the intervention was expanded to Faculty Lead for Health and Wellbeing, where he was subsumed into the SMT, but he continued to teach. Both LTs were committed and organised, and they harnessed the other resources well.

For example, in both schools LTs were able to use routine activity settings to support student recruitment through the intended form of assemblies, or form time. It was easier for the Rowland LT as she had more power and influence to displace other assembly activities.

> *Today was the first assembly in Partridge Comprehensive with Year 8 and will be the only assembly of this half term as the Year 7 assembly scheduled for Friday was moved due to other activities which have been deemed more important than this project (not sure what the other activities were). This is interesting only because (LT) said that he was overridden in getting the assembly to go ahead, showing that not having a member of SMT may be impacting the implementation of the project early on.*
>
> *(Research Diary)*

Also, they utilised the school information systems to facilitate communication to students about meetings and photography sessions. These systems were proactive; for example, in Partridge, students were flagged in electronic registers, whereas in Rowland tutors, were emailed. Additionally, reactive IT systems were used that, in theory, could locate students whenever needed were used. These were limited though. The Partridge LT used the register system, however this only worked one-way, so the LT and researcher were not notified about absent students. This accounted for some intervention lag during photography as students missed sessions. This was exacerbated by irregular contact between the researcher and the LT as his teaching commitments limited his availability, so rebooking students took a long time.

A further limitation was the lack of a register system with Sixth Form Partridge students, who all attributed their meeting absences to not receiving information or not being available as the Sixth Form partnership meant they attended lessons on different sites:

> *RES: Well obviously because we was over at (partnership school) a lot and obviously when we have free lessons we don't get told if we go to meetings or anything. So if you was here we wouldn't know because it gets put in the register.*
> *INT: Okay, okay. So you don't get told because of the register is not ... you don't have registration as such?*
> *RES: No we sign in, in the mornings, so we don't have registration or nothing.*
>
> *(Partridge Stu11)*

The imperfection of the information systems was not a problem in the photography stage in Rowland as the researcher was co-located with the LT and she was available to locate students due to her non-teaching role. Rowland students also less frequently forgot to attend

one-to-one meetings, with all but one student completing their photography within 6 weeks, explained as:

> *In this school one of the areas which has facilitated the interviews is getting the students to write in their planners. The students really do follow their planners, so this has helped the project to continue as I am not chasing up students. I feel this links to the school expectation that they take responsibility for themselves. This really has supported the project.*
>
> *(Research Diary)*

However, information flow was more of a barrier during the meeting stages as staff did not frequently check emails:

> *RES: Yeah, obviously yeah, it's hard to get people, and not everyone gets the message, um.*
> *INT: And who do you rely on to get the message to you?*
> *RES: Um.*
> *RES: (the LT) usually emails the Form Tutors.*
> *INT: Oh okay.*
> *RES: But sometimes they don't get it in time, or they don't read their emails in time. So usually I find out from people coming to get me.*
>
> *(Rowland Stu2)*

This resulted in lower levels of student attendance at meetings:

> *This was not a well-attended group meeting. When we started only (Stu1) and (Stu2) were present but (Stu6) came soon after. (The LT) had to leave the room to go get (Stu4 &Stu5) I am not sure why all the students weren't present as (The LT) had said that she had sent two e-mails; one a few days ago and one immediately prior to the session. We knew that (Stu3) would not be available as he was out on a school trip, but I am not sure what has happened to the four older students.*
>
> *(Rowland Meeting 2 Observation)*

This was a reoccurring issue for Rowland group meetings resulting in truncated intervention time as students needed locating during meetings.

Another resource needed was an appropriate space for intervention activities. The main issue with the Partridge site was the Sixth Form partnership which decreased student meeting attendance, as already outlined. However, the use of a consistent training room was a facilitating factor for meetings because all students knew where to go and arrived promptly, and there was no need to rearrange rooms, giving a relaxing meeting start. According to students, this was enhanced by the LT organising refreshments. Contrastingly, Rowland's space issues meant meeting rooms changed, they were occupied in prior lessons, and needed rearranging before meetings, leading to frantic starts:

> *The room was a mess and very cluttered. The tables and chairs were everywhere, and I decided straight away to move the room around, even though (the LT) was not there to ask. I presumed this would be ok as the room was not in any kind of order, just furniture randomly strewn around. (Stu6 & Stu7) both helped to move the furniture and others started to come in as we were doing it. Once we had moved the furniture around it was still cluttered as there seemed like too much furniture for a small room.*
>
> *(Rowland Meeting 1 Observation)*

The LT explained the dated school site was inadequately sized for the school population especially as demand meant an extra form class had been created in new school years. This was demonstrated by staff joking that Year 7 *"were like Harry Potter under the stairs"* as a makeshift common room had been created.

However, in Rowland, this frantic start to meetings was ameliorated by researcher-LT catchups, possible due to her non-teaching role. This allowed reflection on progress and gave the LT a better project comprehension and a clear idea of meeting tasks. This minimised the truncated meeting times because once students were present the LT knew what was planned and facilitated groups quickly (see also section 7.4.2).

This subsection demonstrated four school resources were realigned in terms of the LTs, the routine activity settings, the information systems, and the school space/site, which synergistically progressed implementation. The next subsection focuses on intervention flexibility needed to align with school contextual conditions.

6.2.1.3 Intervention Flexibility to align with School priorities and functioning

Minor challenges with aligning with school priorities and schedules resulted in intervention lag which showed the need to build in flexibility for co-production to function within diverse contexts. For example, schools principle remit is education and there were times when this took precedence over co-producing a wellbeing plan. This was most notably an issue when recruiting and retaining older students (sections 6.1.2 and 6.1.9), with RAGs omitting Year 11s in both settings leading to an amber status for student recruitment.

> RES: *... year 11, year 12 and year 13 are kind of a no go, because they are consistently either doing course work or exams or, you know, sometimes with year 13 they were learning offsite for example, so we are looking more at our year 7 to 10, if you are really looking to make a consistent impact.*
>
> *(Rowland SMT)*

Students also noted this was an issue when undertaking photography and some said they rushed their photography datasets or could not complete them.

> *RES: I was quite busy when um, I had to take some pictures, because er, my exams were coming up, so ... that's a bit busy for that, and I would have liked to take more pictures.*
>
> *(Partridge Stu9)*

Staff having wellbeing roles also meant they had to deal with issues such as Child Protection or bullying. This decreased staff attendance at meetings in Rowland and affected Partridge staff as they were sometimes distracted during meetings or had to leave for short periods.

Another barrier was the intervention needed to fit into the workings of the schools. Early in intervention roll-out, it became clear schools could not commit to a meeting schedule, so they were ad hoc when LTs could displace other activities. Also, schools did not want a standard meeting time so as not to interrupt the same lessons. These slowed the intervention momentum, as expressed by students:

> *RES: Erm it took quite a long time because like the first meeting we had was like back in October and even though we're like finalising it now in May it feels like it's been going on for a very long time.*
> *INT: Yeah.*
> *RES: October to May is like I don't know what, six months?*
> *INT: Yeah, yeah.*
> *RES: It's quite a long time. Yeah, but obviously that can't be helped.*
>
> *(Rowland Stu4)*

Also, the researcher noted some functions took prolonged periods to achieve, specifically the photography due to the fit with the school year:

> *For both schools it has taken months to do the photography, noting that it has been Christmas in between so the schools have been off for a few weeks. I was not sure how long I thought the photography would take but this does seem like a long time. I am not sure I could have done it any quicker though because of the staggered recruitment of students, the fact that some students forgot multiple times to come to meetings, or to get their consent forms back to me.*
>
> *(Research diary)*

This meant functions did not run as distinct phases as the researcher started one before finishing another, shown in project timelines (appendix S).

Also, interventions were bound by having 1-hour lessons for meetings which was exacerbated in Rowland (shown in the preceding section) by the truncated time. This was expressed by staff and students:

> *RES: Um no I don't think so, I didn't, I, as I said, the, the two that I were in, were really, really good and there was nothing in them that was an issue, um I think the time was an issue, err because it was an hour long.*
> *INT: Okay yeah.*
> *RES: And so I think maybe if we could do it a little bit longer just because. I know some of the kids had a few more ideas that they couldn't quite get down in the time. By the time you come in, you get everyone in, because sometimes they forget, um, but by the time you get there, you settle down, it, that's, fifteen, twenty minutes gone.*
>
> <div align="right">

(Rowland Sta2)
</div>

Students also felt rushed during meetings so longer sessions would have been desirable:

> *INT: So, you said [in their RAG survey] you'd like more meetings?*
> *RES: Yeah.*
> *INT: What would you like more meetings for?*
> *RES: Yeah like so we could have more discussion on each thing, because it was only like a brief ten minute discussion on each thing, which I don't think is enough to like put an actual plan into place.*
> *INT: What do you think would be the best way?*
> *RES: One a week for about ten weeks, so we have the start, the first meeting, then we have like the, we have like a, a meeting on each plan, on each section of the school wellbeing that we need improvement on.*
>
> <div align="right">

(Partridge Stu7)
</div>

Time partially accounted for the need to make two adaptations to meetings (see 6.4.2 in the succeeding chapter for further reasons); however, neither derailed the intervention. First, group development tasks were forfeited (as shown in 5.1.5) by the researcher to prioritise the functions of problem-setting and solving during meetings. Secondly, the last two problem-solving meetings needed to accommodate unfinished tasks from prior meetings.

Competing with school priorities, the inability to schedule meetings proactively, and having adequate time, are not barriers specific to co-produced school-based interventions. Stakeholders recognised this, and felt researchers need to be accommodating of these issues:

> *RES: I think you've been brilliant at just going with the flow with us as a school.*
> *INT: Okay yeah.*
> *RES: Because it's not easy to kind of um, be committed to something when you've got all the things that fly in and hit you during the school day and I think what's been great about this project is that you've been able to just stay really calm and be very flexible, even when you can see that this thing's been thrown at us from, from all over, which sometimes interrupts what we're trying to do with the project.*
> *INT: Yes [chuckling], um yeah.*

RES: But you've been just very understanding of that and that's really helped us as a school. Because we couldn't have engaged in this otherwise, because you know, we can't take away the things that are going on outside of these meetings.
INT: Yeah, yeah.
RES: You know, not being able to have a full cohort for the meeting or changing who was being interviewed at certain times. You know, we've been able to be quite flexible with that, so I think that's really, really important, is that whoever goes in to deliver a project, has a great understanding about schools in general and that every school is different.

(Rowland LT)

However, the next section will focus on a more crucial issue in the form of school's being unable to align with parallel systems to support intervention implementation.

6.2.1.4 Inability to Align with Parallel Systems

Not being able to recruit parents to RAGs (low fidelity) revealed the schools' inability to align with parallel systems. Staff expressed that they had strong relationships with parents shown by high engagement at open and parents' evenings; however, this was limited to a focus on their child's education. Parental engagement in wellbeing was more difficult to achieve. For example, in Rowland:

RES: We've got a lot of parents that are doctors or have links outside of school anyway so, and they won't want to sort of bring any concerns that are outside school inside school because they want to keep that separate for their child……. but parents are quite private and you know, like I say sometimes they want to keep home and school separate.

(Rowland Sta3)

Staff recalled organising parental marketplaces with service providers, but this was stopped due to time limitations. Further, the dispersed nature of the school community fed into the issues with parent-school relationships. This was created by a LA admissions policy which often meant children from local primaries did not get into the school, or, at a minimum, parents needed to challenge decisions which the LT helped with. This was exacerbated by the high demand for the school as student attainment (shown in Table 14 about school characteristics) was very high. In turn, this positioned parents as 'consumers' rather than educational partners, which would have more likely supported intervention engagement.

In Partridge, staff advised they took a more proactive ethos to building parent-school relationships, which was supported by the stable, close-knit community students came from. This was demonstrated through a multigenerational pattern of membership, where teachers

had taught students' parents and former students returned as teachers. It was also apparent through the community pride:

> *My first impression of Partridge Comprehensive is based on the site and entrance where there is a homage to the historical influence of coal mining. … They have displays showing how (local area) and the surrounding areas were based on a number of mines and I think this school is located on an old mining shaft. This sense of history does give the school a more personal feeling.*
>
> *(Research Diary)*

This closeness allowed some proactive engagement with parents, such as surveys and them contributing to policies such as the Positive Relationships Policy. Although this was limited as engagement more often focused on reacting once a problem had occurred.

> *RES: So, I deal with a lot of behaviour um but then within that, obviously Wellbeing is another massive side of my job. Um so pastoral support, um working with parents, um, working with targeted pupil, pupils obviously you know, I, I cover quite a large area of the school but I'd say I only work with maybe twenty per cent within that year, those year groups, because they're the ones who need the support.*
>
> *(Partridge Sta3)*

Therefore, both schools had tried to engage proactively with parents about wellbeing, but there was a tendency for engagement to be reactive to wellbeing issues, and in Rowland, parents were more reluctance to even engage in this manner. The Rowland LT summarised this issue well:

> *RES: I think that if we could get to a stage whereas a school, even outside of this project, that we could get a parental focus group, I work with the PTA, which you know, Parent Teacher Association.*
> *INT: Okay.*
> *RES: If we could have a group that's similar to that, that was just working on um, improving the school. So like a focus group, then I think this would have been a really good thing to introduce that forum. But unfortunately, parents will only engage if they think it is specifically impacting on their child. And again unfortunately, they are more likely to engage if they want to talk about something negative, rather than trying to come in to do something positive.*
>
> *(Rowland LT)*

These issues highlight a somewhat reductionist understanding of parental engagement from schools and a lack of appreciation on behalf of parents of their role in tackling school wellbeing. Working with parallel systems is a wider issue than this co-production intervention but does need to be contemplated in future iterations. The next section will focus on implementation differences between schools.

6.2.2 Differences in Implementation for the Two Schools

The two (20%) descriptors of fidelity which were implemented differently by schools were to 'involve at least 50% of the RAG members in three or more meetings' and 'Get SMT to commit to taking some actions forward'. For these, Partridge gained two high fidelity statuses and Rowland two low fidelity statuses. Differences are explained through the two analytical themes of the embeddedness of the intervention in school subsystems and the intervention coupling with the existing baseline contexts (shown in Table 19, which plotted contextual themes against fidelity descriptors).

6.2.2.1 Embeddedness of the Intervention

As outlined earlier, when approached, both schools wanted to make wellbeing change with students. In Rowland, the researcher's credentials, and the link to SHRN were sufficient to attribute credibility to the intervention; however, in Partridge, the Headteacher wanted to meet the researcher and needed further qualifying evidence:

> *(Headteacher) came in but only had 5 minutes to spare as had another meeting. He just asked me for a synopsis of the project and why they should be involved. I acknowledged the research literature advising that similar projects have been done in Australia, Canada and England but not in Wales, so I am wanting to try a process of developing wellbeing plans with schools that includes both the students and the staff. I advised that I wanted to do photography as a means for the students to express themselves which piqued his interest. The Headteacher wanted to have more details of the research in this area before committing so I said I would send over them and my DBS.*
>
> <div align="right">

(Research Diary)</div>

As intervention implementation progressed, these differences in approaches continued demonstrated by how the school embedded the intervention. In Rowland, this was characterised by an intensiveness of the LT as a key agent who was deeply engaged in all activities due to her drive and passion for supporting wellbeing. She took an activist approach exemplified by her quick response to take part, to signing the research agreement, and commencing student recruitment expediting the intervention start (Appendix S). When interviewing other school members, they advised this was characteristic of her nature and she was a dedicated, hardworking organisational linchpin:

> *RES: Err, I, I think because the Senior Leadership have got so much to do, they can't, you know, (LT), I don't know how she does it. But, the other Senior Leadership, can't seem to do as much as, as (LT) does.*
> *INT: Yeah.*

RES: Yeah um, so, so we need to be looking at err, they need to be enthusiastic about the wellbeing err and they need to be completely understanding of what, what wellbeing means and what wellbeing is, um, and they, they just need to be, they need to have a good relationship with the kids, so that the kids know, "Oh (LT) going to be there".
INT: So you think having (LT) facilitated it because of the relationships?
RES: Yeah definitely, definitely because the, all the kids in the school know they can go and talk to (LT), um. and they know they can say whatever and it won't go any further. And they can speak their mind and she'll help them with any issues that they've got. So having someone like that, who understands the kids, who has time for the kids, even if she doesn't have time for the kids, she will make time for the kids.

(Rowland Sta2)

As shown, having this key actor on-board facilitated some descriptors of fidelity, notably the recruitment of students and the undertaking of meeting tasks. Also, her initiative and time to meet with the researcher to plan how she could support the project was invaluable.

However, this centralised intervention control was a barrier to other descriptors of fidelity in two ways. Firstly, there was a lack of co-operation from the teaching staff, which was shown through their failings to pass students messages about intervention activities. Students noted this as very frustrating:

RES: Yeah, obviously yeah it's hard to get people, and not everyone gets the message, um.

(Rowland Stu2)

Secondly, there was a lack of intervention understanding and engagement from the rest of the SMT. For example, the headteacher never engaged with the researcher or project, even missing the end of project SMT meeting. Also, other SMT members in attendance did not understand the project, had not read the wellbeing plan, and constantly referred questions to the LT. Resultingly, the SMT did not commit to any actions in the wellbeing plan. Staff linked this to the baseline school context where they reported poor 'buy-in' for wellbeing and a reliance on the LT to attend to anything associated with wellbeing. The LT reflected that limiting the spread of the intervention throughout the different school subsystems was a sticking point she wished she had addressed:

RES: And perhaps maybe even have met with SMT [involved] early on as well. So they are really sort of clear on the things that can feed into our School Improvement Plan. Because the action plan will do that.
INT: Yeah.
RES: But I think if they had been on board from day one. They would perhaps have just been, we, we maybe have talked about it more in meetings.

(Rowland LT)

Whereas in Partridge Comprehensive, the embedding of the intervention was typified by an extensiveness throughout the school subsystems. This was highlighted by the diffusion of the intervention at the highest level of the Headteacher even before the school committed to take part. Initially this appeared problematic because the LT was irresolute and could not make autonomous decisions which led to a slow project start (see project timeline, Appendix S) however, after the initial meeting the headteacher vehemently supported the project:

> RES: So I took it (the project information) to (headteacher), he said it's a good idea, invited you in for a chat …… we had a chat and then if you remember I said I'm going to go and get him now because I think it's brilliant …… and so his thoughts straightaway on talking to you, he was really ...he was really impressed by you. No, he was seriously ...
> INT: Thank you.
> RES: ... the way you sort of delivered it and proposed it, he was really impressed by it ...
> INT: Okay, brilliant.
> RES: He has been really supportive and basically it was look (LT name), you're in charge of this, erm, you make sure that everyone's properly and make sure ... that (the researcher's) given all the support that she needs ...
>
> (Partridge LT)

He often enquired about progress and was asking about when project results would be sent to the SMT. This increased the system readiness to consider the RAG's plan actions which resulted in the SMT committing to three, fulfilling the adoption fidelity descriptor.

Further, the Partridge LT harnessed a routine activity setting in the form of a weekly staff briefing to give a project synopsis at the beginning of the year. This allowed the intervention to permeate even further into the context as it informed those within the subsystem of the teaching faculties of the intervention presence and their duty to release students from lessons.

This diffusion of information in Partridge was accompanied by a diffusion of intervention responsibility which improved intervention success. From initiation, delivery was supported by other members of the school wellbeing team. For example, both the Emerging Leader for Attendance and Wellbeing, and the Key Stage 4 Wellbeing and Attendance Manager (see figure 6) supported the researcher to conduct recruitment assemblies. This shared responsibility typified the routine work format of the wellbeing structures:

> RES: Now there's a lot of dovetailing going on there and there's a lot of grey area about who's in charge of what… but we do tend to work together. I'm, my role really should be just the PSE part of it and how the kids are dealt, er, are taught that within lesson time or curriculum time …

<div align="right">*(Partridge LT)*</div>

Consequently, the intervention further saturated the context in Partridge, which was most evident when the LT advised he was leaving the school, but the dispersed responsibility for the project meant the plan was still partially adopted.

Therefore, there were differences in how the intervention embedded into the school contexts. Within Rowland, this was an intensive, centralised control situated around one key actor, whereas Partridge showed a more extensive, dispersed spread of information and responsibility. These different approaches accounted for variance in the adoption fidelity descriptor, as they led to a washing away of the wellbeing plan actions in the former school and a lasting footprint in the latter as commitment to actions was gained.

6.2.2.2 Intervention coupling with the existing baseline contexts

Additionally, in both schools, the LTs recommended they harness wellbeing team members to be on RAGs because, as shown below, these were perceived as the right staff with their vested interest in wellbeing but also as they would coordinate and deliver the wellbeing activities co-produced:

RES: I think you had the right staff because of, you know when we talk about staff workload and time commitments ...
INT: Yeah.
RES: ... you had the right people in here from the wellbeing team and from (youth worker)
INT: Yeah.
RES: ... you had the people who could dedicate their time to that and the people who will influence this now and the plan going forward.
<div align="right">*(Partridge Sta2)*</div>

The preceding section demonstrated that Partridge wellbeing staff made concerted efforts to shift their priorities by engaging in and supporting the intervention. This was also highlighted in section 6.1.8 as the RAG had a small but stable staff membership. Further, these staff were able to easily couple the intervention into a system which already attended to student involvement and had a focus on wellbeing. For example, student involvement was a

visible agenda with most RAG students knowing about the School Council, the annual Wellbeing survey used for internal monitoring, and the termly pupil feedback focus groups.

Also, all school stakeholders and the school's Positive Relationships Policy detailed the whole-school approach to student wellbeing taken through restorative work. All staff were trained in this, and some students were peer mediators.

> RES: We were part of the restorative approaches in Wales, erm, team, so they came in, all of our staff were trained… on restorative practices, so that, for us, we went through the training and that's finished now, that was finished in the Authority in March… but I'm trained now to train new staff
> INT: Okay.
> RES: … so as, that's something we'll keep going. The main way that's used is it was used to inform our behaviour policy… and the way in which we look at sanctions in particular and then it does form the way we deal with like bullying and things like that, we use the restorative approaches.
>
> *(Partridge Sta2)*

This ethos was underpinned by proactively building positive relationships with all school members, which resulted, from the student perspective, in them feeling cared about, safe, and able to ask for help:

> RES: Yeah, 'cos like our teachers really care about us. If they see us, if they see us like not normal, like I was looking angry, upset or not like "right", they'll just immediately talk to you, without, without thinking about it, they'll just click, like a click of the finger, they'll talk to you and it's really good for that, 'cos like students get more friendship with teachers doing that. Talking about the problems in their life with teachers and like support teachers …it really helps them … to get it off them and just get people to know what's going on with them and what's going on in their life.
>
> *(Partridge Stu6)*

This approach aligned to a more progressive educational ideology which considered the child holistically. This was evident by the availability of space to provide outdoor classrooms, as well as providing educational experiences through trips and extra-curricular courses such as construction. Students also gave examples of the Youth Engagement Officer allowing them to plan and book activities for the afterschool, holiday, and youth provision she provided, to develop their soft skills. Therefore, the intervention mapped well onto a culture which already supported student involvement and wellbeing.

Contrastingly, in Rowland, there was not an effective mechanism to involve students in decision-making. The LT advised 'student voice' permeated lots of different school business such as appointing staff and the School Council. From her own description, the School Council did not function as advised in the Welsh Regulations (2005) with an elected membership with formal roles but was fluid so that anyone could attend any meeting. Unfortunately, other staff, including the SMT, did not know about the School Council work, and many students simply did not know it existed. Similarly, students did not speak favourably about the school's baseline wellbeing context, as there was a clear separation between education and wellbeing. For example:

> INT: *Do you think this, err this school were interested in student wellbeing?*
> RES: *It's fifty, fifty really.*
> INT: *Go on explain that.*
> RES: *Like some teachers, like the Wellbeing Officers, they care about wellbeing. But I don't, sometimes you don't feel like the classroom teachers care about it, they only care about getting their lessons done. And not their students, like how they feel in there [classes].*
>
> *(Rowland Stu7)*

This view was also shared by the wellbeing staff:

> RES: *Um so unfortunately, I think the wellbeing side of it was left to the pastoral teams, um. And then it didn't go any further than that unfortunately.*
> INT: *Yeah okay, so it's very much one or two individuals within the school, who take on those roles um?*
> RES: *Yeah, yeah definitely, err (LT name) is, is the biggest kind of level in that. And, and she's, she's great, but it was a fight, it was a very difficult battle last year to get other staff on board with, with the kind of, with the wellbeing aims that we were trying to introduce.*
> INT: *Okay, okay alright um what do you mean it was difficult?*
> RES: *People not attending stuff, people not wanting to do more to look out for the wellbeing of the kids. Um and I think that was the, the biggest issue was the staff were, there's so much pressure on staff.*
>
> *(Rowland Sta2)*

The LT agreed there was less 'buy-in' for wellbeing than in her prior schools. She believed some staff felt the students they catered for did not need support as they came from a *'leafy suburb'* and just coasted through education. As such, it was difficult for the wellbeing team to get teaching staff involved in supporting wellbeing.

> RES: *I think perhaps you know, we are considered to be quite an affluent school. So obviously the focus tends to be on examinations, lessons, etc., because we've got quite a high number of students that might sit within that A star, to C bracket.*
> INT: *Okay.*

> *RES: Schools that might have more lower ability students, actually place far more focus on ensuring you're developing the kind of whole child if you like. Because there's a greater need for developing the skills, you know, being that individual that, that helps them to um kind of survive in the outside world.*
> *INT: Yeah.*
> *RES: And those types of schools might be able to provide more of a focus on that project and have more flexibility with staff, they might even have more staff, because of, of the needs within the school.*
>
> <div align="right">*(Rowland LT)*</div>

As shown by the quotes above, the pressures for students to achieve and staff to facilitate this achievement was high and revealed the conservative educational ideology that underpinned the school. Staff thought this pressure came from the SMT but was passed down from the Welsh Government and the Inspectorate. Other examples of this underpinning ideology were found. First, there was a concentration on standards; for example, the researcher repeatedly witnessed students being reprimanded about uniforms and conduct. Secondly, the researcher noted the environmental stimuli concentrated on student achievement:

> *The reception is really small and most of the students don't pass through it but go around the front of the building. It doesn't feel very personalised even though I notice that it is full of school awards and commendations. There are mainly careers magazines aimed at students. I read one which focused on the top ten finance jobs globally.*
>
> <div align="right">*(Research Diary)*</div>

Lastly, there was a clear preference for preserving the traditional GCSE qualifications, even though a newly implemented non-mainstream pathway for students did exist, it was infrequently offered. This exposed the evolving nature of the school, as it was clear since the LT had started four years prior, she was attempting to progress the ideology to concentrate on students more holistically. Although this change had not been fully realised, so the intervention only served to expose the lack of focus on wellbeing.

This was most clearly shown with the two Directors of Key Stage 3 and 4 who signed consent forms to be part of the intervention but neither attended a meeting. The LT had accommodated them through ensuring the first two group meetings coincided with free times in their diaries. Their non-attendance was noticed by students and other staff:

> *RES: Yeah, we tried to get (KS4WD), yeah, we did.*
> *INT: Yeah, (KS4WD) and (KS3WD) didn't we?*

RES: (KS4WD) yeah but he was too busy for us. I don't think he could be bothered to come. Because when I went to see him, he was really, he was really, he wasn't very nice.

INT: Oh, because you went to ask him [to attend meeting] didn't you?

RES: I asked him to come, but he was like, he wasn't the nicest person about it, I said "Oh we were wondering if you could come?", he was like "I'm busy, so I can't, sorry", like that was just like, oh you could just speak a bit nicely......

INT: Yeah, but you don't think (KS4WD), was interested?

RES: I think he was, but I just didn't think he, I think he, he has priorities. Even it was about what his job wellbeing, but he didn't seem to really care that he missed, because he didn't even show up to the other meetings as well like, that he could have come to, because there are more than just that one meeting that he could have come to.

<div align="right">

(Rowland Stu7).

</div>

And was a clear frustration for the LT:

(KS4WD), who (student RAG member) went to retrieve, was not in attendance as he said he thought it was not for him. (LT) checked the email she had sent, and it clearly was for him. After the meeting (the LT) commented that she did not think that (KS4WD) was going to engage. She did not give a reason for this but simply rolled her eyes as she made the comment.

<div align="right">

(Rowland Meeting 1 Observation)

</div>

Consequently, the LT drew in two wellbeing officers to take part after the initial RAG meeting. As shown in section 6.1.9, as partially due to their late recruitment to the intervention, the wellbeing officers' engagement was minimal, with them attending only 50% of the meetings. Also, when interviewed, both had little understanding of the intervention.

6.3   Summary

The chapter commenced by showing that eight fidelity descriptors were assessed as the same for schools. Overall, these functions were delivered with high fidelity due to the alignment of the intervention with the supra system-imposed duties and the schools' needs in terms of addressing wellbeing through student voice. Although delivery was adapted, functional fidelity was maintained, as schools successfully realigned four synergistic school resources in the LT and their harnessing of routine activity settings, information systems, and space; and the intervention was delivered flexibly to accommodate school priorities and functioning. The low fidelity finding of the inability to engage with parallel systems is an area, meanwhile, in need of further work in future interventions. The two differences in implementation fidelity were accounted for by the differences in intervention embeddedness and coupling with the baseline context. The intensive, centralised embedding and

unfavourable conditions for student wellbeing and voice in Rowland were contrasted to Partridge's extensive, dispersed spread of intervention information and responsibility and cultural alignment with the two intervention tenets. As the intervention was not set up to disrupt pre-intervention contexts, when introduced into the unfavourable context of Rowland the intervention didn't flourish. These contextual conditions will be further considered in the following two chapters to understand how these different contexts influenced the upstream intervention mechanisms and the social validity of plans.

7 Chapter 7: The Upstream Mechanisms of Shared Decision-Making

This chapter presents results to assess the intervention's hypothesised causal pathways in terms of the upstream mechanisms of shared decision-making. It reports how the resources and activity forms, the participants' reasoning and responses, and, as elaborated in the prior chapter, the contextual conditions affected the triggering and functioning of the hypothesised mechanisms. It seeks to answer the following research questions:

Did the mechanisms of change work as hypothesised?

How were these affected by the resources and activities provided, participants' reasoning and responses, and contextual conditions?

It commences in section 7.1 with a table that outlines the mechanisms and how they are hypothesised to work to orientate the reader to the chapter. It continues in section 7.2 which considers whether the overall mechanism of empowerment and being part of shared decision-making was activated, how it functioned, and what influenced it. This structure is followed for the three antecedant sub-mechanisms which were postulated to contribute to the overall mechanism. Section 7.3 is focused on whether RAG (Research Action Group) diversity and representititveness was achieved and what affected it. Section 7.4 focuses on whether group development tasks were necessary to support RAGs to build good relationships to support decision-making. While section 7.5 concentrates on whether RAGs were informed about school wellbeing to enable them to effectively undertake problem-setting and solving decision-making. It concludes in section 7.6 by discussing the unintended consequences which occurred due to aligning the intervention to student voice. Throughout, it draws on researcher and RAG members' accounts obtained through the research diary, observations, and the RAG survey and interviews.

7.1 Overview of Mechanisms

Table 20 gives an overview of the upstream mechanisms hypothesised for school-based co-production. As shown in section 4.4.2.1, these mechanisms were produced in phase 1 as the systematic review showed underdeveloped pathways for shared decision-making in current co-production studies; with shared decision-making being conceived as the ability and conditions needed for RAGs to make decisions as a group. Mechanisms were produced through combining the systematic review finding that RAG diversity allowed all school

voices to be represented (Bonell et al. 2015; Fletcher et al. 2015), extrapolating to the group setting the theoretical competencies needed to make health decisions (Simovska and Jensen 2008), and research that demonstrated co-production's relational and emotional elements in the forms of developing good relationships and feeling empowered and included in decision-making (Clarke et al. 2019). Section 5.3.3, in the phase 2 methodology chapter, operationalises the assessment of mechanisms which includes quantitative judgements and qualitative data about whether mechanisms were triggered and how. In this chapter, the results start by considering the overall mechanism of empowerment before the sub-mechanisms.

Table 20: Mechanisms and how they are hypothesised to work

Mechanisms	Hypothesised Working
Diversity and Representativeness	Having a diverse set of members will allow all opinions in the school to be represented during shared decision-making.
Group Development	Having group development tasks will allow all RAG members to build good relationships to support shared decision-making.
Problem-Setting and Solving	Having resources and group activities will support the group to feel informed about wellbeing in their school so they can make decisions.
Empowerment and Opportunity to Participate	All of the above should: increase feelings of empowerment and provide opportunities for RAG members to share decision-making.

7.2   Feeling Empowered and Involved in Shared Decision-Making

This section shows the mechanism was activated as expected by increasing feelings of empowerment and providing the opportunity for RAG members to share decision-making, resulting in the anticipated output of school wellbeing plans. This was achieved through the resources provided in terms of the external facilitator and a structured co-production process.

As shown in Table 21, the RAG survey results demonstrated 100.0 % of Rowland and 80.0% of Partridge members felt they had their say during co-production, and 100.0% of Rowland and 93.3% of Partridge stakeholders thought it was a good way to support students and staff to be involved in school decision-making. Qualitative survey responses and interviews also provided evidence of members' feeling project ownership, and content with the student-centred approach taken. Students felt able and willing to speak during meetings and to raise issues, and staff respected their views:

INT: So, what do you think were the most important or the integral things to make this project work?
RES: Giving the young people a voice.
INT: Okay.
RES: Giving them opportunity to speak about their school in a positive and a negative light, like... I was on the table where, erm, I created an outdoor chess area in the school and a young boy on the group said it's like our chess area, it's never used, it's crap, whatever ...
INT: Um.
RES: ... erm, like I didn't judge him or didn't challenge him for that ... but that was his opinion and ...but yeah, giving, we allowed them to express what they thought of the school.

(Partridge Sta4)

Table 21: RAG Survey Responses for Participation and Shared Decision-Making

Mechanisms	Questions	**Responses**	RH N (%)	PC N (%)
PARTICIPATION & SHARED DECISION-MAKING	Did all action members have their say throughout the process?	Yes	11 (100.0)	12 (80.0)
		No	0 (0.0)	2 (13.3)
		Not Sure	0 (0.0)	1 (6.7)
	Overall, do you think this project was a good way to ensure that students and staff contribute to decision-making at this school?	Yes	11 (100.0)	14 (93.3)
		No	0 (0.0)	0 (0.0)
		Not Sure	0 (0.0)	1 (6.7)
EXTERNAL SUPPORT	Was the researcher useful in ensuring that all action group members could have their say?	Very useful	10 (90.9)	13 (86.6)
		Quite useful	1 (9.1)	1 (6.7)
		Not useful	0 (0.0)	1 (6.7)
		Not at all useful	0 (0.0)	0 (0.0)
	Was the researcher useful in supporting the overall process?	Very useful	9 (81.8)	12 (80.0)
		Quite useful	2 (18.1)	3 (20.0)
		Not useful	0 (0.0)	0 (0.0)
		Not at all useful	0 (0.0)	0 (0.0)

Not all questions were answered by all participants.

Staff differentiated this process from usual practice as it afforded an opportunity to allow students to affect school decision-making regarding wellbeing.

RES: It's always good to get the student feedback, because they're the ones who are going to be you know, the sort of agents of this policy.
INT: Yeah.

> *RES:*   *So it, it was good from that point of view you know and it was, for me it was nice to be part of something positive in that sense, um.*
> *INT:*   *Okay.*
> *RES:*   *Like we said with, with the role, it's very, you get caught up in a lot of behaviour issues, you get caught up in Safeguarding and it's quite err, it's a battle all the time, you know, so, so to be part of this and to actually listen to, to pupils and um, get their feedback on what they think is important and what they think we should be doing, um it's always good to hear from them, so yeah.*
>
> <div align="right">(Partridge Sta3)</div>

In accounting for mechanism activation, staff and students in both schools thought the resources of the facilitator and a well-structured process, with the end goal of an action plan, guided the shared decision-making.

> *RES:*   *... right and so yeah, there's blue sky thinking of where we're going to go, what are we going to do next year with this action plan and then we went from having lots of photos, lots of ideas ...*
> *INT:*   *Yeah.*
> *RES:*   *... to suddenly filtering it down to there's your action plan ... there it is and it was like wow. It worked really well.*
> *INT:*   *Yeah.*
> *RES:*   *Well it did, it's just that I, and it was, we did it, we knew what we were doing, but it was done in such a way that it wasn't like, oh, God, we've got to come up with this now, oh, we've got to do this, oh, we're going to end up with an action plan, how we going to do that, suddenly it was just there.*
>
> <div align="right">(Partridge LT)</div>

For the external researcher, this was backed up by the survey results (Table 21) that showed most participants thought they were very useful in supporting them to have their say (Rowland = 81.8%; Partridge=80.0%) and the overall process (Rowland = 90.9%; Partridge=86.6%). Staff liked the intervention was organised and run by an external person as they could not dedicate the time needed to do this, particularly in the photography element.

> *RES:*   *Um but obviously the way that you as well have planned it out, it's been really well planned, you know, we've obviously been able to communicate well, and you've been able to continue with a lot of the research and the interviews of the students. Um, just by using the space here at the school.*
> *INT:*   *Yeah, yeah.*
> *RES:*   *Which has allowed me to just continue with my own role, knowing that some really positive work is going on with our kids as well. So you know, I found that a real benefit to us.*
> *INT:*   *Oh right.*
> *RES:*   *Um, because yeah because it has, you know, I haven't had to be tied to it, twenty-four seven. Um even though I've been overseeing it and I've been involved for much of the project. You know, you've been an amazing resource to us as a school, so that's been great.*
>
> <div align="right">(Rowland LT)</div>

Having an external facilitator also increased students' trust that their ideas would be considered by the school. It was imperative this person did not have a vested school interest and could act as an impartial go-between for students and staff. Also, stakeholders' thought the facilitator built a good relationship with them, worked well with students, and explained the overall process and individual meeting tasks well.

> RES: Erm I thought it was really good because erm, you told us what to do and like gave us like clear instructions of what we had to do with the different sheets and if we didn't understand anything and none of the other group understood it we could ask you and you'd always explain it again. You were very calm and really nice to everyone which I thought was really good.
>
> *(Rowland Stu4)*

As shown above, the clear structure also allowed students to concentrate on voicing their opinions in tasks. Structured but informal meetings were conducive to supporting students because they felt safe to speak out. When asked, many students advised they would not change anything about the intervention or the meetings:

> INT: What would you say to your friends about what you would like to change about the project, was there things you didn't enjoy?
> RES: I liked most, actually I did actually like it I wouldn't probably change any of it
>
> *(Partridge Stu6)*

They also thought the clear structure and end goal was a feature which stood the intervention apart from the School Council as these initiatives often omitted a concrete outcome.

Minor issues were linked to resources and activities though. The first was associated with intervention momentum, partially explained in the prior chapter because flexibility was needed to align with school priorities and functions. However, the intervention's slower pace was also attributed to having a sole researcher to complete labour-intensive functions. For example, 22 individual photography sessions were run and analysed to produce the school theme narratives. The second linked to group meeting structure where some students thought having longer or more frequent meetings would ensure all ideas were given full consideration, whereas others did not want to miss more lessons. Irrespective, neither issue was significant enough to affect the ability of RAGs to shared decision-making.

Overall, participants thought shared decision-making was activated through the external facilitator and a clear, structured co-production process conducive to empowerment. Minor issues were raised but none affected decision-making, and each school achieved the output of producing a wellbeing plan. However, the intervention's mechanistic functioning was a

dynamic and fluctuating domain which will be explored in the following sections linked to the three antecedent sub-mechanisms.

7.3   Involving all Opinions in Shared Decision-Making.

To ensure all viewpoints were considered during decision-making it was hypothesised that RAGs needed to be diverse and representative of the school population. Whilst there was some evidence of RAG diversity, this was tempered for staff involvement by the baseline 'buy-in' for wellbeing. For students, intervention responses were disparate, reflecting student positions in school systems, and their desire to take part in photography.

Table 22: RAG Survey Responses for Recruitment and Diversity

Mechanisms	Questions	Responses	RH N (%)	PC N (%)
RECRUITMENT AND DIVERSITY	Did the action group include students from a range of different backgrounds?	Very good range	9 (81.8)	6 (40.0)
		Quite a good range	2 (18.2)	8 (53.3)
		Not a good range	0 (0.0)	1 (6.7)
		Not a good range at all	0 (0.0)	0 (0.0)
	Did the action group include a range of different staff from across the school	Very good range	2 (18.2)	8 (53.3)
		Quite a good range	8 (72.7)	7 (46.7)
		Not a good range	1 (9.1)	0 (0.0)
		Not a good range at all	0 (0.0)	0 (0.0)

Not all questions were answered by all participants.

RAG surveys showed (Table 22) most participants thought RAG composition involved a range of staff and student backgrounds. There were differences by school in staff diversity ratings though, as 53.3% of Partridge members thought the range was very good whereas 72.7% in Rowland thought the range was only quite good. Partridge stakeholders thought staff diversity was achieved as their small but stable composition included wellbeing staff with non-teaching and partial teaching roles, as well as an external YEO who had no focus on formal educational priorities. The LT easily scheduled meetings around part-time teaching roles, but omission of full-time teachers without a specific wellbeing function was considered idealistic but not harmonious with educational priorities:

> RES: It's not the, I don't think it's the cost of the cover and it's not actually getting cover it's the fact that if you're covering, if you're being covered, I mean someone else is taking your class ...
> INT: Yeah.
> RES: ... and this is going to sound very sort of like, but those kids are here to be taught by subject specialists ...
> INT: Yes, okay.
> RES: ... and that's sort of my philosophy if you like, I don't like being covered myself because I'm not teaching the kids that should be taught.
>
> *(Partridge LT)*

Students emphasised the correct staff were recruited though as they listened to them and contributed to discussions supporting the mechanism of decision-making. Staff also thought they were appropriate as they would coordinate the resultant wellbeing plans.

Whereas in Rowland stakeholders noted the omission of any timetabled teachers, with students realising scheduling these individuals was desirable but difficult:

> RES: Maybe get (teacher name 1) or (teacher name 2) to come along and or.
> INT: Do you think they would have been more?
> RES: Because they would have, they probably, (teacher name 2) would be hard, because she is an actual teacher, for P.E.
>
> *(Rowland Stu7)*

All stakeholders, including the SMT, agreed having teaching staff was important to capture all school opinions. The SMT justified this omission through the lack of financial intervention resources to cover teaching, compounded by the recent school budget cuts. Although, this was symptomatic of the lack of wellbeing focus in Rowland (explored section 6.2.2.2), which meant the SMT were unwilling to redistribute resources. This was also evidenced by the LT scheduling meetings around the two Wellbeing Directors' teaching yet still neither attended.

Regarding student diversity, RAG survey data were positive but, again, contextually different. In Rowland, nine (81.8%) RAG members stated the range of students was very good, whereas eight RAG members (53.3%) thought it was only quite good in Partridge. The interview data overall elaborated group sizes were good, and a range of ages and genders were achieved allowing a range of experiences and views to be taken into consideration, as hypothesised. Staff thought RAGs were diverse because certain student groups were represented such as Additional Learning Needs (ALN), more able and talented (MAT), and introverted students. Participants also thought students' ethnicities, friendship groups, and attainment levels varied, for example:

> *RES: I think we were all quite different in like what we like did around the school and I think we all sort of had like different types of friendship groups as well, we sort of got like all different sides of the like certain thing we were talking about.*
> *INT: Okay yeah. So, you have different friendship groups?*
> *RES: Yeah, there's sort of like lots of people like to like categorise people and they're like these are the popular girls, these are like all the smart people and it's like I don't usually like it when people do it but it's just the way it is.*

<div align="right">

(Partridge Stu4)

</div>

Positive student responses were regularly attributed to a desire to take part in photography. For example, photography was regarded as a novel, fun, acceptable activity, which drove students to nominate themselves.

> *RES: I only like really vaguely remember [the assembly] but I remember you said about like what was going to be happening and I think the thing that actually made me want to do it was like how you said about the photos and being able to like show all things around the school.*
> *INT: Okay.*
> *RES: Like that make you like happy or sad so then when I heard about it I sort of like thought about it, I thought like is this something I want to do and then I put my name down.*

<div align="right">

(Partridge Stu4)

</div>

Also, the researcher and both LTs noted students paid more attention in recruitment activities when photography was introduced.

Positive student responses were also a reflection of their positions in the school systems. For most recruited RAG students, they felt able to nominate themselves and thought they were suitable because they had experience being involved in primary eco-councils, school councils, peer mediators, and LA forums etc. This positioned them as responsible, eager students and these initiatives allowed them to build their confidence and communication skills to undertake group roles.

> *RES: I think that being part of the diversity group helped me want to do this because it's on about wellbeing and making sure that pupils have a voice which is what we do in the diversity group as well, so it'll help me get views across what other people think.*

<div align="right">

(Rowland Stu6)

</div>

Having the 'usual suspects' is often a critique of co-production projects, but the five Partridge students who were concurrently involved in the intervention and the school council did not perceive this as problematic. They, and others, felt this made them familiar with school

issues, practiced in objectively evaluating their school, and representative as students already approached them with issues. Although at least two students said they had not done anything like this before and decided to take part providing they could work together during photography and have a paired interview post co-production.

Further, there were subsets of students who did not take part because of their positions in the school. As reported in sections 6.1.2 and 6.1.9, older students were difficult to recruit and retain because the precedence of education over the intervention grew with progression through the school. As stakeholders' thought student wellbeing issues varied with age, how best to accommodate older students needs further exploration. Also, particularly in Partridge, staff and students thought 'less engaged' and 'struggling' students were omitted.

> *RES: I think the students who were involved weren't the students who are actually going to be struggling the most, but the year nines especially, the people most likely involved, I don't think that they would be the ones that would have been chosen to do it, I don't think they would have been struggling. I think they would ... the teachers would be more likely to be biased towards the students who they know would put effort into it, rather than the students who just wouldn't.*
>
> *(Partridge Stu9)*

This led students to suggest that recruitment should target those in varying bandings, as they have different wellbeing experiences and viewpoints which need to be represented.

This was explained by a more general apathetic intervention response, which was more considerable for those positioned as 'disengaged'. Only nine RAG students (Rowland =3; Partridge =6) nominated themselves, with five students from each school becoming involved once they had been approached by school staff; an implementation adaptation to the preferred recruitment form. This apathy was accounted for in three main ways. First, students did not think they were the *'right'* students. Also, noted when the Partridge LT was reluctant to let an *'immature'* student take part; and when the Rowland LT qualified student suitability, e.g. *'he is an ideal candidate as spends a lot of time at wellbeing'*. Secondly, student reluctance was attributed to the perception of such groups as *'uncool',* with some RAG members hiding their involvement so others did not think they were a *'spoof'*. Lastly, during recruitment there were several student anonymity questions linked to staff knowing what issues they raised as well as two parental enquiries concerning confidentiality which may have deterred those not aware of the ethical procedures followed.

This apathetic response did lead to a change in recruitment strategies. An equality strategy through talks in assembly was intended so all students would be informed and, in theory, could nominate themselves leading to a diverse range of students. However, recruiting students through targeting was explained as a necessary equity strategy because students didn't start from an equal position to be able to nominate themselves. As explained by the last quote, this equity strategy captured the students which doubted their eligibility but not the latter 'struggling' type. How to do this was discussed with Partridge staff:

> RES: It's a difficult one because we've asked them to volunteer... and the pupils who are already struggling and have already got a lot on are not going to want to commit to... something extra ...
> INT: Yeah, of course, yeah.
> RES: ... and that's something, I don't know if we sell it a little bit differently, set up the stall a bit differently ...in that, it depends if, you know if we wanted to target these pupils, maybe if there was something specific relating to them, you know if they were.
> INT: Okay.
> RES: I'm not sure how we'd go about doing that, but for them to understand this is not an added pressure of asking questions, but it's something that actually might help you in the long run.
>
> *(Partridge Sta2)*

This sub-mechanism focused on involving all opinions through having diverse and representative RAGs. Staff diversity reflected the baseline 'buy-in' for wellbeing, resulting in Rowland omitting teaching staff but Partridge recruiting those whose roles overlapped wellbeing and teaching. Student responses reflected their desire to do photography and their position in school systems. Those with involvement experience were more likely to nominate themselves as this gave them confidence and belief in their ability to undertake intervention roles. Whereas, particularly in Partridge, struggling and less engaged students displayed more intervention apathy, highlighting the need for student recruitment strategies based on equity as well as equality.

7.4 Building Good RAG Relationships to Support Shared Decision-Making

To support the functioning of shared decision-making, it was hypothesised that RAG members needed to build good relationships. This was activated in both RAGs but not through the originally conceived means of the intervention development activities. Instead, this developed organically as members had pre-existing ties and through participants routinely interacting as the intervention progressed.

When assessing group functioning, the researcher observations found all Rowland meetings were categorised as 'performing' using Tuckman's (1965) model of group development, representing a stage where structural issues had been resolved, and the group structure is supportive of the group aims. Within Partridge three meetings were also classed as 'performing' with only the first meeting assessed as 'norming'. This was due to one disruptive student trying to move the group off task, who eventually gave up as other members ignored them. This demonstrated that from very early on positive relationships existed within the RAGs. Additionally, this was despite the adaptations to group development activities (section 6.1.5), needed to prioritise problem-setting and problem-solving, and due to meeting time constraints, and intervention lag (see section 6.2.1.2).

Table 23: RAG Survey Responses for Group Development and Cohesiveness

Functions	Questions	Responses	RH	PC
			N (%)	N (%)
GROUP DEVELOPMENT	Were the group development activities useful in helping you build a relationship with other members?	Very useful	2 (18.2)	7 (46.7)
		Quite useful	7 (63.7)	5 (33.3)
		Not useful	1 (9.1)	3 (20.0)
		Not at all useful	0 (0.0)	0 (0.0)

Not all questions were answered by all participants.

Unsurprisingly, this led to development activities being scored the least useful of all activities by RAG members (Table 23). In Rowland, most respondents thought the development activities run were quite useful (63.7%) to help build relationships, whereas in Partridge the data were more dispersed with no category being favoured by a majority. The interview data showed mixed views too on running ice-breaker games to develop group relationships. Some students wanted more icebreakers to get to know other students better, and it was noted students tended to *'warm up'* quicker to group tasks when an icebreaker had been run. However, staff and other students emphasised they were not necessary to develop groups as members were willing to undertake meeting tasks, were used to working with unknown peers in school, and many had experience of these kinds of involvement groups (shown above).

> RES: *You know, on reflection, we could have had a few kind of ice breaking sessions. Before running to the main part.*
> INT: *Yeah.*

> *RES: But I don't think that that really hindered the project at all, because I think a lot of the young people within the group, they're quite sort of um, clear on, on direction.*
> *INT: Yeah okay.*
> *RES: And sometimes they just want to get stuck in. So I don't think it really had a negative impact, but it's certainly a consideration if you were to do the project again, we could do a series just of kind of warmup workshops.*
>
> *(Rowland LT)*

These mixed views may be due to the implementation failures due to contextual conditions, such as students not receiving messages to attend meetings, so needing locating, and not being able to undertake all group activities run.

Despite this, group cohesion was facilitated through pre-existing links between some of the RAG members. For example, in Rowland students knew each other from primary school or from subject classes, and students knew teachers who had covered lessons and supported transition from primary school. Most of the students had a pre-existing relationship with the LT, who was shown in the preceding chapter as the pinnacle for driving the intervention in this setting.

> *RES: Erm, I consider (LT) to be quite an open teacher and she's got a good way of getting students involved but I didn't know so much about (staff name).*
> *I thought that she would definitely help people to feel like they could say their views and be comfortable as part of that project.*
>
> *(Rowland Stu6)*

Partridge students also knew each other from primary and secondary school, but as the students were from a close-knit community (elaborated section 6.2.1.4), they had multiple external connections too, such as Air Cadets and youth club. These extra pre-existing ties between members may explain the development tasks being perceived as less useful in this school.

In both schools, students thought that having some pre-existing connections supported them to work in the groups initially, but that development of trust and good working relationships had developed organically throughout the co-production activities.

> *INT: Has the way you feel about those staff changed since you've done the work or has it stayed the same?*
> *RES: Yes it has, because with some of the teachers, I never used to, well I did like them, but I didn't really know much of them, but then when this group started, I did really start to like them, um.*
> *INT: Yeah and why do you think that was?*
> *RES: Well because when you're working with a teacher, you build err a teacher, teacher pupil yeah teacher pupil relationship together.*

(Rowland Stu3)

For many, the student-student relationships were task-specific because they acknowledged each other outside of the meetings, but long lasting close friendships wouldn't develop due to informal school rules of not mixing with other year groups. Whereas, for some students, the relationships with staff had moved from a superficial to a more authentic connection.

> RES: *Yeah I did know them, it's just I didn't talk with, erm some of the teachers I guess. I knew, the PE teachers.*
> INT: *(LT)*
> RES: *Yeah that's it. And erm some other ones but some I did get to know more, I guess which was a good thing. Like with the teacher/student relationships, you know it's a bit friendlier I guess.*
> INT: *Okay, so do you think you've developed better relationships with your teachers who've been on the group then?*
> RES: *I guess. Generally (LT) really nice anyway, but you know now that he knows my perspective of stuff it's a bit more personal.*

(Partridge Stu3)

Therefore, even though it was hypothesised development tasks were necessary to establish group cohesion, these only increased acceptability for some participants, as organic development took place due to pre-existing ties and mixing during intervention activities.

7.5   Being Informed about Schools to Support Shared Decision-Making

To make decisions on the school wellbeing problems and activities to redress them, it was postulated RAGs needed to be informed about school wellbeing. However, there were differences in the adequacy of information and activities provided and participant responses to support problem-setting and solving, so they are separated into two subsections below.

7.5.1   Problem-Setting

This section is structured through considering the cooperative approach groups took during prioritisation tasks and how they agreed inclusion criteria to base decision-making. It continues by considering the combined usefulness of the resources of photography, the school statistics, and the group discussions to support this.

Researcher observations detailed in Chapter 6, Table 17 showed that the support needed during the prioritisation task was low for both schools (0.33 out of 2) and engagement was high (RH=1.67; PC=1.33 out of 2). The RAG survey (Table 24) showed from the

participants perspective that most (RH=70.0%; PC=73.3%) felt the prioritisation task was very useful to support priority decision-making.

Table 24: RAG Survey Responses for Problem-Setting

Mechanism		Responses	RH	PC
			N (%)	N (%)
INFORMED ABOUT PROBLEM-SETTING	Were the photography themes useful in helping the action group understand wellbeing in the school?	Very useful	9 (81.8)	11 (78.6)
		Quite useful	2 (18.2)	3 (21.4)
		Not useful	0 (0.0)	0 (0.0)
		Not at all useful	0 (0.0)	0 (0.0)
	Were the statistics useful in helping the action group understand wellbeing in the school?	Very useful	7 (63.6)	7 (46.7)
		Quite useful	4 (36.4)	7 (46.7)
		Not useful	0 (0.0)	1 (6.7)
		Not at all useful	0 (0.0)	0 (0.0)
	Did the prioritisation task help the action group decide on relevant wellbeing topics to tackle?	Very useful	7 (70.0)	11 (73.3)
		Quite useful	3 (30.0)	3 (20.0)
		Not useful	0 (0.0)	1 (6.7)
		Not at all useful	0 (0.0)	0 (0.0)

Not all questions were answered by all participants.

Additionally, interview data showed members thought the ranking exercise was an acceptable, concise, and visual method to support developing priorities, and that most members preferred that this was conducted in small groups affording an equal voice to different RAG demographics (younger and older students and staff). Although prioritisation presented challenges:

> INT: Yeah, okay. Do you remember what you thought of that activity?
> RES: I thought, um … I thought it was a bit challenging.
> INT: Okay, why do you think it was challenging?
> RES: To decide what was from important to least important. I thought it was hard to like, you know what you could prioritise and, in my opinion I think loads of things are quite important and it's hard to choose what's important.
>
> (Partridge Stu7)

There were three challenges expressed. First, the photography developed many wellbeing themes (RH=18; PC=20), and hence a lot of data to get through in the short time allowed. Secondly, as shown in the quote above, participants felt they could make a case for many

themes being of high importance. Lastly, as was intended from having diverse memberships, members had very different ideas and experiences so prioritised different issues.

Nevertheless, these challenges were overcome through the cooperative nature of groups and the development of shared inclusion and exclusion criteria which aided decision-making. For example, problem-setting was particularly emphasised as an intervention point where most members had an opinion and were able to share decision-making within their smaller groups.

> *RES: Yeah, we're like had a go with a pyramid for the top and then we looked at it and then we sorted it all out. Like we ...*
> *INT: So you changed things, kind of ...*
> *RES: Yeah, we were like yeah but this happens more than this and this is like worse than this because, yeah. It was like an English teacher, this is how you answer the exam question, because, because.*
> *INT: Yeah. But did you have any big disagreements or did you kind of get along?*
> *RES: We kind of got along. I think we know what's more important than others. They were all important but it was like yeah but this needs to be sorted before that.*
> *INT: Okay.*
> *RES: This comes first.*
>
> *(Partridge Stu5)*

This shared decision-making was undertaken, on the whole, by group processes that involved compromise, cooperation, and listening to each other; although, the older students in Partridge did talk about one member not listening to others. Groups tended to focus their decision-making time on the top issues and quickly excluded the least important issues:

> *RES: Oh, yeah, okay and then you put your point forward, oh, yeah, okay, I see what you mean and it was interesting that when we started to do this, we said right, okay, let's just put them out and we put them out and then I said, oh, I wanted that one up that end and a few of them went, oh, no, no, no, that's far more important, but then the way we talked about it and justified it ...*
> *INT: Yeah.*
> *RES: ... we finally got to where we wanted especially the top three rows if you like. I don't think we too bothered about the bottom bit ... because we didn't really have time to talk about every single one in detail... but the top three rows we really made sure that we sort of had that.*
>
> *(Partridge Stu1)*

Excluded themes were considered *'not real issues'* that needed change i.e., in both schools students thought the wellbeing support from the wellbeing officers was adequate, and there

were enough after school clubs. Whereas the most important issues were set by both students and staff as those which would affect a larger amount of the school population.

> RES: So it's hard to say what's, you know it's hard to say what's, you know, one, one thing for one person, would be more or less important than another, you know, so it's, some of it was down to interpretation I think.
> INT: Yeah, so do you remember what you based your kind of decisions on in regards to what you put higher up?
> RES: Um I think we based it on how it affected the whole school so I can.
> INT: Okay so it was the effect on the population?
> RES: Yeah I think we based it on like the, the greater good, kind of approach if I remember rightly.
>
> *(Partridge Sta3)*

Predominantly for the staff in Rowland, they were also the issues which they could realistically affect, highlighted as the two student groups put 'sleep' as a top five priority, whilst staff positioned it last because they felt the school had no control over sleep. Consequently, sleep was not one of the top prioritises at Rowland; contrastingly, sleep was a top priority in Partridge (see section 8.2.2 for further discussion).

The usefulness of photography themes to support the understanding of school wellbeing, which in turn supported decision-making, was rated in both schools and by the majority as very high (table 24). In Rowland this was the view of 81.8% of RAG members, with Partridge only being slightly lower at 78.6%. Additionally, as shown in 5.1.7, using photography to develop a full representation of individual student's ideas of wellbeing was given a green status in both schools because all RAG students took part, and student engagement and completeness of photographic datasets was high.

During interviews there were four reasons given to explain why photography supported the production of a full representation of student wellbeing. The foremost reason was that students' thought photography was an acceptable, enjoyable task where they were able to be physically active and it omitted written work, which translated into them wanting to produce the wellbeing themes. Also, being immersed in the school environmental stimulated wellbeing issue ideas, as they discovered what was important whilst walking around.

> RES: Um I think it was a great fun way, you know, it's not just like a boring asking people, it was a good way um and also getting us to like look out for the things that are, about wellbeing in the school, um yeah.
> INT: Okay.
> RES: So you notice it more, once you've done that, you notice more.
> INT: Okay.

> *RES: Oh that's wellbeing, that's wellbeing you know.*
>
> *(Rowland Stu2)*

Moreover, participation was negotiated with students so individual preferences could be accommodated. For example, some students were embarrassed taking photographs with 'present others' who asked questions or were suspicious of this uncommon pedagogic activity, so the researcher gave them lesson time to undertake photography. Also, some students wanted to, and were permitted to, involve peers in taking photos, which they said helped support them to generate wellbeing ideas. Lastly, the photo-elicitation interviews were conducted individually with an external person as students would not have raised some issues with staff members or in a group.

Staff felt that the photographs particularly, but also the summaries, allowed them to see wellbeing through the students' eyes and gave a more personal, affective understanding of how students experienced wellbeing, with some surprising issues raised.

> *RES: I think it gave a really strong sense of what, you know the pupils spend you know five days a week walking around here and they see far more of the school than we do, you know we're confined to our offices and our classrooms most of the time and it was really interesting to see the places that they associated with their wellbeing ...*
> *INT: Yeah.*
> *RES: ... and because it wasn't things that I would think of, you know some of the photos were of places they didn't like to go ...*
> *INT: Yeah, okay.*
> *RES: ... in particular were really interesting ... because it's getting to know why, you know why don't you like going in that area ... for us to be able to do something about it, but that, like I said, if we'd done this through a tick box they're not going to have said I don't like standing behind the gym because ... of X, Y and Z, but they could go there and show that... and it gave them that, just different means of communication.*
>
> *(Partridge Sta2)*

There was also a high level of agreement that the SHRN statistics and graphs were useful in understanding school wellbeing (Table 24). This was more pronounced in Rowland than Partridge as 63.6% responded with very useful compared to 46.7%. The interview data also evidenced this as an acceptable way to inform the RAGs about the school wellbeing context, with only a small minority of students who were initially confused by the graph's national average lines. Some explained acceptability through a personal preference for statistics:

> *RES: I looked at them because you know I'm quite interested in, because obviously I work for the local authority not that that makes a difference, I'm sure*

teachers do but I did find it like you know the bullying one you'd got like the national female average and the national male average and it's just I like statistics. I guess I'm quite sad really but I like to see that breakdown of like how it, you know between sort of years seven, eight, nine, ten and eleven you know you can see quite clearly that there are patterns ...

INT: Yes.

RES: I think it just makes it easier, erm I think if we didn't have statistics they just, you can't really, you can't really attach to it can you really, I don't think you can, you need, I think you need a number to be able to say that is an issue then because you can see quite clearly that it is or not you know yeah, I like looking at statistics anyway.

(Rowland Sta4)

The quote also highlights that the statistics validated student photography themes and provided nuance. For example, whether this was an issue in comparison to other schools, whether this was a whole school issue, or what year groups, or genders were affected. Again, stakeholders expressed their surprise at some of the data nuances e.g. Partridge staff had not realised the low levels of satisfaction with student-staff relationships in Years 9-11, so thought it would have been omitted in the wellbeing plan if the graphs were not present during decision-making. The wider student population statistics were also believed to ensure student representation was not limited by the recruited students' ideas or their school echo chambers.

Acceptability was especially expressed by the Partridge LT who had been grappling with the SHRN report to decide on the school's wellbeing focus. He, and others, felt using the statistics alongside the photos and summaries informed RAGs about the bigger wellbeing picture, but the group discussions also allowed them to truly understand student perspectives as staff asked students outright about their experiences. This was summarised by a student:

RES: I feel like formal like triangulation with the different types of data, like statistics and photography, and then good discussion and focus groups on the subject, that would be really beneficial. But I feel like just this, as a whole, it is ... you know, it gives you ... it's quite shocking to show obviously how many students feel like they're not being listened to, but it's like more important to include other types of data along with it.

INT: Okay, so the fact we had statistics, we had photography, we had summaries of the photography, and we also then had group discussions, you think that was a good thing to have all those three methods?

RES: Yeah, along with the statistics as well, because you know, it backs, it gives factual evidence, so um, quantity of data, we need ... that is needed to show how everyone as a whole, feels. But then having individuals being able to speak,

just further emphasises that point. And if there was not the statistics, then I feel like the school wouldn't have taken it as seriously as it is.

<div align="right">*(Partridge Stu9)*</div>

This section outlines that problem-setting decision-making was successfully completed because of the cooperative functioning of RAGs who identified shared inclusion and exclusion criteria to prioritise wellbeing needs. Decision-making was informed by a combination of the resources of photography, school statistics, and group discussions. It showcases that photography allowed students to produce full wellbeing representations, so all pertinent issues were raised, which the other two resources verified and provided nuanced information for.

7.5.2   Problem-Solving

Now stakeholders had identified and prioritised the contextually situated drivers of the wellbeing problems, they needed to develop theory and activities to redress these issues. This section commences by outlining the five strategies RAGs attempted to use to fuse different knowledges together, and it continues by exploring the three stalling points discovered that challenged problem-solving decision-making.

Five different knowledge fusing forms were found, termed: acceptance, questioning, downplaying, leading, and dismissal. Acceptance describes a form where staff outrightly agreed with students about the solutions raised, and how they portrayed and understood the issues in context. This was shown in Rowland when staff agreed the litter situation was out of control; staff spent lunchtimes picking up litter, which was unacceptable, so suggested they should fine student perpetrators instead. Questioning was shown in Partridge through one staff member doubting the need to focus on 'equality and diversity', and more specifically to have an action to target the use of homophobic language in school. They outrightly said this to students but conceded when two students relayed accounts about the derogatory use of the word 'gay' by students, and when all students voted it was a priority. Downplaying student ideas is shown in the researcher diary entry below.

> *(Staff member) starts by asking the group about the difference between bullying and arguing which is the first point on the bullying sheet. (Stu4) does start to chat but no others do; after a few minutes (stu2) joins in. The staff then give examples of the differences between them. The staff moves the conversation on to discussing how they can promote bullying via TV screens etc. but the action is to develop a clear definition of bullying. In this way they are unknowingly downplaying what has already been decided. Developing a clear definition is*

about getting students involved in that process, whereas the promotion on screens is a one-directional information giving simple intervention which is very unlikely to make a difference.

<div align="right">

(Partridge Meeting 3 Observation)

</div>

Leading was shown in Rowland when the LT amended the action group table for the priority on decreasing fizzy drinks to add energy drinks. It was noted by the researcher that no student had talked about energy drinks before this point in the intervention, and we were in the last but one meeting. Therefore, the researcher modified the table for next time to ask students if this was an issue they agreed with. Other counter strategies were used as well when the researcher became aware of student's participation being limited by staff, such as asking students directly if they agreed with the change. Dismissal of student ideas was shown in Partridge when a student proposed modifying the school day, as shown:

There was one point where (Stu5) views were dismissed because the teachers thought they were not credible. (Stu5) said that other schools had shifted their day to start at 10am and (staff member) simply said this was not possible, and then the conversation moved on to another idea. There is a constant friction between student ideas and feasibility according to staff and this is just one example of this.

<div align="right">

(Partridge Meeting 3 Observation)

</div>

Clearly, as shown in the observation notes, staff were trying to ensure actions were realistic and feasible for schools and often would explain the limitations in budgets, staff time, or school's autonomy in terms of meeting local authority rules.

Table 25: RAG Survey Responses for Problem-Solving

Mechanisms	Questions	**Responses**	RH N (%)	PC N (%)
PROBLEM -SOLVING	8 Did the brainstorming task help the action group decide on relevant solutions?	Very useful	7 (77.8)	7 (46.7)
		Quite useful	1 (11.1)	6 (40.0)
		Not useful	1 (11.1)	2 (13.3)
		Not at all useful	0 (0.0)	0 (0.0)
	9 Did the last meetings help to finalise the action plan?	Very useful	3 (37.5)	10 (66.7)
		Quite useful	5 (62.5)	5 (33.3)
		Not useful	0 (0.0)	0 (0.0)
		Not at all useful	0 (0.0)	0 (0.0)

Not all questions were answered by all participants.

However, problem-solving was a turning point in the intervention, evidenced by school

stakeholder and researcher data as well as adaptations taking place during implementation. Regarding the RAG survey, a few stakeholders scored solution development (Table 25) as not useful (R = 1 (11.1%); P= 3 (13.3%)), although this was more pronounced in Partridge as a smaller percentage of participants also scored the activity very useful (46.7%) than in Rowland (77.8%). Even though views were less dispersed for action planning (Table 25), it was also rated lower than other intervention activities with only 37.5% in Rowland and 66.7% in Partridge rating the latter meetings very useful. Additionally, interview data highlighted participants had problems expressing what they did in these meetings and what the intention of the activity was; again, especially in Partridge.

As already shown in section 6.1.8, researcher observations of problem-solving found engagement of RAG members fluctuated. Their support needs increased with every meeting, which often meant activities were not completed in sessions in both schools. Resultingly, the functional fidelity table (Table 13) showed the problem-solving function was scored amber for both, and many adaptations took place during meetings. This need for adaptation was previously partly explained through having limited time with only one-hour sessions, which was exacerbated in Rowland as the ineffective information flow to students meant they needed locating at the start of meetings. However, this patterning of engagement, support needs, and activity completion, is considered a failure for the intervention to provide the right resources rather than an implementation failure. This is because difficulties in undertaking problem-solving decision-making were attributed to three interlinked stalling points, which regardless of time, participants would have still struggled with. These were the 'cognitive demands of tasks', a 'fixation on the problems', and 'a lack of knowledge to make informed choices', which are elaborated below.

Participants expressed they found activities cognitively demanding, especially solution development which focused on using the socio-ecological model to think of varying levels of solutions to tackle problems. Some found thinking about change at multiple levels was complex, and they were unfamiliar with the approach.

> RES: I thought it was really difficult to do. As an adult I thought that was quite difficult to sort of do. Erm, I think the pupils struggled a little bit when it got to the top. I think they were okay down here and I think as a school I thought they were okay, when it got to community and policy, I think the pupils were a bit out of their depth there.
> INT: Yeah, okay.

> *RES: I think I was out of my, I was quite out of my depth at some point …*
> *God, how can we do that then.*
>
> <div align="right">*(Partridge LT)*</div>

Students were less able to make decisions about how change could be supported at wider levels.

> *RES: I found it, I found it good but some of the stuff like the community like*
> *what will we do with the community, like if it's in the school it's school's problem,*
> *if it's, if something actually happens something very bad then it has to go to the*
> *community then. So we're technically like sharing a bit.*
> *INT: So did you find it easy to think of ways the community could help the*
> *school to change?*
> *RES: Erm no. I couldn't think of anything for the communities.*
> *INT: Okay. could you think of any others, were there any other ways which*
> *you found more easy to think of ideas of how you can make a change?*
> *RES: Individual.*
> *INT: Why do you think that was easier?*
> *RES: Well some pupils, like some pupil's classes their attitude to the teachers,*
> *their work was appalling. Erm they sometimes argue with the teacher and*
> *individuals are sometimes slow which could be erm a disability or just laziness.*
>
> <div align="right">*(Partridge Stu8)*</div>

Students also thought they did not develop as many ideas for change as they could have done as time exacerbated the issues with the cognitive difficulty of tasks:

> *RES: Yeah and I'd also say it was, when you were given it, I didn't think*
> *really there was enough time to talk and put down ideas… and some of us thought*
> *let's take a long, hard thought and that …*
> *INT: Yeah.*
> *RES: … I think there wasn't enough time for that …as in for the more*
> *complicated things and that's why some of them had less options of what you*
> *could do towards it.*
>
> <div align="right">*(Partridge Stu7)*</div>

Therefore, staff took lead roles in problem-solving as they felt more cognitively able to complete tasks and were accustomed to scaffolding student involvement in group discussions. Students were also happy to allow staff to take control:

> *(Staff 2) was the lead for the group and all the students seemed happy to allow a*
> *teacher to do this, unsurprisingly as they are used to staff taking control of*
> *lessons. She did this in a way where she was constantly asking the student's*
> *questions about what they meant when raising the solutions and she was giving*
> *them time to talk and give alternative opinions.*
>
> <div align="right">*(Partridge Meeting 2 Observation)*</div>

There were also examples of staff drawing in quieter students by tasking them with jobs such as writing or directly asking for their opinions. This demonstrated that staff were trying to ensure that decision-making was a shared endeavour.

Within Rowland, this is where the LT character and her enthusiasm and investment of time outside of the meetings to support the intervention paid off: an upside to the intensive embedding of the intervention (section 6.2.2.1). During meetings she led her small groups well, presumably because she had asked to see the resources beforehand and had time to digest the task aims. However, the need for researcher support and the completion score in Rowland was due to the second smaller group struggling to complete the activity.

The latter group in Rowland was more characteristic of both groups in Partridge with the researcher needing to take a more active approach. This was also due to the second stalling point during problem-solving as tasks were punctuated throughout by incidences where groups reverted to talking about the problems and rehashing how they functioned within the school rather than how to redress them:

> *In the second group I did go over after a few minutes of them talking about bullying because although they were discussing the issue i.e., the definition of bullying and the difference between banter and bullying, they were not thinking of solutions/changes they could make. I prompted them by referring them back to aim 3 on the task sheet and asking them about the bullying policy. Hence, this group did not seek extra support, but I did interject to try and ensure they moved away from talking about the problem further rather than to develop solution ideas.*
>
> *(Partridge Meeting 2 Observation)*

Often conversations would not progress to thinking about solutions, so the researcher intervened to remind groups of task aims or took over facilitation when needed. Another example of this was shown in Rowland:

> *(Staff name) was really struggling to get the group to stop talking about the issues and focus on how we can change them, so I stepped in and took over. Whether I should do this is debatable, however the project is limited in the time I can have in the schools for sessions and I wanted to push the intervention forward.*
>
> *(Rowland Meeting 3 Observation)*

Although, there were examples of purposeful reversion to problems where the legitimacy of the problems raised or of the solutions already developed were questioned, as shown above in the 'Questioning' strategy of shared decision-making.

The last stalling point of 'a lack of knowledge to make informed choices' was considered the most disruptive for action planning, demonstrated by the lowest meeting engagement scores.

Stakeholders drew on their own prior experiences or knowledge from other settings. For example, in Rowland the activity to promote water intake emulated local primary schools who had individualised student water bottles. In Partridge, the YEO suggested contacting her counterpart at another school as they were running a sleep programme.

However, most students expressed difficulties in making decisions on who should take responsibility for actions and by when. They knew the teaching roles of staff but lacked knowledge of their other responsibilities and felt unsure about how long it would take to deliver health activities.

> RES: *No I don't think they knew half of the responsibilities [of staff]. Because like I know a teacher, if I had to go through it then I would know. I don't think I understand how hard it is to do their job either.*
> INT: *Yeah. So you think we needed staff to tell us about this bit. We needed staff specifically.*
> RES: *Yeah, I had no idea how much effort it took into making sports week. I thought it was just right go up the centre, do everyone. I didn't know we had to pay for everything, you had to like get all the jarring sticks, you had to do it all perfect. You had to organise this, this and this. How many seats, how many rows, how many houses like there are. Like red, green, blue*
>
> *(Partridge Stu5)*

Hence, students again let staff take the lead in these decisions. Partridge stakeholders also explained the lower student engagement through the staff needing to explain the knowledge to students they did not possess.

This accounts for some of the student fixation on discussing problems rather than solutions, as they were confident to discuss problems they had lived experience of, but out of their depth when thinking of solutions or action planning; where even staff struggled. Therefore, akin to problem-setting, RAGs need to be informed or accrue knowledge prior to making problem-solving decisions. This knowledge development needs to include: solution activities possible at different levels, achievable activities, teacher responsibilities, and how activities are implemented in schools to understand appropriate timings. The researcher also thought this could support RAGs to move away from simple activities such as information giving in assemblies, as these often do not make lasting changes in student behaviour and outcomes.

Some suggestions were put to stakeholders, for example, a formal mapping of staff responsibilities before problem-solving sessions which was received well:

> RES: *I think if, if we had kind of a, a map.*
> INT: *Okay.*

RES: Err of, of the staff, to, to show who was employed at the school at different levels, err, I think that could have helped, because then they would have been able to say "Actually that one doesn't need to go to senior management". "That, we could go straight to the Heads of Faculty with that one". And so I think seeing the different levels that we've got in the school could, could have made a difference.

<div align="right">

(Rowland Sta2)

</div>

To achieve this, the researcher pondered the need for further resource in terms of an intervention team who could support school problem-solving. As shown in section 6.1.8, even though the researcher had put forward, and schools had accepted, some actions supported through outside organisations (i.e., Stonewall's Champions Programme), the researcher's own knowledge and time was limited to complete this.

I sent an e-mail to colleagues about the problems set in each school and asking for examples of ways to tackle these issues. I had a few replies but this is an example of the issues with the project being a PhD, as this stage needs a whole team effort to think of potential evidence informed strategies to put forward/respond to the group. You need a range of knowledge about interventions especially as you are not sure what themes will be prioritised or what solutions they may need help with. I spoke to (SHRN manager) who noted there are very few evidence-informed interventions that are evaluated as effective so you need to put forward ideas that are the best guess at being good for the schools. With this in mind,, I searched the internet for ideas and put forward four different projects to the Rowland RAG.

<div align="right">

(Research Diary)

</div>

Therefore, RAGs attempted to share problem-solving decision-making by fusing knowledge through five strategies termed Acceptance, Questioning, Downplaying, Leading, and Dismissal. This is not a conclusive typology, but an initial iteration which needs refinement and correction as evidence accumulates in future evaluations. Also, activating problem-solving proved challenging because stakeholders struggled with three reasoning stalling points as RAGs fixated on problems and had cognitive and knowledge limitations. Even though this was ameliorated in Rowland as the LT intensively supported tasks, it was not completely overcome. The last section will discuss a further unexpected mechanism consequence found during the intervention.

7.6   The Unintended Consequence of Aligning to Student Voice

This section will discuss that although aligning the intervention closely to student voice may have engaged schools, it may have had the unintended consequence of hindering the recruitment and retention of RAG members.

Initial school documentation (Appendix G) acknowledged the project could contribute to addressing the agendas of wellbeing and student voice. In the schools, this tapped into the perception of student voice being synonymous with school councils, with both LT's misperceiving the intervention as a school council run by an external facilitator rather than the system-level capacity-building project it was.

> *(LT) said she will call the group the school council, but then quickly changed it to wellbeing student council. She made a point of saying that she knows it is not the student council but that is how she thinks about student voice so keeps saying it. This is important because the schools are framing the project about what they already know, in regard to student voice. Aligning the project to school voice is good as there is a national agenda already set, however, as I am not aligning with this agenda par se but with the research evidence, I found myself constantly referring to what I have found in the evidence in my first year. I made a point of saying that this is something new in Wales as the projects I have read about are in Australia, England and Canada, and that it involves members from throughout the school system rather than just students.*
>
> *(Research Diary)*

There are parallels and disjunctors between the two. The Welsh School Council Regulations (Welsh Assembly Government 2005) focuses on electing a student council with students from each year group representing their peers' views, paralleling the intentions of this project to have a diverse student membership. However, the intervention and school councils are dissimilar as the Regulations set only one adult teacher whose role is to facilitate the group, whereas the intervention's underpinning mechanism is about shared decision-making with adult members from multiple sources. Nevertheless, some members tended to focus the project only on student voice.

> INT: *What do you think our overall aims were from your point of view?*
> RES: *Um to tackle the issues that that, that schools are currently facing, um, look at different ways that, the, the ways that other schools tackle issues and, and try and develop them to suit the, the school that you're going to.*
> INT: *Yeah, yeah.*
> RES: *Um, using the views of the students to, to tackle it.*
>
> *(Rowland Sta2)*

Whilst others understood the intervention attempted to give students a platform to work with adult members, who were not just present but active in helping to develop plans.   They also felt this meant the school was more likely to listen to what was put forward in plans.

> RES: *The last time I did it [school council], when I was in Year 10, 2016 and '17. So that was the problem, as we were coming up with all different event, I'm*

sorry, environmental ideas. For around the school, now and we also planned about recycling.
INT: Mmm.
RES: And re-using the er lost and found er school uniform.
INT: Ah yeah, okay.
RES: That was not discussed, it was discussed, but it wasn't carried out. It was supposed to be carried out by the pupils, but there was no sort of staff observation.
INT: Okay.
RES: Whereas in this group we've sort of been, we've looked at the points of the teachers and the pupils.
INT: Yeah, okay. So do you think that's important, that we did involve the teachers, in thinking about the plan?
RES: Yeah. Yeah.

(Partridge Stu10)

As the research diary entry shows, student councils are set by a national agenda through Welsh Regulations (2005), and as shown in section 6.1.1, supra system-imposed duties supported school involvement with the intervention, but it may have had the unintended consequence of hindering the recruitment and retention of RAG members.

For student recruitment this was because students didn't always have favourable recollections of School Councils, especially in Rowland. As already shown in section 6.2.2.2, Rowland students simply did not know whether they had a school council currently and what they did. In Partridge, although five students were meant to be School Councillors during the year the co-production intervention took place, they said the meetings had started but had become less frequent and eventually stopped before outputs were developed.

RES: Erm just we haven't had a school council meeting for a while now but we just sit at a table and just talk what we've erm, talked what we've done like the groups and just say how everyone is and all that.
INT: Yes and the school council you haven't had a meeting for a while you said?
RES: No.
INT: Erm so okay then. Thinking about how, how do you think this project is similar to the school council then, what things are the same?
RES: Well we have the meeting, we talk about our views erm, we write about it, we actually remember it ...
INT: Okay. So like we made an action plan, is that something you do in the school council, how do you know what you're going to do if you don't write it down?
RES: I honestly don't know we haven't got onto that yet.

(Partridge Stu8)

Also, the researcher did not emphasise the difference between the two during recruitment exercises. Therefore, some students may have aligned the intervention with school councils which could have contributed to the general apathetic response to student recruitment as discussed in section 7.2.

Further though, there was a distinct lack of attempt from both schools to recruit external members. Both LTs focused their efforts on recruiting students although the researcher spoke to both repeatedly about trying to recruit parents and Governors.

> *We also spoke about other staff who may be able to be part of the project. I discussed some of the other projects that have taken place which have involved non-teaching staff, school nurses, wellbeing officers, parents and Governors. (LT) discussed having five teachers on board; himself as a senior member and a Governor as he is not sure anybody else would have the time to do it. I said to (LT) that the make up the group may be different for different schools, so we need to see what works for this school but should try to get parents and Governors on-board.*
>
> *(Research Diary)*

Section 6.2.1.4 explained the complex relationships between schools and parents where school's reductionist understanding of parental engagement, and parents lack of appreciation of their roles in school were elaborated. However, this cannot account for the lack of engagement of Governors, as they are already active members of the school community. It was found that whilst staff members talked enthusiastically about the importance of recruiting students as they aligned the intervention to student voice, they did not share this enthusiasm for recruiting external members such as Governors.

> *INT: So you talked about governors and both erm LT erm, do you think we should've had more people who're governors or ...*
> *RES: Possibly yeah. Yeah possibly governors would've been, would've been a good one. I mean I'm a governor of erm outside of school and I would've liked to have sort of, if my school runs something like this I would've been nice to be involved and again, it's just sort of building that relationship with the staff and the students I suppose.*
>
> *(Rowland Sta3)*

Also, this may have added to the lack of retention of the Wellbeing Directors in Rowland, already accounted for by a limited buy-in for wellbeing in school. This was because one of the Directors was very keen on the intervention at the Introductory session but didn't attend any meetings. He did focus on 'listening to learners' rather than adult engagement though:

> *(Director) explained photography was better way for them to think about wellbeing rather than me just asking them directly as it will give them time and space to consider what they want. Also, he emphasised the importance of the project from the aspect of listening to them. He said although they were the pastoral team they were adults and it has been a long time since they went to school, so they might not always understand the ideas behind wellbeing they deal with.*
>
> *(Research Diary)*

Therefore, data showed aligning the intervention closely to student voices meant staff associated it with listening to learners, and specifically with school councils potentially at the expense of other stakeholders. This could partially explain the apathy of students to nominate themselves, the lack of effort in either school to recruit external members such as parents, Governors, or other community members, and the indifference of some teachers in Rowland to attend meetings.

7.7   Summary

The overall mechanism of empowering stakeholders to participate in shared decision-making was achieved through the resources of an external facilitator and a structured co-production process, which resulted in the intended output of school-specific wellbeing plans. Although, the intervention's mechanistic functioning was dynamic and fluctuated throughout the antecedent three sub-mechanisms and the emergent unintended consequence of aligning the intervention to student voice. Positively, RAGs organically developed good relationships which supported decision-making through members having pre-existing ties and as participants interacted as the intervention progressed. Further, problem-setting decision-making was successful as RAGs felt able to work cooperatively and identify shared inclusion and exclusion criteria to base decision-making on. This decision-making was supported by a combination of information resources about the school's wellbeing context in the forms of photography, school statistics, and group discussions.

However, RAG diversity was tempered in terms of staff involvement by the baseline contextual 'buy-in' for wellbeing in schools, and for students, as their intervention responses were disparate reflecting their positions in school systems. Also, aligning closely to student voice meant staff associated the intervention with school councils potentially at the expense of student and external member recruitment, and the retention of staff RAG members at Rowland. Activating problem-solving also proved challenging because RAGs struggled with the stalling points of problem fixation, and they had cognitive and knowledge limitations.

These issues will need to be addressed in future interventions to ensure plans fit with schools. This will be further considered in the next chapter which focuses on the domain of social validity.

8   Chapter 8: The Social Validity of Wellbeing Plans

The current chapter focuses on stakeholders' assessments of the social validity of wellbeing plans and seeks to address the following research question:

Can co-production support school stakeholders to produce relevant and implementable wellbeing intervention plans?

Social validity was explicated as whether plans were viewed as relevant to, and implementable in, the contexts they were created. Assessments are made through drawing on data from all five process evaluation methods of the researcher diary and observations, the RAG (Research Action Group) survey and interviews, and the SMT's (Senior Management Teams) focus groups. Within this chapter, the views of the SMT as key school-decision makers on plan adoption and implementation are given more of a prominent position. The chapter begins in sections 8.1 and 8.2 with overviews of social validity and the wellbeing plans produced in each school, respectively. It continues in three sections. Section 8.3 focuses on the relevance of the plan priorities and solutions, and section 8.4 on the likelihood of plan implementation. In these two sections, the contextual conditions and mechanistic functioning of co-production expounded in the preceding two chapters are used to account for findings. The final section 8.5 draws out the implications of relevance and implementation being dynamic concepts within complex, nested systems.

8.1   Overview of Social Validity

Key uncertainties from the systematic review directed the phase 2 process evaluation to focus on co-production functions from capacity-building to adoption, so the implementation of the resultant wellbeing activities and the evaluation of outcomes were not followed up (section 5.1). Consequently, the evaluation of outcomes was substituted for the assessment of the output of the wellbeing plans produced through constructing the domain of social validity. The domain was constructed through data from a study by Turner et al. (2019) that supported the establishment of the Intervention Development guidance (O'Cathain et al. 2019a) and a process evaluation located within the systematic review, which also substituted the assessment of co-production outcomes for output (Bell 2014; Bell et al. 2017). These demonstrated social validity should focus on whether the resultant intervention plans were relevant to the individuals and contexts in which they were created and whether they were implementable in those contexts. So the domain was split into the two subdomains of

relevance and likelihood of implementation, which this chapter focuses on. First though, there is an overview of the wellbeing plans to support the comprehension of this chapter.

8.2 Overview of Wellbeing Plans

Plans outlined the school priorities and the solutions to redress these, which were set during the problem-setting and problem-solving functions, respectively (Appendix Q for full plans). Both schools produced plans with five wellbeing priorities to address school needs, as intended. As shown in Table 26, the priorities in plans were congruent as both focused on individual behaviour change (drinks and sleep), relational change (between students, teachers, and parents), environmental change (spatial and aesthetic), and awareness raising of wider issues (equality, diversity, and children's rights). There was also discordance, however, as Rowland's plan had a more expansive focus with two priorities that had dual focuses (promoting water and limiting sugary drinks and improving teacher-parent and teacher-student relationships).

Table 26: Profiles of School Plans

	Rowland	Partridge
Priority 1	Improving teacher-parent and teacher-student relationships	Promoting sleep
Priority 2	Raising awareness of and supporting equality, diversity, and children's rights	Raising awareness of and support for equality and diversity
Priority 3	Improving and supporting student-student relationships focusing on decreasing bullying	improving the school's ethos with a focus on the visual environment and use of space
Priority 4	Improving the school's ethos with a focus on tackling litter and the visual environment	Improving and supporting student-student relationships focusing on decreasing bullying
Priority 5	Promoting water consumption and limiting access to sugary drinks	Improving and supporting student-teacher relationships

Both plans had multiple solutions for each priority; however, Rowland's plan featured 10 more solution activities than Partridges (RH=34; PC=24). The plans took a long-term view with start dates for solution activities between July 19 and September 20, with the consideration activities would continue into the academic year 20/21. Additionally, both plans attributed responsibility for the development and delivery of activities to staff except for the awareness raising priority. For this, Rowland wanted to work with UNICEF on their Rights Respecting Schools project and Partridge with Stonewall on the Secondary School Champions Scheme.

8.3 Relevance of Plans

This section shows that there was a high agreement that plans were relevant to the individuals and contexts in which they were created, although stakeholder interviews and focus groups demonstrated a tempering of views in three ways. Two were linked to the relevance of plan priorities to address school needs, which were developed during the problem-setting function. They were targeting needs that cross school-family systems and addressing all the needs of the student population. The third was the relevance of the plan solutions, and hence problem-solving activities, which further provides evidence for the need to modify this function.

8.3.1 Overall Relevance

Table 27: RAG Survey Responses for Relevance

Category	Responses	RH N (%)	PC N (%)
Overall, do you think the action group process produced a relevant school wellbeing plan?	Yes	9 (81.8)	13 (86.7)
	No	0 (0.0)	0 (0.0)
	Not sure	2 (18.2)	2 (13.3)

RAG members gave very positive responses (Table 27), with 81.8% in Rowland and 86.7% in Partridge agreeing the co-production process produced a relevant plan. This was clearly articulated by stakeholders in interviews too:

> RES: It's, it is really relevant to the school and it's relevant, the pupils have come up with it ...
> INT: Yeah.
> RES: ... and it's relevant to the pupils, it's relevant to the school, they're all achievable, yeah. I know that we just said about the dance studio, that's you know long term, but you know you've got to have, you've got to get outside your comfort zone sometimes haven't you ...
> INT: Yeah.
> RES: ... and you've got to think well hang on then, there are things on here, most things on here are really, really doable and will have a great impact on the left-hand column and I think it's really good.
>
> *(Partridge LT)*

Whilst there was a consensus that the plans developed met most of the needs of the student population in each setting, as already shown in section 7.4.1, stakeholders did feel there was a case for many themes to be within the top five priorities and that some could be easily exchanged. However, the relevance of the priorities and actions was further demonstrated by

staff recognising that they had the potential to make a difference at a universal level and that not all were new endeavours but ongoing work that schools had already been addressing:

> *RES: Um and it's certainly many of these aspects, I know are already happening, so just need to be kind of strengthened.*
>
> *(Rowland LT)*

The relevance of actions was also borne out by the schools commencing some activities before the co-production intervention had finished. This was shown in Partridge as they had re-introduced the morning Daily Mile walk, partly to wake students up and address tiredness. Similarly, in Rowland, during one of the researcher-LT informal catch-ups, steps to begin implementing environmental changes were discussed:

> *The LT noted that the litter was getting out of control and they are having vermin and birds flying down to get to food which has been discarded on the floor. She said she has already appealed to estates about providing brighter bins, written to parents about talking to their children about litter throwing, but also knows that teachers are not pulling students up on throwing litter on the ground. She wants to do something about teacher actions next.*
>
> *(Research Diary)*

However, relevance was tempered in both settings with two RAG members in each setting unsure of plan relevance (Table 27). Interviews and focus groups elaborated on this tempering of views regarding the relevance of plans to address school needs and the relevance of solutions, shown in the succeeding two sections.

8.3.2   Relevance of Priorities

Two issues raised about the relevance of priorities were problems with targeting needs that crossed school-family systems and fit with the needs of the student population. Section 7.4.1 expounded how RAGs identified criteria to direct problem-setting decision-making, with one exclusion criterion being the ability to realistically affect change for the need. This highlighted difficulties with targeting needs that crossed school-family systems shown through the case of tackling sleep as an underlying wellbeing problem.

In both schools, students perceived sleep and the resulting tiredness as a problem during the photography project, and throughout the intervention, all stakeholders, including the SMTs, acknowledged issues with student sleep. But addressing this was contentious in Rowland:

> *When they looked over the table of priorities, (Stu2) pointed out that the students put sleep up high but the staff have put it last. He thought that some of the other issues are caused by students not having enough sleep i.e., people playing up in school and bullying other students. However, he noted that the teachers put it low*

as they think they cannot do much about it – (LT) had openly said this beforehand. The other students then agreed with this saying that it was not possible for school to do something about this as sleep takes place outside of school. (Sta2) said it was not possible to have a nap time in school even though it would be great; to which (Stu6) referred to Japanese schools where they are offered a nap after lunch.

(Rowland Meeting 2 Observation)

The placement of the issue as the last priority for staff meant it was not one of the five

Rowland priorities. The LT expanded on why this was the case:

RES: *We can't impact on it. I mean you know, there are lots of things that we share with parents, in terms of um, what, ways that we think that support should be happening for our young people, but we obviously can't dictate how you should parent your child. You know, that's really patronising and, and you know, quite negative.*
INT: *Yeah.*
RES: *Um so addressing something like sleep, we absolutely can address it to say you know, "Your, your child has come to school today, seems very tired".
You know, "Um, just want to raise it with you, in case perhaps they are not getting enough sleep at home". So there are ways and means of communicating this with parents, but it's far more difficult to actually make an impact on that, because when that child goes through the school gates, the responsibility of their care passes to their, passes to their parents.*

(Rowland LT)

Contrastingly, in Partridge, this was prioritised as the most important issue (shown in Table

26, the overview of plan priorities table) with several actions proposed, including: running a

time management programme; educating and monitoring student screen time; contacting

another school that was running a sleep programme; and writing to gaming companies about

adding time warnings. However, the SMT debated the root causes of sleep issues:

RES1: *It's the focus is different, the things about sleep and whatever, you know, are more complicated things aren't they, I've read lots of literature about schools where they get the older children to come in later, let them lie on in the morning, all that does to me is seems to encourage them to stay up late the night before, 'cause they can have a lie in. It doesn't change their habit really.*
INT: *Yeah, it doesn't address the problem does it.*
RES1: *Yeah, yeah, it doesn't change that, the preparation for the world of work and things like that. You know, but there's evidence to show that that can help them and then you read something else the next day and it's obviously changes.*
RES3: *Are the sleep issues all through the year groups or are they, as they get older?*
RES4: *I don't think they're sleep issues, they're more related to their use of technology, the management of time and sleep issues.*

RES2: Yeah, but like (other staff member) said once you're out of that routine it's hard to get back into it.

<div align="right">*(Partridge SMT)*</div>

This highlights the complexity of tackling such an issue and unsurprisingly, this was not one of the three issues the SMT adopted at intervention completion.

Acknowledging sleep problems in schools but neither school adopting it as a priority at intervention completion revealed contextual issues had consequences for plan relevance. This contextual issue was expounded in section 6.2.1.4 as the inability to align the intervention with the parallel systems of families and recruit parents to RAGs. This culture of excluding parents from proactively tackling wellbeing spilled over into the issues prioritised and adopted, irrespective of how these home behaviours acted like antecedents to student wellbeing. The case of sleep further highlights the fuzzy boundaries between the school and family domains because stakeholders differed on their opinions of what was possible for schools to target and achieve, demonstrated by the quotes above. Although this has started to be unpacked, further exploration with school stakeholders is needed to understand the nuances of these fuzzy boundaries.

Opinions between schools also diverged on the fit of the plan priorities with the needs of their student populations. Within Rowland, the staff were unsurprised about the top five issues, and they linked the foremost relational priority to addressing the staff 'buy-in' for wellbeing. Staff also welcomed that students had taken a broad understanding of wellbeing:

RES: I think we've got a really good variety, um, you know, it doesn't just focus on, like I said feelings, which sometimes people think, wellbeing is automatically connected to, it really looks at many areas across the school. So it looks at health, it looks at relationships, it looks at environment, um, you know, it looks at raising awareness, so I think that there is a really good range of things, which help the school to be quite well rounded, when looking at wellbeing.

<div align="right">*(Rowland LT)*</div>

Whereas, in Partridge, the SMT acknowledged the top five priorities were of high importance but felt there was a missing priority:

INT: One of the other big things and I, I haven't heard us mention that if I'm honest, I haven't seen if I've read it in here [knocking] is mental health. Okay, so we're going to do a big thing on mental health…
RES1: No, this was a big thing in this, is when the report was generated is myself and (sta3) said straight away they have, the pupils didn't prioritise mental health and it didn't come out as one of their five. Mental health didn't come out

as the five key themes for the pupils so I said straight away to (researcher) mental health is still going to be a priority, even though they put it down at number 10 out of 20 or what it…
RES2:   They don't understand do they?
RES1:   They don't understand it, but as a school that's still something we're going to target that next year which isn't in this but we've, it's our, it's one of our priorities.

<div align="right">*(Partridge SMT)*</div>

This was perceived as a consequence of the shared decision-making sub-mechanism of diversity, with one Partridge staff member believing the omission of 'less engaged' and 'struggling' students, who would need mental health support, meant the priority was overlooked. Although, another member acknowledged RAG staff had wellbeing roles, so worked frequently with the 20% of students with higher support needs, skewing their assessment of mental health support. This was also incongruent with RAG's decision-making inclusion criteria to set priorities based on what affected a large proportion of the school population (section 7.4.1). It highlights the tensions between using a pathogenic focused understanding of mental illness or a salutogenic focus underpinned wellbeing and life satisfaction (Antonovsky 1979) (elaborated in section 2.1). With the former being the lens the SMT used and the latter how the RAG had considered and prioritised wellbeing. Mechanistic problems were also important when accounting for the relevance of solutions.

8.3.3   Relevance of Solutions

Stakeholders believed overall solutions were relevant to address needs. However, the mechanistic stalling points of cognitive and knowledge limitations and a fixation on discussing problems during problem-solving (section 7.4.2) moderated relevance in three ways that can be used to refine problem-solving activities.

The first was a reluctance to remove solutions after brainstorming, highlighted when the Rowland SMT discussed the solution to use the Welsh Baccalaureate to improve the school aesthetic.

RES2:   I mean the practical issue you'd have there is every child in the year is doing that challenge at the same time and we don't have the facilities for them all to be able to be doing an art project. We just don't have, that wouldn't be feasible.
INT: Okay.
RES2:   It's a lovely idea but th-that won't be able to happen.
RES1:   And we had to talk about sort of like what was realistic didn't we? And the, one, one, the thing is with the students, once the things were in the plan…

> INT: Yeah.
> RES1:   They were very reluctant to take them weren't they, 'cause they were all very valuable, so, erm, yeah. I'm aware that it might carry over.
>
> *(Rowland SMT)*

The researcher also reflected on this during intervention rollout because, in both schools, students didn't remove any solutions during final action planning. This was mirrored in many of the student's post-intervention assessments of plans:

> RES: No I don't think we've done too much we've just stuck to the main points and explained them in a lot of detail.
> INT: Can you think of any negatives about the plan anything which you think you know maybe we could change or from the meeting we talked about the plan the last time do you remember?
> RES: Erm I don't think we could change anything I think that's like a really good plan and I think that's like the plan that will help us in school.
>
> *(Rowland Stu4)*

This led to many plan activities with Rowland having 34 and Partridge 24. The solution development activity (Appendix F) was intended to allow the RAGs to develop solutions adhering to the principles of brainstorming, i.e. ideas should be raised without critiquing their value so that creativity is not stifled. However, there may be a need to score solutions on relevance after this to focus on a narrower number of activities.

The second theme was the articulation during post-intervention interviews that the unintended consequences of actions had not been considered. Clearly emphasised in Rowland, when staff and students assessed the priority to limit access to sugary drinks. Multiple actions for this priority were included, which ranged from the more authoritarian activity of banning high sugar drinks by surveilling behaviour with an audit of drinks to increasing the awareness of students through demonstrations of sugar levels in drinks. Staff thought some actions would have unintended consequences:

> RES: The water thing I'm pleased with as well because there's so many like, some of those drinks you get from vending machines aren't, you don't even know what's in it it's so blue, I dread to think what's in some of those sugary drinks.
> INT: The machines yeah.
> RES: Yeah but then I think like things like the water and the sugary drinks will take time because if they get the train in they can walk up to the Co-op.
>
> *(Rowland Sta4)*

Also, a minority of students thought some actions were too authoritarian, and there would be a reaction from the student population. So the best actions may be those which support educating students:

> INT: Okay. So you think maybe we should be promoting less sugar drinks rather than banning high sugar drinks or you think they're just ...
> RES: I think promoting low sugar drinks would be a good idea and maybe if it was possible to do, we used to have a poster upon the wall saying erm all of the different amounts of sugar that were in different things, there were like big packages of sugar saying in a Coca Cola bottle there is that much sugar and in a Yazoo there is this much sugar and it put into perspective what people were putting into their bodies.
> INT: Yeah okay. So yeah that was kind of like what we said to do with the demonstrations when we demonstrate how much sugar is in different things.
>
> (Rowland Stu6)

Whilst education alone may not be considered an effective way to change behaviour, the assessment of the supportive or punitive nature of actions and potential unintended consequences was not considered during problem-solving but could be in future.

The last theme was a need for shared responsibility of actions. Post co-production, both LTs felt strongly that they had nominated themselves to undertake a lot of actions. Examining the plans, the Rowland LT was named as the main contributor or organiser in 32.4% (n=11) of the actions, and the Partridge LT in 37.5% (n=9). Other RAG staff also felt activity responsibility was not spread evenly within schools:

> RES: [Students said] you can do an assembly, you can organise this for lunch time ...
> INT: Yeah.
> RES: ... and I think for them, after we'd gone, I was with (LT) in this, after we got through quite a few, you could see their faces, they were like how are you going to do all of this... like this has all got your name written next to it ...
>
> (Partridge Sta2)

There was also acknowledgement this was due to students not knowing the responsibility of other staff, that they did not want to nominate staff who were not present during meetings, and students were not assigned responsibility for actions:

> RES: Like young people didn't, er, put themselves forward... never said, oh, I'll do it, I'm sure I'm capable of doing this, they always, as you can see it's mostly staff ... erm, like (LT) name is mentioned a few times, like my name is on it, erm, but it will be down to capacity of the staff like ...
> INT: Yeah.
> RES: ... but I did find that, like some things I think the pupils were capable of, but I don't know whether they didn't have confidence or they felt like and it's probably a historical thing where we've said to them like what would you like in

the school erm, and they've said, oh, I don't know, after school I'd like boxing, I say alright, leave it with me, I'll sort out boxing where maybe we should be saying, oh, if you'd like that, right, come on, we'll work together and we'll do this ...

(Partridge Sta4)

As shown, students may lack the confidence to take on actions, especially in Rowland, where the baseline context showed student involvement was non-existent. Also, even though Partridge involved students in school councils, surveys, and in informing school policies, staff accepted students' assessment that they received no or little feedback about how their involvement had influenced changes. This was also seen as a consequence of staff taking responsibility for making these changes:

RES: ... I think sometimes we get so trapped in finding out what they want and then us do it ...
INT: Yeah, okay.
RES: ... and I think sometimes that's where maybe the gap lies when you say to pupils do you feel, you know one of the questions we ask them quite often is do you feel that your voice is heard, do you feel that things have changed because you've said it and they'll say no and it's because... it's being done for them or to them... rather than them doing it.

(Partridge Sta2)

Hence, there is an opportunity to highlight this during problem-solving and attempt to change this culture of 'doing for' students after asking their views to 'doing with' them, by supporting students to develop plans where they deliver health activities.

In summary, the relevance of plan priorities was tempered by contextual factors in terms of the inability to align with families in both schools, resulting in the failure to address valid needs which crossed home-school boundaries. The results of the shared decision-making mechanisms also had consequences for the relevance of priorities and actions. In Partridge, stakeholders believed the lack of RAG student diversity accounted for their plan omitting the valid need of student mental health. In terms of solutions, the reluctance to remove solutions, consider unintended consequences, and share responsibility were attributed to the stalling points which challenged decision-making during problem-solving. These issues will be considered further when refining the intervention in the succeeding chapter.

8.4   Likelihood of Implementation

This section shows that all RAG stakeholders thought plans were at least quite likely to be implemented, but three issues were raised as important when considering likely

implementation, all of which were linked to contextual issues. The buy-in and continued enthusiasm to fulfil plans' and the allocation of resources were dependent on the school's baseline 'buy-in' for wellbeing. Whereas to increase implementation, SMTs thought the co-production intervention should be more seamlessly linked to wider supra system processes.

8.4.1 Overall Likelihood of Implementation

Table 28: RAG Survey Responses for Implementation

Question	Responses	RH N (%)	PC N (%)
How likely is it that the wellbeing plan will be implemented in your school?	Very likely	8 (80.0)	3 (20.0)
	Quite likely	2 (20.0)	12 (80.0)
	Not likely	0 (0.0)	0 (0.0)
	Not likely at all	0 (0.0)	0 (0.0)

The RAG survey showed a high consensus that plans would be implemented (Table 28). This was more favourable in Rowland with 80% thinking implementation was very likely and 20% thinking it was quite likely, whereas in Partridge these percentages were inverted. As shown in section 6.1.10, this was incongruent with the SMT commitment to adoption as Partridge adopted three actions, and Rowland could not formally commit to any, although the LT said she would implement what she could.

Staff interviews showed a favourable attitude towards implementation because they had ownership over plans being part of the RAGs, so both staff and students would be more likely to drive forward actions where possible.

> *INT: Okay, that's really interesting. Erm, how likely do you think it is that things will be implemented in the plan?*
> *RES: I think lots of the things in this plan will be implemented due to the staff you had ...involved in writing it ...*
> *INT: Okay.*
> *RES: ... because I think you've got the right people behind it to influence it, especially the things that, like I said, that I see happening and that I see as an issue, we'd have a personal you know connection to it and a personal investment in making you know these changes to it.*
>
> *(Partridge Sta2)*

Students thought the likelihood of implementation was high due to the staff involved too, but also because the process had led to a written plan which was clear, coherent, and well

structured. They acknowledged that student involvement did not always lead to such a concrete output which often jeopardised implementation.

> *RES: I think it'll be quite likely that the school actually do things about it because now we've got it written down on paper (LT) can take it to the senior leadership team and mention it to them and then they can like start sorting things out then.*
>
> <div align="right">(Rowland Stu4)</div>

However, differences were found between schools regarding the buy-in and continued enthusiasm for plans and the adequacy of school resources to fulfil plans.

8.4.2   The Buy-In and Continued Enthusiasm for Plans

RAG members thought that the buy-in for plans would affect whether they were implemented in the schools. Explanations for buy-in for the emergent wellbeing plans were, unsurprisingly, synonymous with explanations for the embeddedness and coupling of the co-production intervention with the baseline context, as found in Chapter 6. In Rowland, stakeholders felt if the LT, who had intensively embedded the co-production intervention, oversaw implementation, progress would be made with many actions.

> *RES: I don't think, I think, I think they could, but it depends on who they're going, oh if they put (LT) to run it, I think it'll carry on, but if they put it to like a normal classroom teacher, they won't have enough time because of lessons……And she does, she has, she's quite high powered in the school as well, so she'll be able to get things done.*
> *INT: Oh right so that's interesting, so you think you'd have to have someone like (LT) because she's.*
> *RES: She's a good power around the school yeah, not like a classroom teacher hasn't got as much power as like a Deputy Head, and they'd always have meetings with the Head Teacher.*
>
> <div align="right">(Rowland Stu7)</div>

This accounts for RAG members' confidence that implementation was very likely (80%) as they believed her intensive support for the intervention would continue. But the support from wider staff would need to be carefully considered due to their prior reluctance to engage in supporting wellbeing. Other staff were conscious that sometimes buy-in for new initiatives can wane over time:

> *RES: I think the only downfall with anything is once something's started everyone starts off with great enthusiasm don't they and then sometimes it always sort of tails off and it's not really carried through.*
> *INT: Yeah.*

> *RES: But I think because we've had a strong start with this and it's also a good time of year because you know like the year elevens have gone so the school has sort of quietened down so there's time to focus on things like this.*
>
> *(Rowland Sta4)*

In Partridge, students thought plans would be implemented because the SMT had previously made changes based on student views, they had already realigned resources and time to developing the plan, and staff truly wanted to make the school a safe and happy place for students. For example:

> *RES: I think it's very likely because the way that we've like done it it's all been like planned really well, usually if like we do try and change stuff it's sort of really quick, we try to change it as soon as possible when sometimes that's like not like the reality and we have to take time to do it…So it's like we can actually make sure these plans are like happening.*
> *INT: Okay and we're going to take this to the senior management team so that's like the head teacher, the assistant head, what do you think will convince them to do these things?*
> *RES: I think it's because like the main issues that we've highlighted and they like will realise that these are things that can affect how school is for people so they'll like want to change the school that they work in.*
>
> *(Partridge Stu4)*

Again, this shows that students thought the intervention plan, coupled with the baseline context that student involvement was a visible important agenda, and their restorative whole-school approach resulted in a student population that felt cared about. The link between plan implementation and the conscious desire to ensure students were happy in the setting was also expressed by staff. However, akin to Rowland, there was a recognition that information about the plans needed to saturate the contexts. So, making school stakeholders aware of the changes being made, including the wider student population was perceived as imperative:

> *RES: … as soon as they know it [made decision to adopt plan], it'd be nice if they'd let us in on it …*
> *INT: Yeah, okay.*
> *RES: … maybe by doing via assembly or just posting it on the school website saying … we're going to start to do this and give maybe a date of when they're doing it or saying something like we'll update you when we're going to do it.*
>
> *(Rowland Stu7)*

These contextual differences also had consequences for resource allocation.

8.4.3   Adequate Resources to Fulfil Plans

All stakeholders, including students, raised a potential issue with resources to fulfil the plan activities. Most prominently, stakeholders talked about funding and time, with some stakeholders associating the likelihood of implementing actions with the size of change needed, as resources for smaller change or those that just involved teacher time were perceived as more manageable within settings:

> *RES1:   I think obviously like, obviously the plan I think is like ... what's the word I'm looking for? I don't know the word now, I had it in my head. Like it seems like it's easy to do, it's to carry out kind of thing.*
> *RES2:   Yeah.*
> *INT: Okay. And why do you think it seems easy to carry out?*
> *RES1:   I don't know. I just think like some of the things are just like simple things.*
> *INT: Okay, okay.*
> *RES1:   Whereas some of them aren't obviously but I think it's ... I think we have the facilities to do it as well, like the teachers and stuff like that.*
> *RES2:   Yeah.*
>
> *(Partridge Stu11&12)*

Resources were given as the main reason why Rowland felt they could not make clear commitments to adoption at the end of the co-production intervention.

> *RES1:   Yeah, they are, they're raised in governors meetings all the time about [toilet] improvements so, yeah, even though they might not be something that is actually coined on our school improvement plans, and that we've actually got to, you know, evaluate and monitor, they, they do form discussions that are actually making an impact on improving the school overall, but it's just, you know, as (SMT member) said time and money for things like that are really what holds you back. At the moment you are probably aware in terms of the funding across (Local Authority) for schools…*
> *RES2:   Yeah.*
> *RES1:   … we've all taken a real hit and that of course is going to make a huge impact on us wanting to do anything that sort of breaks outside of the realms of the expectations of the school which is a real shame, but you know, we live in hope that that might change in years to come.*
>
> *(Rowland SMT)*

The SMT felt the intervention needed to come with some resources, which has been the case in other co-production projects but was not possible here. They felt that a bidding process akin to the one outlined by the Welsh Government for the delivery of the New Curriculum in Wales would benefit this project and result in increased likelihood of action implementation. Again though, this can be perceived as a manifestation of the contextual issues for wellbeing because a stronger 'buy-in' for wellbeing may have meant the Rowland SMT redistributed resources to undertake some plan actions.

This link between baseline wellbeing context, utilising existing resources, and the likelihood of implementation was evidenced by the differing approach to funding in Partridge. Stakeholders' thought they could work harmoniously to realign resources to implement actions. For example, the SMT recounted several instances where they had already allocated resources to projects within the school which would affect wellbeing:

> RES2: The school, the toilets down that area, that was part of a student toilet project, erm, but I can't remember how many years ago, but the school contributed, er, £100,000 towards a school council led revamp of that area.
> RES1: It's about five years, it wasn't that long ago.
> RES2: Erm, and they were involved in the design and the… It's a shame really, particularly the boy's toilets are like they are now.
>
> *(Partridge SMT)*

It was also noted that the supra system funding for the two schools (being in different LA's) was very different. Whereas Rowland had just experienced harsh funding cuts, changes in the LA for Partridge meant an influx of money for the school was possible soon. Nonetheless, it was still important that the RAG staff saw the potential to utilise this potential school funding for the plan activities:

> RES: On that note, on that note, we talked about it last night in the meeting and they, well it's not official yet, but I'm pretty sure that this school's going to have a lot of money put into it …
> INT: Okay, yeah.
> RES: … right to become a three to sixteen school… I think there's a big possibility that that might happen.
> INT: Capacity for the dance space?
> RES: Yeah.
>
> *(Partridge LT)*

This was further extended in Partridge as a minority of students thought they could get involved in generating funding for plan actions.

> RES: … turn around the problem of funding, you could have students to do charity …and raise money, yeah… we can do money raising things to help.
>
> *(Partridge Stu7)*

This maps onto the finding that the school took a whole-school approach to wellbeing. All school stakeholders appeared to consider how they could be involved in obtaining or redistributing resources to increase the likelihood of implementing the plans health activities.

SMTs considered how to further motivate schools to implement plans that linked to school systems being autonomous but dependent on supra system processes.

8.4.4 Linking Co-production to Supra System Processes

In section 6.2.1.1, school engagement and readiness to address wellbeing through student voice was supported by the alignment of the project to wider supra system functions, such as Estyn monitoring school contributions to wellbeing. However, this alignment between the co-production intervention and the national priorities of the School Inspectorate could be more clearly articulated:

> RES1: But you could, it might be better to look at what the sort of pointers would be from Estyn about what the expectations are within care support and guidance for example and see whether elements of the action plan are meeting that…
> INT: Yeah.
> RES1: … criteria and then, as a school you're obviously, you can, you might be able to say well look, we are doing this, which meets this, which…
> INT: Yeah, so get them potentially to think about mapping it onto where it would fit, fit in?
> RES1: Yeah, just do it as an extra in school, yeah.
>
> *(Rowland SMT)*

SMTs thought mapping these overlaps would increase the likelihood of implementation in future interventions as the intervention could be a good evidence source to showcase to Inspectorates that schools were supporting student wellbeing.

Another drive for implementation in both schools was that SMT focus groups linked some of the plan actions to areas already highlighted as in need of change in their School Improvement Plans (SIP).

> RES2: I mean the stuff about improving, er, relationships with parents, that's one of our whole school priorities, that's on the SIP.
> RES1: It is, yeah.
> RES2: Erm, and improving teacher student relationship is also on our SIP this year.
> INT: I find it quite interesting that they do reflect some of the issues, erm, have raised things that…
> RES2: Yeah, that we're sort of actively addressing, erm, I'm trying to find that now, really, with relationships, yeah and we've got that in the actions that it's already on the school agenda for like parent communication and things like that.
>
> (Rowland SMT)

SIP in Wales is a national government agenda where schools are tasked with developing plans through self-evaluation, strategic planning, making improvements, and reviewing impact. These processes parallel the intentions of co-production. Hence, actions that confirmed the alignment of student views to adult priorities were welcomed by the school

decision-makers. However, the Partridge SMT highlighted the complexity of the SIP process and the need to ensure schools don't overstretch themselves.

> *RES1:   Now just to give you an idea, the school improvement plan, there are five sheets there which summarise key things which we do, alright? On top of that as well there's the PDG plan, there's an attendance plan, there's an EIG plan, there's a PDG class plan, there's a cluster plan which has got the wrong title on it there, so if I add all of that as well to that, you've got to be really careful about what we're actually trying to do, otherwise we spend all the time bloody planning and not doing, taking action.*
> *INT: Yeah.*
> *RES1:   Alright, but we spend, there's just so much stuff, alright, because a lot of these all require different types of approaches to secure funding, they require all sorts of different ways of approaching it and somewhere or another somebody's got to lead on all these different things as well.*
> *INT: Yeah.*
> *RES1:   So it's almost to a point where you can saturate yourself trying to do too many things without doing any of them well, which is probably the best way that I can say that. I have already spoken for the best part of an hour today on just the bullying one, in terms of our policies and that policy there which (other staff member) also led on in terms on reviewing that and in the next few weeks looking at whether that needs to change about writing child friendly policies, like [the plan] mentioned for bullying…*
>
> *(Partridge SMT)*

Also, the SIP processes were considered more encompassing as schools need to consider important foci, not just student wellbeing. Attending to the limitations of the intervention to tap into these supra system inspection and improvement processes before a plan was completed will be key to progressing co-production in Wales. How this will be achieved is discussed further in section 10.5 about aligning the intervention to emerging Welsh educational policy.

The potential to implement emergent wellbeing plans was considered through having the buy-in, continued enthusiasm, and adequate resources to fulfil them. Explanations for this mirrored the embeddedness and coupling of the co-production intervention with the baseline context. Rowland participants felt they did not have adequate resources and commitment, so implementation would rely on the LT continuing their intensive support without wider help, but Partridge stakeholders' thought they could work harmoniously to realign resources and think creatively about how the whole school could obtain further resources. Additionally, to solidify SMTs' investment in future implementation of resultant health activities, the

intervention tenets need to be more extensively aligned to wider supra system drivers such as School Improvement and Inspection processes.

8.5 Relevance and Implementation as dynamic concepts

As shown in section 8.1, the domain of social validity was constructed for the purposes of this process evaluation. The subdomains linked to whether plans were relevant to individuals, and the contexts they were produced in, and the likelihood of the resultant wellbeing activities being implemented. However, this section presents the social validity data highlighting that relevance and the likelihood of implementation were dynamic concepts situated in the complex nested systems schools are part of. It further considers the implications of this in terms of the need for wellbeing plans to be dynamic and the need to mitigate students' expectations of implementation.

8.5.1 The Need for Wellbeing Plans to be Dynamic

This chapter has shown the contexts surrounding schools affect their motivation and capacity to make decisions on school change to affect wellbeing. This is due to school systems being nested within supra systems, i.e. with Inspectorates and the Government, and because they have fuzzy boundaries with their parallel systems in the form of student's' families. Hence, their 'dependent but autonomous' nature can constrain decision-making. Additionally, data found that decision-making needs to be considered within a temporal lens. For example, many stakeholders recognised that not all planned activities were new, acknowledging the intervention was being placed into an already functioning system with a history of adaptation and change. The plans did help to concentrate on issues that were currently important to students though:

> INT: *How likely is it, do you think the things will be implemented on this plan?*
> RES: *I think it's very likely yeah, I think, I think a lot of the stuff we do already but maybe we just need to focus in a bit more on things.*
> INT: *Yeah.*
> RES: *So yeah I think definitely yeah.*
>
> *(Partridge Sta3)*

Cognisant of this, stakeholders noted that plans should not be viewed as a static product, as the system in which the plan is to be implemented is itself constantly evolving its membership and hence needs:

> RES: *Erm you know things might change, you know different staff come in in September, well we're not expecting any changes but you don't know you know, staff could change they could come in with different ideas, they might not want*

certain things to be run you know certain things could be scrapped all together anyway. ... there's going to be bumps in the road and things that you have to overcome. It might be that the students change their mind and say well what have we changed this for or in the wellbeing you know then you said this, no I didn't, well this is just, so that might be an issue yeah students who weren't involved might say well why wasn't I given a say you ..., you'll have a new bunch of year sevens coming in as well so yeah definitely.

<div align="right">

(Rowland Sta4)

</div>

It was thought that plans would need to be dynamic and amended in light of changing constraints such as staff time. Again, these resource issues were more of a consideration in Rowland than in Partridge. Also, there was an appreciation that implementation needed to be dynamic too, because plans had been developed with the belief that solutions were relevant, but it was recognised that outcomes were emergent and unpredictable. So, during and post-implementation the resultant changes would need to be reviewed. For example, reviewing what worked well or led to unintended consequences:

> RES: *Yeah, just, I think trying this, and if we can go, look at this plan again, and then right, that wasn't very good, that wasn't very good, that wasn't very good, don't do that, this was good, we should keep doing that, that really worked, doing things like that.*
> INT: *Yeah.*
> RES: *Yeah and you can, at that point, you may have done a survey or something, like certain feedback yeah.*

<div align="right">

(Rowland Stu2)

</div>

With this in mind, students particularly wanted their involvement to continue so that they could monitor implementation progress and make further decisions if and when they were needed. Suggestions were given on how this could be achieved including maintaining the RAGs:

> RES: *Well everyone's time to actually do this because we've got five things, six things here.*
> INT: *Yeah. So what do you think about having five things to do?*
> RES: *We'd need to have five groups.*
> INT: *So you think we need to have a group to follow, do we need to have groups then?*
> RES: *Well we don't really need to have groups but it'll possibly be easier because one group can work on sleep, one group can work on bullying, student teacher relationships, equality and all that.*

<div align="right">

(Partridge Stu8)

</div>

Staff were conscious that they may need to take the lead but were eager to involve students in the monitoring of implementation in Partridge.

> *RES: I think they'll be driving it, but I think sometimes staff have got to do some of the logistics because ... the pupils aren't going to be able to do it .I think that's the difference ...*
> *INT: Yeah, yeah, okay.*
> *RES: ... and the school council will obviously be part of it because a lot of the pupils, some of the pupils who are on the school council, but how this actually goes forward next year with being implemented is going to be interesting... as with respect to do the pupils take a massive role or do the teachers have to do a massive role ...because that's the way it works.*
>
> *(Partridge LT)*

This is in line with previous co-production studies, which had seamless implementation after health activity development, and RAGs monitored progress. It aligns school decision-making to a participatory research action approach where continual cycles of planning, acting, and reflecting are paramount. It also responds to the dynamic needs of school decision-making.

Hence, plans need to be conceptualised as working documents, as continual school change and reflection on implementation will affect future relevance and the likelihood of future activities being implemented. Considering this, the utility of social validity to assess plans at a certain time during co-production studies is debatable and will be discussed in section 10.3.3. Further, acknowledging the complexity of school decision-making also requires researchers to mitigate against raising student expectations of change falsely.

8.5.2   The Need to Mitigate Student Expectations of Implementation

This chapter has shown that students believed that the plans would be implemented and were eager to continue their efforts by fundraising for activities and by continuing their roles so they could monitor plan implementation. It was recognised that students were very committed to these co-production projects.

> *RES4:   The pupils worked really hard on this didn't they?*
> *INT: Yeah, they did.*
> *RES4:   The pupils really did work hard and they all got engaged and they were all enjoying it.*
> *INT: Yeah, the photography was fantastic.*
> *RES4:   all the really valuable contributions it was good.*
> *RES1:   Yeah.*
> *RES: the points and actions are all, you know, really good.*
> *RES1:   It's got real currency this, for us to say this is why we're doing it so that's good.*
>
> *(Partridge SMT)*

They openly stated they wanted to take part in the projects due to their altruistic nature and because they wanted to make improvements for themselves and their peers. They had given their time to develop their understandings of wellbeing through photography and engage in individual one-on-one photo elicitation interviews with the researcher. Some of these were deeply personal accounts of their lived experiences of bullying or difficulties obtaining disability support. Also, their behaviours during the interventions implicitly demonstrated their enthusiasm and deep engagement with co-production:

> *(Stu4) and (Stu7) were very prompt and showed up eager to crack on with the work. (Stu4)'s enthusiasm particularly has been shown throughout the project as she repeatedly asks (LT) when the next session is. The momentum of the project does not help with this as (Stu4) had a long time between photography and the first meeting because she was one of the first students to undertake the photography. Also, (Stu7) was unsure whether the meeting was taking place, so he said he went to see (LT) to check.*
>
> *(Rowland Meeting 3 Observation)*

Through the projects, students felt they learnt about school-decision-making and how difficult it was to undertake activities in the school. This was developed through the time they spent with teachers discussing the potential for change, activities they believed they would not have been privy to without this co-production intervention. Understanding the complexities of school decision-making did go some way to mitigating false hope. Teachers also constantly reminded students of the realistic and feasible nature of the changes they wanted to make. Additionally, the researcher was very clear that plans would go to the SMT to be considered before they would be able to report back what would be adopted. Still though, students had a clear belief that SMTs would take on their ideas:

> RES: *I think it's because like the main issues that we've highlighted, and they like will realise that these are things that can affect how school is for people so they'll like want to change the school that they work in.*
>
> *(Partridge Stu4)*

Therefore ultimately, the co-production projects did raise students' expectations that change would happen and will need to be mitigated better in future interventions. How this can be achieved is considered in section 9.1.

8.6   Summary

Both measures of social validity were scored highly by RAG members, although stakeholder interviews and focus groups demonstrated views were mitigated. In terms of relevance, the contextual difficulty in both schools to align the intervention to parents resulted in a failure to prioritise issues that crossed home-school boundaries. The functioning of the decision-

making mechanisms also had consequences for relevance. In Partridge, the omission of a mental health priority was attributed to lack of student diversity, and in both schools problem-solving stalling points accounted for issues with the relevance of solutions.

Likelihood of implementing emergent plans was mitigated through contextual conditions with explanations mirroring the embeddedness and coupling of the intervention with the baseline context. Hence, Rowland participants felt they did not have resources and commitment, so implementation would rely on the LT continuing their intensive support without help, but Partridge stakeholders' thought they could work harmoniously to realign and obtain resources. To solidify SMTs investment in implementation, co-production should be more extensively aligned to wider supra system drivers.

Relevance and the likelihood of implementation were also considered as dynamic concepts in complex nested systems, which meant plans need to be conceptualised as working documents, and there is a need to mitigate against raising false student expectations. These issues and those outlined in the preceding two findings chapters will be consolidated to refine the intervention in the succeeding chapter.

9   Chapter 9: Refinements to Co-production Theory

This is a short bridging chapter between the process evaluation results and the discussion of the implications of this intervention development study. It draws together the three process evaluation findings chapters to refine the initial co-production theory outlined in Chapter 4. It commences by setting out five recommendations to refine the programme theory in section 9.1. Within each recommendation there is a statement of change, a contextualising of the recommendation through the process evaluation data, links to literature where they have been found, and an articulation of how these new or adapted functions or mechanisms are proposed to work. It continues in section 9.2 by defining all the resultant intervention functions and mechanisms; embedded within this section is a modified logic model to show changes to the initial theory. Section 9.3 then reflects further on these recommendations through providing a synopsis of the final stakeholder involvement session with ALPHA (Advice Leading to Public Health Advancement) to outline the refined descriptors of fidelity, and the multiple, potential forms for school-based co-production. The chapter closes with a modified Function and Form Matrix to elaborate on the multiple forms that may be tailored to contexts to allow intervention functions to be delivered.

9.1   Recommendations for Changes to Intervention Functions and Mechanisms

Results from all three chapters were collated to make five recommendations to refine and produce effectual programme theory for school-based co-production. This was achieved through producing a recommendation memo at the end of the analysis procedure for the process evaluation data. The memo consisted of the original intervention theory (Figure 1, section 4.4.2.3) and summaries of the main findings for the three process evaluation domains. Further notes were made on the linkages between evaluation domains and their impact on functions and mechanisms in the original theory. The last step was to return to the research on school-based co-production studies found in the systematic review and the wider literature on complex systems thinking and co-production to check for crossover with findings. Changes to the functions and mechanisms are presented in the modified logic model in red (Figure 8).

The first recommendation is to introduce a function to pre-assess contextual alignment with the tenets of the intervention in terms of wellbeing and stakeholder participation. This has been termed 'Intervention Readiness' and is ideally conducted with the LT with SMT

oversight. Throughout chapters, the embedding and coupling of the intervention with the baseline contexts has had multiple consequences for the functions, mechanisms, and the output of co-production, most noticeably the lack of adoption of any resultant health activities in Rowland. Cognisant that prior system thinking literature has already suggested this as a foremost activity (Hawe et al. 2009), this thesis specifies the pre-assessment lens for this activity should be focused on the key actors and activity settings linked to student wellbeing and stakeholder participation. The use of appropriate activity settings to inform actors across the school of the intervention and recruit key agents from the substructures of wellbeing and participation will hopefully result in the extensive embedding of co-production in schools.

The second recommendation links to working with SMTs in a more consistent manner by moving between RAG decision-making and SMT commitment in progressive stages. The intervention was conceived originally as temporally sequential with all RAG functions preceding School functions. SMT worries in Partridge about the omission of addressing mental health problems, and the issue of mitigating false expectations demonstrate the limitations of this. For example, the overall mechanism of empowerment could be seen as being conceptualised through a static, economic model characterising power as a commodity (Prout and Tisdall 2006; Gallagher 2008a) transacted from the SMT to the RAG. An attempt to employ a relational understanding of power exercised through separating the strategies and counter strategies used during decision-making was made (section 7.4.2). However, this relational understanding of power should be expanded to the relationship between the SMT and RAG. New suggested functions for SMTs are to reflect on RAG diversity and accept RAG priorities before the groups make concerted efforts to form full plans. This would minimise the number of priorities RAGs would need to focus on too. Additionally, assessing social validity with all RAG members and SMT could be an intervention function before implementation begins to ensure plans are as relevant and implementable as possible. Aware that relevance and implementation may change over time, this can still provide clarity that the plans are fit for purpose before adoption (see section 10.3.3 for further discussion).

| RESOURCES | SMT FUNCTIONS | RAG FUNCTIONS | MECHANISMS OF CHANGE | OUTPUT | SMT & RAG FUNCTIONS | OUTCOMES |

External Facilitator; School Data; Structured Process; Meeting Task Manual

INTERVENTION READINESS: Assess baseline context for wellbeing & participation. Extensively embed intervention and understanding as system-level project.

DIVERSITY CHECK Assess RAG to check diversity of members.

VERIFY PRIORITIES Assess priorities to ensure realistic and most important to focus on.

RECRUITMENT Recruit a diverse group of school and community personnel, and students.

PROBLEM-SETTING Develop an understanding of wellbeing problems and how they manifest within the school to decide on health targets.

PROBLEM-SOLVING Work with intervention teams and other schools to develop ideas of how to change the wellbeing problems and decide on the most feasible.

GROUP DEVELOPMENT Develop the group understanding of intervention, and their social relationships

All the different opinions in the school community are represented during decision-making.

All RAG members build good relationships and understanding of the intervention to support shared decision-making.

The group feel informed about wellbeing and their school and are supported to make decisions.

Action group members feel empowered, and they have been given the opportunity to participate in shared decision-making throughout co-production.

School Wellbeing Intervention Theory/ Action Plan

SOCIAL VALIDITY Assess validity of solutions.

ADOPTION School Decision-Makers are presented with plans and incorporate into School Planning.

IMPLEMENTATION School /RAG implement and monitor plan implementation.

EVALUATION Positive changes in wellbeing outcomes

Figure 8: Refined Logic Model for System-level Capacity-Building Co-production

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The third recommendation is to transform problem-solving through altering activities, resources, and increasing stakeholders. Stalling points in activating the mechanism for groups to feel informed and able to make problem-solving decisions were present and outlined in Chapter 7. This resulted in the need for major in-situ adaptation during delivery, which was shown in Chapter 6. These adaptations were not effectual in fully resolving issues, as relevance of plan solutions were critiqued post-intervention as found in Chapter 8. To combat these, it is proposed that future iterations have problem-solving activity days outside of schools following the verification of priorities by SMT's. RAGs would work in conjunction with intervention teams with the time and expertise to support the cognitive demands of solution development, and cross-school knowledge and practice sharing could take place. Activities can also be refined to allow RAGs to better understand and develop their school knowledge and critique their ideas to ensure actions form with clear intervention logic (Bonell et al. 2015; Fletcher et al. 2015). The latter will also be helped by RAGs focusing on fewer priorities, as suggested above, concentrating on depth of knowledge about intervention targets rather than breadth.

The fourth recommendation is to better communicate the intervention as a system-level capacity-building project which should involve staff, students, and external stakeholders working together to achieve wellbeing outcomes. Overlapping issues with stakeholders understanding the intervention in terms of student councils, the indifference of some Rowland teachers to attend meetings, and lack of endeavour to recruit from the community can all be partially attributed to the aligning of the intervention with the 'student voice' agenda. This agenda originally engrained a separatist approach in Wales highlighted in School Council (Wales) Regulations (Welsh Assembly Government 2005) as only students with one guiding teacher were required on these structures. Although newer policy such as the School Effectiveness Framework (2008b) expanded the student voice agenda to encourage schools to listen to all learners and staff on all matters that affect them, some residue of the reductionist understanding of involving students appears to remain. Linking co-production closer to School Improvement and Inspection processes as well as more nascent policy in terms of the new Curriculum in Wales (Welsh Government 2019) may go some way to addressing this. This will be discussed more fully in section 10.4 about Implications for educational policy and practice.

A final recommendation is to retain the researcher and RAGs within schools during adoption and implementation functions. This would mitigate against raising false student expectations, support the monitoring of implementation, and support schools to ameliorate barriers to funding resultant health activities. Either researchers could support schools to apply for funding to enact activities or have readily available intervention costs built into upscaled trials of co-production. This has been achieved in other co-production projects (Bond et al. 2001b; Glover et al. 2002; Mino 2003; Poulin and Nicholson 2005; Bonell et al. 2010a; Bonell et al. 2010b; Davison et al. 2011; Bonell et al. 2015; Fletcher et al. 2015; Hawe et al. 2015) but will be dependent on research funders supporting such use of budgets. Further, RAGs could revisit plans periodically to consider the changing dynamics of the school, i.e. changes in staffing, or to understand the consequences of prior implemented activities, i.e. how they worked, any emergent, unintended consequences, and whether the priority needs to be further addressed.

9.2 Refining Intervention Functions and Mechanisms

Integrating the recommendations into the original co-production theory results in changes for functions and mechanisms as follows (changes in red). SMT functions will include Intervention Readiness, Diversity Checks, and Verifying Priorities. RAG functions include Recruitment, Group Development, Problem-Setting and Solving. Following, combined functions will be to Assess the Validity of Solutions and their Adoption and Implementation. Cognisant that interventions should be conceptualised as events in systems (Hawe et al. 2009), the functions are defined as:

1. Capacity-building - How stakeholders are enabled to undertake intervention co-production within the school system.
2. Structure - How stakeholders are connected within the system through the RAG subsystem.
3. Intervention Readiness – How the intervention couples with and is embedded into the baseline context.
4. Recruitment – The development of new activity settings or events if a necessary structure does not already exist.
5. Diversity Check – Whether the RAGs reflect the diversity of the school's baseline context.

6. Group development - The development of social relationships between co-production stakeholders in RAGs, and their understanding of the intervention.

7. Problem-Setting - How stakeholders produce an understanding of how health problems manifest in schools and decide health priorities.

8. Verify Priorities – How the SMT assess the priorities to ensure they are the most important and realistic.

9. Problem-Solving – How stakeholders understand their school context and work with the public health intervention teams to decide solutions to redress problems.

10. Social Validity - How the SMT and RAG assess the validity of solutions.

11. Adoption - Whether and how SMT incorporate priorities into School Improvement Processes.

12. Implementation – How resultant health activities are delivered so they saturate the context and are monitored by RAGs.

13. Evaluation - How the changes in health outcomes are assessed.

Upstream mechanisms have been modified as follows. RAGs need a diverse set of members to allow all the opinions in the school to be represented during decision-making. They need to understand the intervention they are part of and build good relationships to work together to share decision-making. Throughout problem-setting and solving RAGs need to work iteratively with SMT's. The groups will need to develop an understanding of wellbeing problems and how they manifest within the school to decide on health targets. Further, they are required to understand school functioning in terms of staff roles and responsibilities so they can work jointly with public health experts to make informed decisions on solutions. Combined this should lead to RAGs feeling empowered to participate in school decision-making whilst being realistic about the limitations of change.

The next section will reflect further on these recommendations to outline the refined descriptors of fidelity, and the multiple, potential forms for school-based co-production.

9.3   Refining Intervention Descriptors of Fidelity and Forms

The preceding section outlined five recommendations to refine programme theory for school-based co-production showcasing how this modified intervention functions and mechanisms. Enacting these and assessing enactment of the functions through the intervention forms and

fidelity descriptors, respectively, is further explored in this section. Forms have been defined in this thesis as the adaptable activities in which to enact functions, whilst descriptors of fidelity are descriptions of how the intervention is intended, which can enable future researchers to assess implementation. To refine these the researcher collated understandings of how interventions worked in the two case study schools, researcher knowledge, and young people's understandings in the final stakeholder involvement session. What follows is a synopsis of the stakeholder involvement session with the young people from ALPHA which was conducted online through Mentimeter (due to COVID restrictions). It covers the issues of recruitment and diversity, clarity and understanding of the intervention, and how to undertake problem-solving activity days. It is followed by a refined Function and Form Matrix (Table 29), with changes again highlighted in red.

Regarding the recruitment and retention of older students, ALPHA felt student involvement needed to be incentivised, the project benefits of enhancing CVs or application forms emphasised, and the meetings should start earlier in the year to avoid the main exam periods. The latter they felt had implications for recruiting schools in the prior school year so the intervention could begin promptly in September. Also, they felt the recruitment of a youth engagement officer, youth mentor, or wellbeing officer who worked with struggling or less engaged students would support diversity. These members of staff could be responsible for approaching those students and attend meetings with them so they would feel less intimidated during group meetings and supported to participate. Finally, ALPHA advised students may not want parents at meetings and that parents would not be able to attend during the day anyway, so parental engagement could be online to collect their ideas for RAGs to consider during problem-setting and solving.

To address the understanding and clarity of the intervention, they agreed that intervention information needed to be transparent that this was not a school council and emphasise the distinctions. They felt the researcher needed to consistently reiterate this with all members of staff and students when embedding the intervention. As system-level capacity-building co-production is not a user-friendly term this needs to be modified for stakeholder use to give a clear, coherent idea of what the project is. They advised this could be through focusing on the intervention tenet of wellbeing, which they felt should be emphasised by providing

training in schools on wellbeing, the benefits to tackling this, and give examples of how this has been done in other schools.

Overall, the young people felt having problem-solving activity days was a very good idea. When enacting the activity days, they felt schools should send their priorities through to intervention teams in advance. This would allow them to collect examples of how they have been tackled in previous interventions or schools, even if an evaluation has not been conducted. They also thought the events should be held during the school week to increase attendance of RAG members; that school numbers are limited, so there is enough time for each school to work with the public health experts; and that schools could be matched through criteria, such as geographic location or even similarity in priorities.

Table 29: Function and Form Matrix for Co-production

Functions (standardised)	Descriptors of Fidelity	Forms
Capacity Development	1. Recruit schools.	a. Send information through national infrastructure i.e., SHRN in Wales but could be Inspectorate.
Intervention Readiness	2. Assess the baseline context of wellbeing and student involvement.	a. Meet with SMT, staff and students to ask them about the functioning of wellbeing and student involvement. b. Audit wellbeing and student involvement policies. c. Get access to the schools SHRN School Environment Questionnaire.
	3. Extensively embed the intervention into the subsystems of the SMT, wellbeing teams, teaching faculties and administration staff.	a. Recruit a LT who is part of or very closely linked to the SMT. b. Meet with the Wellbeing Team to inform them of the intervention and the need for dispersed responsibility to support the researcher to rollout co-production. Ask SMT if they have routine data they would like the RAG to consider. c. Inform whole of SMT about intervention through a presentation from the researcher. Include research evidence to increase intervention credibility. d. Inform all staff, including teaching faculties and administration staff of the intervention and how they can support rollout i.e. checking information systems to verify when students need to be released from form time or lessons for the intervention. e. Run training with staff on wellbeing, the benefits to tackling wellbeing and examples. f. All information should link to system-level capacity-building to ensure the RAG involves multiple school and community stakeholders.
Recruitment and Diversity Check	4. Recruit a minimum of 3 school staff	a. Recruit wellbeing staff. b. Recruit youth worker or mentor from the school. c. Attempt to recruit staff who teach for part of the time.
	5. Recruit a minimum of 10 students.	a. Students nominate staff. b. Assemblies delivered to offer all students the chance to take part or information given in form time. c. Youth worker staff or wellbeing officers to approach less engaged students or those who are struggling in school to take part.
		a. Nomination boxes in school – check is kept in place throughout recruitment. b. Students asked to write why they would be good at role.
	6. Recruit a minimum of one community member	a. LT to consider who externally can be involved. b. Students nominate external staff. c. Potentially utilise online methods to get the perspectives of parents even if they cannot attend

		meetings.
	7. SMT to check the diversity of the group against the student population.	a. LT and researcher meet with the SMT giving an overview of who has been recruited.
Group Development	8. Increase RAG cohesion and understanding of the intervention.	b. Delivery of student assemblies and form time already informed RAG members of intervention. c. Also, can deliver Question-and-Answer sessions, and one-to-one meetings with the researcher. d. Voluntary to run ice breaker sessions if group want and need them.
Problem-Setting	9. Accessing school-level health data to understand wellbeing	a. Research agreement signed by SMT in each school. b. Access tailored school reports from SHRN about student data.
	10. Involving RAG students in photography to understand wellbeing	a. Meet student so they can understand photography task. b. Students engage in photography to develop their wellbeing dataset. c. Students meet researcher to conduct photo-elicitation interview about their dataset.
	11. Involve at least 2/3 of the RAG members in the two meetings.	a. Meeting 1: Present school-specific wellbeing theme cards with photography and survey data. Split into three groups (young, older and staff) for theme ranking. b. Meeting 2 Verify top 5 wellbeing themes scored from last meeting.
Verify Priorities	12. Assess priorities to ensure realistic and most important to focus on.	a. Meet with SMT to discuss the top priorities and get them to commit to at least two. b. Report back to RAG what SMT think about top priorities.
Problem-Solving	13. Involve at least 2/3 of the RAG members in the external activity day event.	a. Invite similar schools to a whole day event with intervention team to support problem-solving. b. Inform intervention team of the top priorities for each school so they scope research and practice examples for solutions. c. Run event sessions to brainstorm solution activities and action plan considering removing irrelevant solutions, unintended consequences, and a need for shared responsibility. d. Meeting 3: Finalisation Activity to verify whole plan.
Adoption	14. SMT to assess solutions and commit to taking some forward.	a. RAG present plan to Decision-Makers b. Assess Social Validity of plan solutions. c. SMT incorporate priorities into School Planning where possible.
Implementation	15. Support and Monitor implementation of activities that RAG can oversee.	a. Maintain Researcher and RAG to support and monitor implementation. b. Obtain funding for activities. c. Rollout activities.
Evaluation	16. Assess wellbeing changes.	a. Assess wellbeing pre- and post-co-production with school survey.

9.4 Summary

The chapter sought to articulate the resultant intervention properties emerging from this two-phase mixed methods intervention development study. The final system-level capacity-building co-production theory was demonstrated to have 13 functions shared between the research team, the school's RAG, and the school's SMT. Further, four refined upstream decision-making mechanisms were elaborated to allow the empowerment of RAGs to be able to take part in school decision-making and support the development of school-specific wellbeing plans. Also, it has considered the multiple forms that can be used to enact functions and the refined descriptors of fidelity that can be used to assess future co-production implementation. The succeeding and final chapter will discuss the implications of this study.

10   Chapter 10: Discussion

This thesis is one of the first systematic attempts to build and refine programme theory for school-based health interventions developed through co-production. This chapter will outline the implications of this. Section 10.1 begins with a synopsis of the study aim, rationale, and findings. It is followed by section 10.2, which outlines the strengths of the study and its contribution to the co-production of school-based MHWB (mental health and wellbeing) interventions, including the conceptualisation of co-production, the types of co-production distinguished and defined, and the functions, mechanisms, and forms for the system-level capacity-building type. It further situates this thesis in relation to recent progressions in the field. The following section, 10.3, outlines implications for intervention development by considering the debate around the balance of academic versus contextualised theories. It also considers the utility of intervention development guidance and the domain of social validity within intervention development. The chapter continues in section 10.4 by reflecting on operationalising complexity within intervention research in terms of understanding settings as CASs (Complex Adaptive Systems) and using a functional view of interventions. Section 10.5 then considers the implications for educational policy and practice in Wales. Section 10.6 closes the thesis by reflecting on the study limitations and recommendations for future research.

10.1   Revisiting the Thesis Aim, Rationale and Overall Findings

The thesis aim was to develop programme theory for the co-production of school-based health interventions. The thesis rationale outlined an emergent drive to utilise co-production as a vehicle to incorporate contextual understanding during intervention development. It was postulated co-production can increase the likelihood of intervention relevance, implementation, and produce better outcomes (Craig et al. 2008) as contextual and pragmatic facilitators and barriers are foreshadowed (Gitlin 2013). However, whilst the drive for involving stakeholders was augmenting, there remained equivocality in terms of the understanding of co-production, the different types, their intervention properties, and stakeholders' experiences of them.

This served as the purpose of the current thesis which utilised a mixed methods intervention development study of co-production underpinned by complex system theory. Two sequential research phases structured through the key actions in intervention development guidance

(O'Cathain et al. 2019a) were undertaken. Phase 1 built co-production theory, principally through the results of a systematic review of co-produced school-based health intervention studies with a thematic synthesis of stakeholders' views. 30 papers detailing 22 studies were used to describe types, underpinning theory, and intervention properties. A subset of 23 papers representing 18 studies about stakeholders' experiences were synthesised. Whilst three types of co-production were found, the system-level capacity-building type was accepted for phase 2 due to the strength in the evidence base about this type. To achieve a clear articulation of system-level theory, the systematic review results were complemented by data from stakeholder involvement sessions with young people and a pilot of participatory data production methods in a secondary school.

Phase 2 refined this theory through a mixed methods process evaluation of the delivery and functioning of co-production in two case study secondary schools. Four key uncertainties identified in the systematic review informed the evaluation. They were: the lack of focus on complexity in prior process evaluations of school-based co-production; omission of a clear understanding of the problem-solving function of co-production; neglect of assessing the theoretical upstream pathways for successful co-production; and the lack of knowledge about the utility of data production forms to understand school wellbeing. A process evaluation framework that focused on the four domains of implementation, context, mechanisms of change, and social validity was utilised.

Process evaluation results led to five recommendations to refine the co-production theory. First, intervention embedding and coupling with baseline contexts moderates intervention success, so should be assessed before co-production. Secondly, decision-making cannot be transacted wholly to RAGs so on-going collaboration with SMT is required. Thirdly, to ensure multiple RAG stakeholders are recruited and avoid a narrow focus only on students, communication with schools should centre on the intervention being a system-level capacity-building project, which should involve staff, students, and external stakeholders working together to achieve wellbeing outcomes. Fourthly, the most challenging RAG function of problem-solving has been transformed to include intervention team support in school activity days. Lastly, the retention of researchers and RAGs during implementation is necessary to address the dynamic nature of schools and their wellbeing contexts and the resultant

intervention effects. Stakeholder involvement and latent researcher knowledge were also utilised to amend intervention descriptors of fidelity and forms.

10.2   Implications for the Co-production of School-based Health Interventions

The study implications are elaborated in this section. It opens by providing knowledge on the conceptualisation and types of co-production. It continues by elaborating on the functions and mechanisms found for the system-level capacity-building type, as well as two intervention forms in terms of undertaking problem-solving and what photography adds to co-production studies with young people. The last section situates study learning within progressions in school-based co-production since the systematic review in February 2018.

10.2.1 Conceptualising Co-production

The present thesis differentiates a type of contextualised involvement at the individual school setting level from broader approaches to develop standardised programmes (e.g. Hawkins et al. 2017). The study avoided the problematic issue of adopting an overly expansive or narrow definition of co-production through utilising core functions rather than a single definition. This allowed co-production to be conceptualised as the complex approach it is, while circumventing the definitional issues currently debated in health research circles (Oliver et al. 2019; Williams et al. 2020b), specifically the phenomena of 'cobiquity'.

Complexity was captured by allowing the forms and the stakeholders involved in co-production studies to fluctuate. Cobiquity has been defined as a conflation of any collaborative practice, where two different types of stakeholders are brought together, with co-production (Williams et al. 2020b). Williams et al. (2020b) argue this overlooks the egalitarian and democratic rationale of co-production, with the threshold they implicitly set for collaboration to tip into co-production appearing to be at the level that stakeholders are involved in making key decisions. Whilst this is an accurate reflection of the threshold between these practices, it does not have merit alone in distinguishing what is or is not co-production unless the key decision-making processes are defined. This was achieved through setting the decision-making functions as problem-setting and solving which were scoped from the wider public health intervention literature (Hawe 2000; Bond et al. 2001b).

Specifying decision-making processes has been omitted in healthcare and policy co-production as far as the researcher is aware, but this may help to balance the democratic (those without power trying to gain greater influence) and technocratic (those with power seeking out public insights as they are instrumental for changing services) drives for involvement (Martin 2008; Williams et al. 2020a). This is because pre-specifying what decisions are involved in co-production allows the agency of individuals usually excluded to be expressed, whilst ensuring decision-making processes adhere to structural boundaries for settings. However, this may be easier for co-producing school-based interventions due to the uniqueness of it spanning the distinct policy areas of education and health (Murphy et al. 2021), allowing the health researcher to be an impartial knowledge broker in the education setting between the powerful SMT and those traditionally excluded in school-decision-making, primarily young people. This impartial other is often not afforded in healthcare policy and research, as policy staff or researchers are often also the decision-makers. Again, having an impartial person may address some of the technocratic problems with co-production, i.e. the personal and professional costs to researchers undertaking drawn out research processes because of the need to involve stakeholders (Oliver et al. 2019).

10.2.2 Types of Co-Production

Standardising the capacity-building function also supported the distinction and modelling of three different types of co-production (Appendix E) in the phase 1 systematic review. The three types were: external, which built capacity outside of schools via increasing facilitators' knowledge of co-production activities; individual-level, that supported the development of student researchers or leaders; and system-level, which involved the development of structural capacity in the form of RAGs with multiple stakeholders.

The decision to accept the system-level capacity-building type for phase 2 was taken due to the strength of the evidence base demonstrated through quality assessments and stakeholders' views. The quality of the system-level co-production interventions were appraised as strong, due to knowledge accreting in four studies as they were iterations of the same project (Bond et al. 2001b; Glover et al. 2002; Bonell et al. 2010a; Bonell et al. 2010b; Davison et al. 2011; Bonell et al. 2015; Fletcher et al. 2015; Hawe et al. 2015), with the two most contemporary studies being extensive mixed methods process evaluations with a multitude of stakeholders (Bonell et al. 2010a; Bonell et al. 2010b; Bonell et al. 2015; Fletcher et al. 2015). Further,

stakeholders' views showed limited issues with decision-making, which partially accounted for the increased likelihood of health activities being adopted and implemented in comparison to other types.

10.2.3 Functions and Mechanisms

This study has brought further clarity through developing and refining co-production functions and mechanisms. Regarding functions, the original nine synthesised through the systematic review section 4.4.2.3 were extended and further elaborated in section 9.2, resulting in 13 that were termed: Capacity-building; Structure; Intervention Readiness; Recruitment; Diversity Check; Group Development; Problem-Setting; Verifying Priorities; Problem-Solving; Social Validity; Adoption; Implementation; and Evaluation.

Regarding mechanisms (see section 4.4.2.1), the systematic review found a plethora of theories, frameworks, models, and research were drawn on in system-level capacity-building co-production studies to articulate change theory. However, upstream pathways in terms of the RAG decision-making processes were neglected. This necessitated the extrapolation of action competence (Simovska and Jensen 2008) to the RAG group setting, and the need to attend to the relational and emotional elements of co-production (Clarke et al. 2019) within the change theory. This positioned mechanisms as one of the four key uncertainties remaining after the systematic review (O'Cathain et al. 2019a), giving focus to the process evaluation. Whilst the number of mechanisms remained consistent at four throughout the study, the process evaluation provided clarity at two levels that will support better decision-making (section 9.2). First, school stakeholders need a clearer understanding of system-level co-production to ensure RAG diversity. Secondly, RAGs need to understand their school contexts better to be able to make problem-solving decisions with intervention researchers.

Overall, the RAG mechanisms are that RAGs need to feel empowered to participate in decision-making. This is achieved by having RAG diversity, so all opinions are considered during decision-making, and developing groups, so intervention understanding and relationships support decision-making processes. Working iteratively with SMTs, RAGs need to be informed and understand their school wellbeing problems and how they manifest to decide on health targets.   They are also required to understand how their school functions so they can work jointly with public health experts to make informed decisions on solutions.

10.2.4 Developing Knowledge of Forms

In terms of forms, which are the potential activities that can be utilised to enact functions, knowledge about problem-setting and problem-solving forms has been developed. This addresses two of the key uncertainties found after the systematic review.

The first is the utility of photography to support students to elicit their understandings of wellbeing, which informs RAGs of their schools' wellbeing context to make problem-setting decisions. Multiple forms of data production were found in the systematic review, inclusive of needs assessments/surveys, audits of policies and practices, mapping hotspots, and student photography with staff social network analysis. However, there was an omission of assessing the utility for all except the needs assessment surveys. The utility of photography started to be assessed prior to this PhD through a small pilot study (section 4.3) with 14 students aged 12-13, although this was not part of a co-production intervention so was revisited in the process evaluation.

When considering the enactment of photography with students, the process evaluation found three main findings. First, photography was perceived as an acceptable, enjoyable task which drew some students into the intervention and translated into students wanting to produce their wellbeing themes. Secondly, variability existed between students on their understanding of, and ability to, elicit their wellbeing representations. This was addressed through multiple support strategies and the use of photography, which immersed students in the school environment triggering wellbeing ideas. Thirdly, negotiating students' involvement parameters, for example, working individually or in pairs, as well as having an external researcher conduct individual elicitation interviews, were of paramount importance to students. However, the time needed to involve 22 students who had other school priorities in photography meant some intervention lag was found.

This prolonged work and time was justified as the usefulness of photography themes to support problem-setting was reported as very high in both schools. Staff felt photography was powerful as it provided a personal, affective understanding of student wellbeing, and their surprise at some issues raised demonstrated the value of using a bottom-up form of data production. However, it was acknowledged that priority decision-making was not possible without the school survey/needs assessment and the RAG discussions. The former positioned

students' understandings of wellbeing in the context of the whole school, while the latter was important for staff to ask further questions where needed. Photography, as demonstrated, is useful as part of a range of methods to support problem-setting.

The second key uncertainty was to address the opaqueness of problem-solving forms found in the systematic review. Six of the seven system-level studies reported group discussions were used; however, only two stated theory, research, or practice examples were scoped to support decision-making discussions, and one advised brainstorming was used. Due to this opaqueness, the researcher developed problem-solving activities by drawing on brainstorming and action planning techniques. Emergent challenges faced in the two case study schools led to the decision to refine problem-solving through having activity days with intervention teams. Teams should be informed of school priorities in advance so they can scope research and practice solutions, or where these do not exist, can use their latent knowledge to develop solutions with clear logic. Brainstorming sessions were also elaborated on so that RAGs considered the main solution validity issues found in the process evaluation. These were removing irrelevant solutions, considering unintended consequences, and ensuring shared responsibility for actions within schools. However, activity planning days need to be evaluated in future iterations of school-based co-production to assess their utility in addressing the challenges faced during this thesis.

10.2.5 Situating the Thesis in Recent Progressions in the Field

Since the review searches in February 2018, outcome (Bonell et al. 2018) and process evaluation data (Warren et al. 2019; Warren et al. 2020) from the Learning Together study conducted in English secondary schools has been published. Whilst this intervention involves RAGs in developing school-specific actions to redress health issues, the intervention and the RAGs have a wider focus. This multi-component intervention develops RAGs to co-produce activities concurrently with restorative approach training for staff and a student social and emotional skills curriculum. The RAG responsibilities include the co-ordination of the whole-school intervention's three components, following standardised processes to decide on intervention adaptations for components, as well as empowering RAGs to undertake school decision-making (Warren et al. 2019). The latter being the focus of this thesis.

The effectiveness trial (Bonell et al. 2018) demonstrated promising results for interventions that utilise co-production as part of their theory of change. The trial was conducted in 40 (20 intervention and 20 control) Greater London secondary schools with Year 7 (aged 11-12) students who were followed up from baseline to 24 and then 36 months when students were in Year 10 (aged 14-15). Post 36-months, there was a difference found between groups for the primary outcomes, as intervention students were less likely to self-report being victims of bullying, but no differences were found in the self-reporting of perpetrating aggressive behaviour. Findings also showed substantial benefits at 36 months on reducing smoking, alcohol and drug use, and police contact, as well as improvements in psychological functioning and wellbeing scores.

Integrated process evaluation results are also welcomed as they help situate this thesis further into the evidence-base. Process evaluation data highlighted parallels with implementation and context findings in this thesis, whilst mechanisms were further explored in Learning Together. In terms of implementation fidelity, whilst an external facilitator supported RAGs their implementation was good, however during the last year when the external facilitators withdrew, fidelity decreased as fewer meetings were held (Warren et al. 2019). Maintaining RAGs throughout implementation was highlighted in the current theses recommendations to increase the likelihood of action implementation. Additionally, variable fidelity was found in all components, but the positive intervention outcomes were believed to demonstrate that fidelity to function rather than form was important, as long as school-specific forms triggered mechanisms (Bonell et al. 2018), which has been the underlying understanding in this thesis.

Regarding school context, Warren et al. (2020) highlight in one evaluation case study school RAGs were less effective in achieving action, partially attributed to only one staff member attending groups and a lack of wider school support for the intervention. This is akin to the findings around the intensive embedding of the intervention in Rowland compared to Partridge's extensive diffusion of intervention information and responsibility, which led to the Intervention Readiness function being added to co-production theory. Other reinforced themes included that RAG effectiveness increased when senior management sat on or supported them, and when the baseline context took student involvement seriously prior to intervention. Further, in some schools actions were downplayed, whilst in others Headteachers rejected actions. Again, these results resonate with current thesis findings.

Considering mechanisms, Warren et al.'s (2019) RAG member survey showed stakeholders thought projects were a good way to involve students in decision-making (Year 1 =95%; Year 2= 94%; Year 3=100%). External facilitation and student data were also perceived as important resources to support empowerment in decision-making, with minor issues such as some schools wanting facilitators roles more clearly defined. However, Learning Together found that diversity was captured in RAGs, which was less so for Partridge in the current thesis leading to refinements about how to involve less engaged students. Also, whilst the current thesis focused exclusively on upstream pathways that underpinned school decision-making, Learning Together data complements this through elaborating how this decision-making affects the mediated outcomes of attachment/commitment to school by eroding barriers in relationships between staff and students. For example, Warren et al. (2020) found students' school commitment was increased by: their new RAG roles, which allowed the sharing of views and experiences and humanised staff; collective decision-making, which supported building relationships with staff; participation in RAGs that gave students a sense of belonging and agency; and increasing links with the wider student population through consulting with them or because the resultant actions affected them. This was all dependent on good meeting attendance and support from the wider school subsystems.

In summary, this study has provided vital progression in the field as it has clearly conceptualised co-production, as well as identifying and modelling three different types found in school-based interventions. Extant evidence provided a rationale for utilising system-level capacity-building co-production which was further clarified through a process evaluation of two case study schools in Wales, resulting in 13 functions and four upstream decision-making mechanisms. The thesis results have also been situated within the latest progressions in school-based co-production. Additionally, this section addresses three of the four key uncertainties raised by the systematic review in terms of elaborating on the upstream mechanisms, assesses the the utility of photography for problem-setting as well as addresses the opaqueness of problem-solving. The following section will consider implications of this study for intervention development.

10.3   Implications for Intervention Development Studies

The present section reflects on the study implications for intervention development with three key areas. The first two are the use of academic versus contextualised theories and the utility

of Intervention Development Guidance within this study. The former links to the utilisation of co-production as a vehicle to develop theories from within settings to problem-set and solve, whilst the latter links to the overall structure of this thesis as a development study about co-production theory. The third area addresses the use of social validity in future intervention development studies.

10.3.1 Academic versus Contextualised Theories

Previous intervention research tended to draw on academic theories to develop interventions (Moore and Evans 2017) with stakeholder involvement considered within a supplementary role to fill gaps where academic literature is inadequate (Craig et al. 2008). The increased drive for co-production attempts to redress this balance. This thesis distinguished contextualised stakeholder involvement at the individual setting level from broader approaches that develop standardised interventions (e.g. Hawkins et al. 2017). Both were considered plausible solutions to address implementation issues with the practical and philosophical fit with school needs found in SEL and HPS programmes (Humphrey et al. 2010; Hung et al. 2014). Hawkins et al. (2017) showcase a pragmatic example of involving multiples stakeholders in developing standardised school-based interventions, however, this was lacking for co-production at the individual school level. This thesis shows an example of the latter; however, it raises the issue of the balance between using academic and contextualised theories (Wight et al. 2016; Moore et al. 2019).

The systematic review did not locate clear articulations of stakeholders' change theories for health actions except for Bell (2014; 2017), who used logic modelling to draw together evidence-based theory and school stakeholders' understandings of solutions. Also, the initial co-production theory (outlined in Chapter 4), over-privileged stakeholders' theories as the only point to draw on academic theory was during researcher scoping for solutions between problem-setting and solving meetings. However, whilst practical examples of solutions were found, academic evidence-based theory to present to schools was not. Resultingly, wellbeing plans (Appendix Q) clearly outlined the schools' needs, the actions intended to make change, who will do these, by when, and how; however, they excluded a clear articulation of causal assumptions, i.e. how actions were believed to make change and result in outcomes. The causal assumptions underpinning stakeholders' theories were also overlooked due to the challenges with problem-solving, which removed the researchers' focus from this. This is

problematic because there is a need to ensure that stakeholders' assumptions are accurately understood, depicted, and then delivered as intended.

Refining problem-solving to have activity days with intervention teams may go some way to readdressing this balance of academic and contextualised theory. Intervention teams can consider school problems in terms of academic theory or successful interventions, and support stakeholders to clearly articulate the causal assumptions underpinning their proposed activities. Whilst it is accepted that interventions have historically reported small or no effects on outcomes (Zaza et al. 2005; Hawe et al. 2009), so uncertainty remains about effective ways to tackle health in schools, being clear about the theory of change produced through co-production is a first step in addressing this. In this respect, emulating Bell's (2014; 2017) example of logic modelling school-specific programmes is recommended and will also allow implementation assessments to be planned (Reed et al. 2020). Further iterations of interventions can then hopefully discover effectual theory for health change in schools.

10.3.2 Using Intervention Guidance

The increased recognition of the importance of intervention development was shown in chapters 2 and 3 through the growing attention to this phase in successive MRC guidance (Campbell et al. 2000; Craig et al. 2008; Craig et al. 2018), in the establishment of discrete funding streams (UK Research and Innovation 2016), and the INDEX study's methodological advancements in terms of a taxonomy of approaches (O'Cathain et al. 2019b) and guidance (O'Cathain et al. 2019a). Whilst the latter two advancements were not available when designing and undertaking this intervention development study, the guidance has been utilised to structure and reflect on findings in this thesis. This guidance (O'Cathain et al. 2019a) has helped provide clarity to a multi-faceted, complex project and helped the researcher consider what has not been attended to in this iteration and the next steps for co-production.

Clarity was provided through mapping the Intervention Development Guidance 10 key actions against study phases and methodology (Chapter 4, Table 2). This showed the study development (2015-16), the MSc pilot project (2016-17), and the two PhD phases which built co-production theory (2017-18) and refined it (2018-21). This study has followed the

guidance principles for intervention development to be a dynamic, iterative, creative, open to change, and forward-looking process. Dynamic, in terms of moving between actions such as 'involving stakeholders' to capture lay understandings and address ambiguity in 'reviewed published research evidence' for the systematic review, or 'primary data collection' for the pilot study and the process evaluation. Iterative, in terms of revisiting actions again such as 'stakeholder involvement', which was conducted at four study points, and 'bringing together a team', which included the continual support of a supervisory team, and consultation with a team of experts during the systematic review. Creativity was shown in the use of piloting participatory methods in which to understand secondary schools' students' representations of wellbeing, and in ALPHA involvement sessions which used a SWOT analysis, a Think Stations activity, vignettes, and a Mentimeter session. The study was also open to change, demonstrated by the numerous amendments made to the intervention both in-situ in terms of adaptations in schools and in the final logic model.

This study is also forward-looking and the guidance has helped to outline some of the areas in need of consideration to progress co-production. For example, the guidance (O'Cathain et al. 2019a) emphasises the fuzzy boundary between intervention development and feasibility phases (Craig et al. 2008), with actions such as assessing participants' acceptability and measuring intermediate outcomes overlapping both phases. This will involve further incorporation of the Learning Together trial (Bonell et al. 2018), specifically the process evaluation data into the logic model for co-production. Of particular importance is the incorporation of the intermediate outcomes found in terms of increasing the number of students that engage in education, feel connected to school, develop 'life skills', build trusting, empathetic relationships, and make healthier decisions (Warren et al. 2019; Warren et al. 2020). There are also vital questions about whether co-production through the approach of RAGs should be conducted as the sole component or whether, like Learning Together, this needs to be encompassed into a whole school multi-component programme. This decision is influenced by intervention funders who have been reluctant to fund interventions based purely on co-production (Bonell et al. 2010a). Lastly, there remain challenges with evaluating health outcomes for interventions based solely on co-production; they will look different as targets are contextually sensitive.

10.3.3 Social Validity

The key uncertainties from the systematic review directed the process evaluation in phase 2 to focus on the mechanisms, and the foremost co-production functions from capacity-building to adoption. This resulted in the evaluation of outcomes being substituted for the assessment of the output of the wellbeing plans. The construction of the auxiliary domain of social validity was achieved to do this, using data from a study by Turner et al. (2019) that supported the establishment of the Intervention Development guidance (O'Cathain et al. 2019a) and a process evaluation located by the systematic review, which also substituted assessment of outcomes for output (Bell 2014; Bell et al. 2017). The two subdomains developed assessed whether resultant intervention plans were relevant to the individuals and contexts in which they were created and whether they were implementable in those contexts. Extending process evaluation domains to incorporate social validity was deemed important to temper the overreliance on acceptability (Reed et al. 2020), as participants, especially students, were unequipped to critically evaluate acceptability and were happy with any opportunity to engage in school decision-making (Ozer et al. 2013).

The utility of social validity as a domain within intervention development, as well as a function within co-production, needs further reflection. In terms of intervention development studies, the social validity domain produced instructive data to modify the current co-production theory. For example, perspectives of the SMT in Partridge demonstrated an omission of a priority on mental health issues leading to the recommendation to ensure SMTs are more iteratively involved in decision-making. The domain also proved instructive in refining the problem-solving activities as solution relevance was affected by RAG reluctance to remove solutions, consider unintended consequences, and share responsibility. All of which can be considered during problem-solving activity days henceforth. However, whether these changes to co-production will mitigate all potential problems with resultant wellbeing plans in future iterations is unclear.

This raises the issue of whether social validity should be introduced as a co-production function to assess school-specific plans before they are implemented. Whilst the data, again, showed Partridge's SMT thought addressing mental health problems was omitted, this was articulated as potentially due to a lack of student diversity, and specifically the omission of struggling students who need higher-level support. As the intervention has been modified to

try to address the diversity issues, this again may be resolved but will need to be assessed in future iterations. Also, Chapter 8 demonstrated school decision-making and the resultant wellbeing plans were dynamic as they were situated in complex, nested systems. This means both the social validity subdomains of relevance of actions and solutions and the likelihood of implementation are fluid, which questions the value of assessing these during other co-produced interventions.

Whilst the Learning Together intervention did not formally assess social validity, RAG surveys asked whether they thought RAGs had made good decisions on actions (Year 1=94%; Year 2=93%; Year 3=98%) and whether they thought the RAG ensured action implementation (Year 1=70%; Year 2=72%; Year 3=69%) (Warren et al. 2019). These can be mapped onto the subdomains of relevance and implementation. The very high level of agreement that good decisions were made indicates there is no need to assess relevance before implementation; however, surveys were only completed by RAGs and no other school members like SMTs. The lower rates of agreement that RAGs were able to support implementation can be considered a reason to undertake social validity assessments before attempting to implement solutions, especially as some of this non-implementation was attributed to Headteachers rejecting ideas (Warren et al. 2020).

This section outlined the implications for intervention development through considering how co-production can draw on academic theories or successful interventions, where they exist, in combination with stakeholders' contextualised theories. It also demonstrated newly developed intervention development guidance has great utility in supporting researchers to understand and articulate multi-faceted, complex studies as well as consider the next steps to progress interventions. It finished with a consideration of the utility of social validity, which will only become clear with further iterations of co-production and if other intervention development studies attempt this. The following section considers implications of this study for Prevention Science more generally. It starts by addressing the last key uncertainty from the systematic review, which was the limitations of prior co-production evaluations to attend to complexity.

10.4   Implications for Using Complex Systems Thinking in Intervention Research

The theoretical lens underpinning this study was complex system thinking. The study recognised the theoretical shift from considering complexity as an inherent property of interventions to understanding that complexity also resides in the interaction between the intervention and the context it is delivered (Hawe et al. 2009; Hawe 2015). To capture these, the study needed to consider two factors in terms of the interventions aligning or adapting to the needs of the context and the organisation actively changing its context to accommodate the intervention. These have been understood in recent progressions (see section 3.2) as understanding settings as CASs (Hawe et al. 2009; Keshavarz et al. 2010) and utilising a functional view of interventions (Hawe et al. 2004; Hawe et al. 2009; Kemp 2016; Perez Jolles et al. 2019), respectively. However, operationalising complexity within intervention research is still in its infancy (Moore et al. 2019), so this section reflects upon employing these two factors within this thesis.

10.4.1 'Events' in Complex Systems

Chapter 3 foreshadowed that conceptual thinking about complex systems was evolving and debates continued on the most suitable ways to understand context (Moore et al. 2019). The most frequently cited work of Hawe et al. (2009) and Keshavarz et al. (2010) were considered appropriate for phase 2 of the study, with section 5.3.1 outlining a summary of concepts that would frame context for the process evaluation. These outlined the school characteristics that would be considered, such as the nested system structures schools were part of, the diversity of agents, and the activity settings and social networks that linked these agents. They also drew attention to how systems change in response to interventions, such as the intervention coupling with the baseline context, the displacement of activities, and the redistribution of resources to accommodate the intervention.

Mixed methods case study methodology proved imperative in understanding these concepts and how they could account for causality (Erickson 2012; Yin 2015). For example, the extensive diffusion of intervention information and responsibility in Partridge was shown to account for the high levels of implementation, whilst the LT in Rowland reflected that limiting the intervention diffusion throughout the different school subsystems was problematic for intervention delivery and adoption of health activities. This supported understanding of analytical generalisability (Erickson 2012), whereby similar contexts may

respond in a similar way to Rowland, so the intervention was refined to assess these prior to intervention rollout. The use of Framework analysis in conjunction with the descriptive statistics from observations and survey results also supported understanding complexity. This allowed the similarities and differences in the lived experiences of the intervention to be considered for different stakeholders within different cases. It also layered knowledge, which is needed to ameliorate the issues of indirect access to an objective, true reality; underpinned by critical realism (Sayer 2000; Bonell et al. 2016). Hence complexity was able to be understood idiographically through ensuring the philosophical, methodological, and analytical approaches permitted the assessment of the broad conceptual characteristics of context.

10.4.2 Functional View of Interventions

As shown in section 9.2.1, utilising a functional view of interventions was productive because it allowed the researcher to distinguish co-production types as well as set the key functions of co-production. Also, forms were able to fluctuate to encompass the complexity of co-production approaches. However, there were challenges with articulating and reporting interventions and assessing fidelity.

In phase 1, an emergent challenge was the lack of prior reporting of studies using a functional view in the systematic review. Comprehensive process evaluations had been conducted on co-production studies (Bonell et al. 2010a; Bonell et al. 2010b; Bonell et al. 2015; Fletcher et al. 2015), but these neglected to use a functional view in the articulation or evaluation of studies because they were conducted prior to complexity theory and context being attended to in health intervention research (Moore and Evans 2017). Further, the clear naming and distinction of problem-setting and solving functions within studies, regardless of whether this was for the external, individual-level, or system-level types, was lacking, resulting in the researcher needing to extricate these functions from study documents. Opaque reporting led to 19 review studies being omitted because judgements on whether they reached this decision-making threshold were not possible. This is attributed to researchers not perceiving their projects through the lens of co-production accepted here, however, some, particularly within the system-level capacity-building type, did explicitly address themselves as interventions.

Attempts to advance intervention reporting are demonstrated by documents such as the Standards of Evidence for Efficacy, Effectiveness, and Scale-up Research in Prevention Science (Gottfredson et al. 2015) and the Template for intervention description and replication (TIDieR) checklist and guide (Hoffmann et al. 2014). Both aim to improve intervention replicability through supporting the publishing of intervention descriptions with pre-specified items covered. While the former would need to widen the conceptualisation of interventions to incorporate a functional view, as, currently, it focuses on core components and intervention content, the latter advocates for descriptions of procedures, activities, and processes that could be tailored to a functional view. An alternative taken here was to use the widely accepted logic model (W.K. Kellogg Foundation 1998) to articulate necessary functions, as well as outlining the mechanisms, output, and outcomes, in conjunction with Perez-Jolles et al.'s (2019) use of a Function and Form Matrix. This is a detailed table elaborating on the multiple forms that may be tailored to contexts to achieve a function.

In phase 2, challenges with assessing fidelity at the functional level were also found. Interventions, such as the current one, focused on empowerment, capacity-building, and participatory research, which are acknowledged as examples that need to permit adaptation (Durlak 1998), particularly because community decision-making is an uncertain process that can lead to uncertain outcomes (Pérez et al. 2016). Further, intervention flexibility is allied with complex systems thinking, with the amount of flexibility centred on whether adaptation maintains or compromises functionality (Hawe et al. 2004). Therefore, as described within section 5.3.2, adaptation was allowed at the form level (Perez Jolles et al. 2019) and was assessed through the fidelity-adaptation balance advocated by Perez et al. (2016), where both intervention recipient and researcher could modify practice. This involved assessing fidelity through questioning the fidelity-adaptation balance and the adaptation's effect on intervention functioning, whether functions were essential, and intervention effects. This proved helpful to support the researcher to understand adaptations, but it was challenging to assess whether these maintained effects; especially, because the process evaluation was not accompanied by an outcome evaluation, so fidelity focused on whether a wellbeing plan was developed and adopted.

A further challenge was whose opinions mattered when understanding whether elements were essential. For example, whether parents should be on RAGs has been a discussion

throughout this thesis. Six of the seven systematic review studies attempted to recruit parents showcasing researchers think it is an important co-production function. However, only two explicitly managed this whilst others noted difficulties in recruiting parents to RAGs, akin to this study. Similarly, the process evaluation findings showed school staff did not value having parents on RAGs, so did not redistribute time and effort into recruiting them, and they felt the intervention and the action plan did not suffer through the omission of parents. Case study students had mixed feelings on parents being involved, ranging from it was imperative to get their perspective to this was unnecessary as parents did not understand wellbeing in schools. This was further compounded by ALPHA advising that parents being at the RAG meetings may have the unintended consequences of students feeling unable to voice certain opinions during meetings or even to nominate themselves. So, whilst a fidelity descriptor was to have at least one community member, in hope this would be a parent or Governor, whether this is essential is debatable.

This section reflected on operationalising complexity within intervention research in terms of understanding settings as CASs and using a functional view of interventions. It demonstrated characterising schools as CASs can be achieved through aligning the philosophical, methodological, and analytical approaches in studies. It also reflected on using a functional view to report interventions and to assess fidelity. The next section situates the thesis within the national context it was delivered in terms of the implications for educational policy and practice in Wales.

10.5   Implications for Policy and Practice

One of the five recommendations made after phase 2 was to better communicate the intervention to schools and to link it further to School Improvement (Department for Education and Skills 2014; Welsh Government 2014) and Inspection (Estyn 2015) processes. The latter was particularly pertinent in SMT focus groups as this would encourage school decision-makers to redistribute more resources and time to co-production. Currently within Wales there is a unique set of national contextual circumstances in education policy and practice which link to the intervention tenets of listening to learners to make wellbeing change. This section will outline the overlaps between the two to demonstrate how co-producing school-based wellbeing interventions can impact on the aspirations of the Welsh

education sector. The section will finish with a discussion of how schools may be able to take forward such an approach.

First, education reform is being undertaken with the New Curriculum and Assessment (Wales) Bill (2021) which requires schools to design and implement their own curriculum and assessments. Curriculum Guidance (Welsh Government 2020) outlines four purposes, which include the aim to develop healthy, confident individuals, and one of the six learning areas is focused on health and wellbeing. Demonstrating Wales has clearly rejected the zero-sum hypothesis (Bonell et al. 2014a) and is embracing supporting the wellbeing and decision-making skills of learners. There is considerable overlap between the Curriculum Guidance's core learning statements for health and wellbeing and the current intervention, which can be articulated to schools in future iterations. They include the development of students' recognition of what affects wellbeing to make remediations to maintain safety and emotional health; the ability to critically evaluate and make decisions at an individual and collective level to ensure good health and wellbeing; and understanding that building healthy relationships is good for wellbeing. The guidance further continues that schools should provide students opportunities in the decision-making processes of problem-solving, identifying solutions, critically assessing information, appraising arguments, and engaging with and responding in a cooperative and constructive manner to others' opinions. Additionally, the SHRN data were highlighted as a source important for considering needs, as was done in this intervention.

Secondly, to prepare schools for the incoming curriculum in 2022, the Welsh Government want schools to develop as 'learning organisations'. This again centres on the four purposes and is supplemented by seven action-orientated dimensions which characterise schools as learning organisations (Kools and Stoll 2016). These highlight what schools should aspire to achieve and how they can change to realise this achievement (Welsh Government 2017). The Welsh Government has set schools an agenda that maps onto the current intervention fully. They have developed a shared vision within their settings to enhance the cognitive and wellbeing outcomes for students through collaboration with stakeholders, including students, all staff, parents, and external community members. Further, the Organisation for Economic Co-operation and Development (2018) has found whilst progress has been made with 58% of their sample schools now practicing five of the seven dimensions, the dimensions were

unequally achieved. It was found that most schools needed to engage with the dimension to 'learn with and from the external environment and larger system', with collaboration with higher education institutions specifically outlined as an improvement area.

Lastly, the newly published framework on embedding a whole-school approach to emotional and mental wellbeing (Welsh Government 2021) outlines support for schools to review their settings and develop plans to address problems or enhance already developed promising activities. This can be considered as an expansion of School Improvement Plans to ensure they incorporate wellbeing. There are four equivalent framework processes designed to achieve school plans and the current intervention. Foremost co-production with students and their families should be a focal aspect of developing plans. Further, schools are recommended to use a range of sources to scope people's ideas on the needs regarding wellbeing, with the SHRN data again highlighted. Also, schools will develop action plans to state how they will address issues/gaps whilst final processes include the implementation and evaluation of plans to assess student outcomes. However, this framework does emphasise that SMTs rather than RAGs should do this. It also takes a more whole-school approach, akin to Learning Together (Bonell et al. 2018; Warren et al. 2019; Warren et al. 2020), as it brings together the wellbeing curriculum with school change and training to support positive relationships between staff and students. Further, it does consider the need for both universal and targeted provision, which has not been considered within co-produced school-based health interventions.

Taken together, these three areas of development in educational policy in Wales provide an environment conducive to reorientating schools for routine co-production cycles with students and other school stakeholders to address health and wellbeing. However questions remain about the implications for school practice based on the work of this thesis and the new policy requirements. Requiring schools to take forward co-production processes to address health can be viewed as adding load into school systems without supporting this through increasing capacity in terms of staff time and/or knowledge. Therefore the recommendation for schools is to attempt to redistribute already existing resources in the school or the wider health/education system. Potential resources for redirection include those for school councils, wellbeing teams, youth support services, and, in Wales, the Healthy Schools Network.

For example, all schools in Wales should have a school council under Welsh Regulations (2005) but as demonstrated in both case studies in this thesis, school councils are limited in their functioning and often do not lead to meaningful change. Using the resources dedicated to a school council i.e. staff time to hold mandatory council elections, hold meetings with students and try to progress change, but transferring this to the wellbeing team to take forward, could support the co-production process outlined as long as it was endorsed and prioritised by SMTs. Further, findings showed that including a diversity of students was important, and as already outlined by the ALPHA group, more disengaged students could be supported by youth workers which already work in schools. This should be feasible as both case study schools had youth workers who were engaged and happy to take part.

In terms of those who could act as co-production facilitators this could be drawn from the Healthy School Scheme run by Public Health Wales. Currently, each school has a Healthy Schools coordinator (employed by Public Health Wales) who oversees and supports schools to gain school awards for health by addressing three annual health actions per year. In each school this is supported by a designated schoolteacher who has a remit to write and deliver the health actions. This co-production process fits well with that scheme, however it has more of a focus on involving multiple members of the school, and emphasises using school-specific data, such as the SHRN reports, to develop the problems and solutions. It is worth noting the Healthy School Scheme has already been repositioning towards using school data to increase the relevance of school health actions. Incorporating both the coordinators and the schoolteacher involved in Healthy Schools would strengthen the health knowledge of RAGs, and the researcher would happily share modified activities to support problem setting and solving with Healthy School personnel so they could support the co-production process in schools.

It is believed if the preceding resources, which are currently spread throughout the school system, can be amalgamated into a new RAG subsystem structure by schools, then this could support school systems to tackle the prevalent adolescent health issues elaborated on at the commencement of the thesis.

10.6   Study Limitations

Overall, this study is limited through being an initial iteration to expound intervention theory for the co-production of school-based health interventions. In accordance with the study's philosophical alignment with critical realism (Bhaskar 1978), it is accepted that the co-production theory expounded here will need to be further evaluated through the iterative and accumulative processes (Kazi 2003) of empirical research to test and refine the theory further (Marchal et al. 2013). As outlined in intervention development guidance it can be difficult to understand where intervention development ends, and even if it does end, as developers can continue to refine theory throughout all MRC phases (O'Cathain et al. 2019a).

Another limitation was the attention to mental health. While the intention of the thesis was to encompass both the broader concept of wellbeing and the narrower focus of mental health, this was averted for three reasons. First, during the photography project if students were struggling to elicit their understandings of MHWB, the researcher supported them to think of ideas through using flashcards based on the WEMWBS. As shown in section 2.1, this scale links to the salutogenic understanding of MHWB so focused on purposeful functioning and subjective happiness/sadness rather than thinking about mental ill health. Therefore mental health could be discussed with students before they take their photographs. Secondly, as shown in section 8.3.2, the staff at Partridge felt a mental health priority was omitted from their school plan because there was a lack of 'disengaged' students in the RAG, who are those students who struggle with mental health symptoms so would have prioritised it. Thirdly, and contradictory to the last point, in Rowland two students did talk about their mental health extensively and this was a theme given to the RAG during the diamond ranking prioritisation task. However, when interviewed the RAG members stated they prioritised the issues which affected a larger amount of the school population. Future co-production studies may want to emphasise that one criterion for prioritising a theme could be severity i.e. there is a large effect on the mental health, even if this affects only a few students.

In phase 1, the main limitation was the lack of clarity on reporting co-production in systematic review study documents, as cited in the review publication (Reed et al. 2020) . This was most clearly demonstrated through 19 studies being omitted as it was unclear if problem-setting and solving decision-making was undertaken. Attempts to contact authors were made to clarify information which led to some authors highlighting further papers to

address reporting issues, whereas others resulted in authors advising no further details were available. Even the studies involved were variable in their articulation of co-production with some details needing to be extricated from documentation. Where this was necessary the researcher believes this was done accurately. As explained in section 10.4.2, although attempts to advance the reporting of interventions have been made through Standards of Evidence (Gottfredson et al. 2015) and the TIDieR checklist and guide (Hoffmann et al. 2014), these were published after the majority of systematic review studies and need to expand the conceptualisation of interventions to incorporate a functional view.

In phase 2, there were two limitations to the process evaluation regarding the dual role of the PhD student as a researcher and co-production facilitator and the external validity of evaluation as only two schools and 38 participants were involved. The dual role of the student as both researcher and facilitator was particularly highlighted during group observations as they needed to take an 'observer as participant' role (Junker 2004), splitting their attention between both tasks. This was attempted to be ameliorated through audio recording sessions so the researcher could relisten and finalise observations. However, this did not capture non-verbal observation elements. For example, in Partridge, staff sometimes became distracted in group meetings as they checked their school emails on phones, evidencing how other school priorities took precedence over co-production. However, some of this nuance about non-verbal observations may have been missed in Rowland because there was a need for the researcher to take on an increased facilitation role in terms of locating students and organising rooms. Also, where quantitative assessments of fidelity were made this would have benefited from a second researcher so inter-rater reliability could be assessed.

A second result of the dual role was the potential for Hawthorne effects as participants changed or limited their critiques of the intervention to more socially desirable perspectives during interviews. Again, strategies were introduced to ameliorate this through outrightly asking about negative experiences and intervention criticisms, and the researcher trying to detach from the intervention by advising participants the processes were adopted rather than constructed by the researcher. Also, surveys were used so participants could make judgements of the intervention in absence of the researcher (Bryman 2016). Nevertheless, the worry about Hawthorne effects may have been particularly pertinent with students

because the project was conducted within schools, which increases the likelihood of student compliance and acquiescence (Denscombe and Aubrook 1992; David et al. 2001).

The process evaluation pursued the capturing of an in-depth, idiographic understanding of stakeholder's lived experiences of co-production. The Yinian approach (Yin 2018) to the case study methodology supported this through utilising a multiple-case, embedded design supporting co-production to be examined through divergent cases with multiple subunits in terms of different stakeholders. The external validity of this is limited by only two case study schools and 38 participants being involved. In terms of schools, they were purposively sampled to try to support diversity in the measurable characteristics of FSM entitlement and school size; however, this may bias against schools which tend towards the average for these measures. Furthermore, the intervention evaluation highlighted less engaged students or those who struggled academically were not represented in RAGs; hence the case study research did not represent these. These issues will be easier to circumvent in future project iterations with larger sample sizes.

The final limitation concerns pragmatic considerations in terms of funding and resources. Conducting this study as part of a PhD meant the limiting of a budget to enact some of the elements found in previous studies. For example, having only one researcher and limited time meant that co-production could not have been followed up during implementation of health activities even if this had been a research aspiration. Further, schools were not offered funding or a bidding process for funding to support the implementation of resultant health activities unlike other studies (Mino 2003; Bonell et al. 2010a; Bonell et al. 2010b; Bell 2014; Bonell et al. 2015; Fletcher et al. 2015; Bell et al. 2017). However, despite these limitations, the focus on earlier functions from capacity-building to adoption resulted in the development of highly informative data inclusive of the functions, how they worked in context, and the upstream mechanisms of co-production, which before this thesis were unclear.

10.7   Conclusion

This thesis affords vital progression in school-based interventions where there has been a recent drive for utilising co-production during intervention development (Hawe et al. 2009; Moore and Evans 2017; Moore et al. 2019). Despite the augmenting support to involve

stakeholders in intervention development (Craig et al. 2008; Craig et al. 2018) the field of school-based co-production was arguably nebulous and piecemeal. To address this, the study differentiated co-production types and further elaborated on the intervention properties for system-level capacity-building co-production. Learning from concurrent progressions in other UK countries, and situating this within the Welsh educational context where policy reform makes schools fertile to adopt co-production for wellbeing, will hopefully allow further research to progress this endeavour.

11 Appendices

11.1 Appendix A: Public Involvement Log

Session 1: Dec 2015 Results

ALPHA session Saturday 12th December 2015

Coproduction as a method for intervention development

Introduction

Hayley wants to do a PhD research project on how you can coproduce wellbeing interventions in secondary schools through training students and teachers in action research methods. This will mean that a small number of teachers and students (about 6 individuals in each school) in three secondary schools will be given training on action research methods, and supported by Hayley throughout a school year to involve larger numbers of the student population in a cycle of 'Look, Think, Act'.

Look - The action researchers will collect data from other school students through action research methods they have been trained in. These methods could be surveys, interviews, walking tours or through photography etc. depending on what the action researchers decide. They will collect data about young people's thoughts on what is important for wellbeing in the school, how is this already being addressed and how to tackle areas not already being addressed.

Think – The action researchers will develop up an action research group of students to look at the data with them and develop an action plan to highlight the good practice and make change in the school to aid wellbeing in students.

Act – The action researchers will put the action plan in place.

Hayley's role will be to train the action researchers, support them throughout the project and to collect data on each school to help her understand if this is a good approach to targeting wellbeing in secondary schools.

Young people at session:

Age	Male	Female
15	2	1
16	1	4
17	0	0
18	0	1
TOTAL	3	6

Definitions

Firstly ALPHA were asked to give their ideas on what each of the following five words meant. The white writing is ALPHA definitions and the black writing is just one possible definition found linked to public health.

Wellbeing

- Is how well you are.
- Health, liefstyle, exercise, diet.
- Is about people feeling positive or being in a good mental or physical state.
- Being fit and healthy and having a healthy mind.
- How people feel good in a physical and mental sense.
- Physical and mental health.
- Health and happiness.
  - Every individual realises his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community.

Prevention

- To try and stop something from happening before it happens (X2)
- Stopping or putting something in place to stop something before it happens.
- The ability to stop something happening before it has happened.
- When you know something is going to happen so you try to stop it.
- Stopping something happening before it starts.
- Trying to stop someting once it has already started.
- To avoid.
- Keeping safe.
  - Action taken to stop something, in this context to stop people getting ill.

Intervention

- Stopping a problem before it gets worse.
- Trying to do something about something you want to prevent.
- Discussing a topic and making action on what needs to be addressed.
- Trying to stop something that's already happening.
- Helping the needy.
- Like a meeting?
  - Is a programme of action intended to change the health of the public through changing their behaviour or the envirnoment around them.

Coproduction

- ? (X2)
- When something is made equally by two or more people.
- Producing something in partnership.
- 1 or more sources making something.
- When one or more stakeholders (i.e. schools students, teachers and reseachers) work in partnership to produce an intervention (i.e. make changes in the school).

Action Research
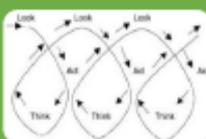
- ? (x 6)
- Research through action
- An approach to research where stakeholders coproduce (i.e. school students and teachers) the research in their own setting (the school) and take action on the data found to change the setting, in hope it will be better for their health.

SWOT Analysis

An explanation of the project was given (see introduction). ALPHA then undertook a SWOT analysis to highlight the Strengths, Weaknesses, Opportunities and Threats to the project.

Strengths	Weaknesses
• This is really needed and relevant to now as I think wellbeing is an issue in schools and it is not looked at enough, they are more concerned about diet which we are now aware of.	• Don't look at mental illness because by then most young people won't know about it or be diagnosed with mental illnesses but everyone will understand wellbeing.
• Wellbeing is so important as it impacts other things, and mental illness and stress is increasing.	• Don't use a technique where there is a box to add your suggests as it won't work.
• Wellbeing affects everyone. Every different group of young people in schools are affected by wellbeing.	• Year 9 is a good age because you are not doing exams them but will a Year 11 talk to a Year 9 about wellbeing?
• I think this project could really change the way that schools look at wellbeing, I think it really could make a difference. Schools just think there is nothing wrong with wellbeing but if this research shows in their school there are issues then they will need to face them.	
• In Year 9 you have a lot of stress as you need to pick your options. Lots of pressure is put on you to decide what you want to do with the rest of your life. Massive pressure at 13 and 14.	

Opportunities	Threats
• Let the Senior Leadership Team know what you are doing and keep them updated on the progress, including discussing the findings after 'look' to see how they can help to change things. They do make the decisions.	• Don't include private schools as they are very different to state schools.
• Use different school sizes and schools with different pupils to teacher ratio as the research may work differently then..	• Don't just use schools in Cardiff, use a diverse range including a Swansea or a valleys school.
• Welsh speaking schools are different so can you add a Welsh medium school.	• Not sixth forms as people who were most stressed would have left after GCSE's.
• You should target schools that have had an Estyn inspection and need to do something about wellbeing as they will want to do it to increase their Estyn inspection next time.	• Collecting data from Year 8s will be difficult because they are not new like Year 7s and don't need to be serious about school yet because they don't have their options/exams to worry about.
• I don't think this would be possible but could you shuffle the trained students to another school to do the data collection (the look stage?). It may be easier to give data to students you don't know.	• If teachers are set on their ideas and not open minded to student issues or if they only let some students access to express their views so it comes out that their school is excellent for wellbeing.
• To collect data use interactive boards to send messages to as this is anonymous.	• Think about how you will get the student to be the researchers – don't vote as this is a popularity contest, don't let them select themselves as they will be the swotty young people.
• For some students you could ask them to come to a room at a certain time in their friendship groups to talk about wellbeing. For some this would not work so use a mixture of methods so everybody gets a chance to add their thoughts on wellbeing.	• Try not to use the teachers that don't understand what children think like now. You could ask the students to nominate a teacher. Get a teacher that is not on SLT or have any other jobs – you need a normal teacher who actually teaches and has a relationship with students. Also in each school the teachers students can go to are different, in some schools it maybe the drama teachers in other the PE teachers.

What would you change about wellbeing?

Everyone got a chance to talk about one thing they would change to enhance wellbeing.

- Stressful teachers that think it is all about their one subject and set an unrealistic amount of homework and you have every other subject to worry about too. Hopefully the research can look at changing this.
- At least one or two teachers in every school that think that there is no mental health issues, nothing is wrong and everyone should get on with their work. I think they should be educated so they can see there are problems.
- I don't think teachers realise the amount of stress that is on young people. I was told the other day by a teacher that exams are not that difficult, we are not under that much stress and I don't think they realise the amount that is riding on these exams, well that we are told is riding on these exams. Teachers need to empathise more with the fact that we are under a lot of pressure and they need to calm it down and realise that.
- Teachers should take more interest in your outside life whereas just focusing on school, like my form tutor would ask our form all the time how things were going outside school and the rest of the school would not get talked to at all. That would have made a difference, showing an interest.
- In our school they don't really deal with things they can't see (like wellbeing issues) so if we are sitting in the corridor they will say no you can't do it but don't care about people smoking in the toilets cause they can't see it.
- Some teachers need to calm down a bit rather than ask us to do four types of things, they need to understand we have a life outside of school.
- At the start of each year you get given a sheet with all the deadlines you will need to meet in that one year, coursework, exams, anything major so you can plan your time and know one week you will have four deadlines but other nothing. So you can slowly work at the other things and the pressure is relieved. It is really simple to do they just need to communicate. It needs to be personalised like the exam timetable.
- A pastoral officer that can actually pastoral and don't think that's another job I can get.
- A combination of stop putting so much pressure on one subject because we have other subjects to worry about, like you're not the only subject that we have so please can you like slow it down and some homework is really unnecessary as well, they are giving you a massive amount of homework for no reason, and a sheet with deadlines.

Can Participatory Methods be used to Coproduce Secondary School Health Interventions?

1. INTRODUCTION

- School wellbeing interventions have focused on developing packages that target the same problems in each school, with limited success (e.g. Merry et al. 2011).

- Recently researchers have realised we need to understand the wellbeing issues in each school.

- This means we need to coproduce school-specific interventions which start by gathering young people's ideas about the wellbeing problems and potential solutions (Moore and Evans 2017).

- Previously this has been done by through traditional research methods such as surveys, interviews and focus groups which focus on researcher-initiated questions.

2. MY RESEARCH

- The aim is to assess whether we can use participatory methods with students to gather their ideas on wellbeing in their school.
- I will pilot three participatory research methods:

Guided walks – talking   Photo elicitation - seeing   Mapping creating

- One school with a medium-high level of wellbeing issues.
- Self-selecting Year 8 students (max. 18) randomly allocated to method.
- Present data back to students in focus group and ask them to assess the data it produced and the method.

3. ALPHA SESSION

Two parts to ALPHA session:

1 – Think Stations – 3 stations each with a participatory method, you have two activities to do at each station:

- The first 7 minutes talk about and write down how you think the method should be used in schools e.g. Should guided walks be done with one researcher and one young person/ or in pairs?
- The second 7 minutes answer - what do you think may be some of the ethical issues with using these methods in a school with Year 8 students?

Then each group will move onto the next station and hence method. I will set a timer so you know when to change topic and when to change station.

2 – Review participant information, consent forms and support sheets – design and content.

Session 2: Results

Hayley Reed: Piloting participatory methods with secondary school students (initial notes)

Guided walks - talking
Areas that could look at
- Where people smoke
- Where people gather but also where people avoid
- Places that don't like to go because of particular people
- Good for identifying areas where particular event happened (e.g. found used condom)

Strengths
- Would work well with quiet group
- Also work with Special Educational Needs group, though likely to need Teaching Assistant
- Will really benefit particular young people
- Many will find it easier to talk while walking than if sitting down with interviewer
- Conversation based
- Good for Year 8s who would not view it as work

Ethical or other issues
- Could be difficult to do in larger schools due to size (especially schools where on 2 sites like Whitchurch)
- May want to avoid particular areas where might see people don't like
  - Could open up issues - e.g. if person been bullied in particular place
  - Minimise this risk by not doing in school hours (e.g. 3.30pm if school closes at 3pm)
- Success of method will be very variable with participants
  - Some young people will close down with this method
  - Some young people won't want exercise
  - Potential for them to mess about
- Will be easy to miss out the wider definition of well-being
- Bullying will be difficult issue to look at as not place based
- Will work in some schools better than others
- Some areas would be inappropriate (e.g. toilets, changing rooms etc)
- This method might work better with Year 9 who are more knowledgeable of well-being but also more knowledgeable of the space
  - And more confident
  - Would Year 8s be honest or would they want to sell the school?

Suggestions
- Do it with pairs of friends who may have had joint experiences, and who will bounce off each other
  - Someone you are comfortable sharing things with
  - Less likely to open up if just themselves with an adult they don't know
- Should not do with friends due to danger of saying something they don't want you to and them feeling betrayed
- Must do in school time as young people will not take part outside of school hours
  - But also not in breaks when other young people around. Should be in class time
  - Easier practically when quieter
- 1 hour max

- Must explain method before and define well-being. Many of ALPHA have a good idea of well-being but felt they might struggle with this
- Must have nice weather, so preferably some time like spring
- Would have to be able to go anywhere - group gave example of school which reorganised so former pupil areas now out of bounds, or of spaces where not meant to be but go anyway

Other comments
- Each method will suit very different people
- Might be useful if participants can select which method
  - Vs. Pupils should be allocated
  - When asked most of the group said they'd do this method if told to, but not if given choice

Photo elicitation - seeing
Areas that could look at:
- Group unsure what would take photos of

Strengths
- Don't need to worry about the number of photos - just take one photo of each area
- Able to use your own phone
- Good for Year 8 and 9

Ethical or other issues
- Criminal offence to upload inappropriate photos
  - Unlikely to be an issue but remind them that you will see the photos so less likely to do something stupid
- How to keep the camera safe? Participants to be told that not their fault if break the camera
- Potential for negative well-being experiences
- When to take photos of people - may need to get consent
- How to get photos of something like stress
- School will have a policy on using your phone
- Can Year 8 and 9 be out during lesson time
  - Must ensure safety on site
- Practicality of doing in school where potentially restrictions
- Must tell the school

Suggestions
- Need to be able to upload photos throughout the day
  - Take photos on phone so can upload the pictures to the cloud via student Wi-Fi
- Participants to be given a camera and an information booklet
  - Hayley to provide example beforehand
- Easier for someone to speak on their behalf
- Can discuss the photos as a group
  - Or 1:1 slideshow
- Have a photography journal throughout the day
- Look at well-being beforehand so know what to look for
- Take photos all day but including during lessons
- Recruit via assemblies for Yr. 8 and 9s

Other
- Discuss the area not the photo
  - View photos on laptops, not on paper
- Get friends to model
- Don't just take photos of anyone
- How long will it take to go round the schools?

Mapping - creating

Areas that could look at:
- Where do you go when you feel happy/safe/stressed?
- Where do you feel most happy/safe/stressed?
- Physical health
- Where do you find more smokers?

Strengths
- Suits the target age group (Year 8)

Ethical or other issues
- Depersonalised method
- Can interpret it however you want
- How to express in drawing so might be able to say better
- Not good at drawing
- Different groups will define wellbeing differently
- Blank paper can be intimidating
- Not suitable for Year 8

Suggestions
- Need to ask them to define well-being first
- Do it in friendship groups
  - 3 group of 2
- Blank paper and a map of the school might be easier - can label a map of well-being
- Give them the choice to be there or not

Other comments (unsure what these mean - the recordings should resolve)
- Getting on support
- Subjects
- Core
- Voice
- Prompts
- Friend or school - think about
- This is personal - talking about self
- Is informational vs emotional - you are creating
- Metaphorical symbolic
- Still in drawing

Session 3: Sept 2018 Slides

COPRODUCTION OF WELLBEING PLANS IN SECONDARY SCHOOLS

Hayley Reed

- PhD research - How to involve secondary school stakeholders in developing plans to improve the wellbeing of students.

  - Phase 1: Systematic Review

  - Phase 2: Fieldwork in Two Secondary Schools in South Wales

System Level Capacity Building Stages
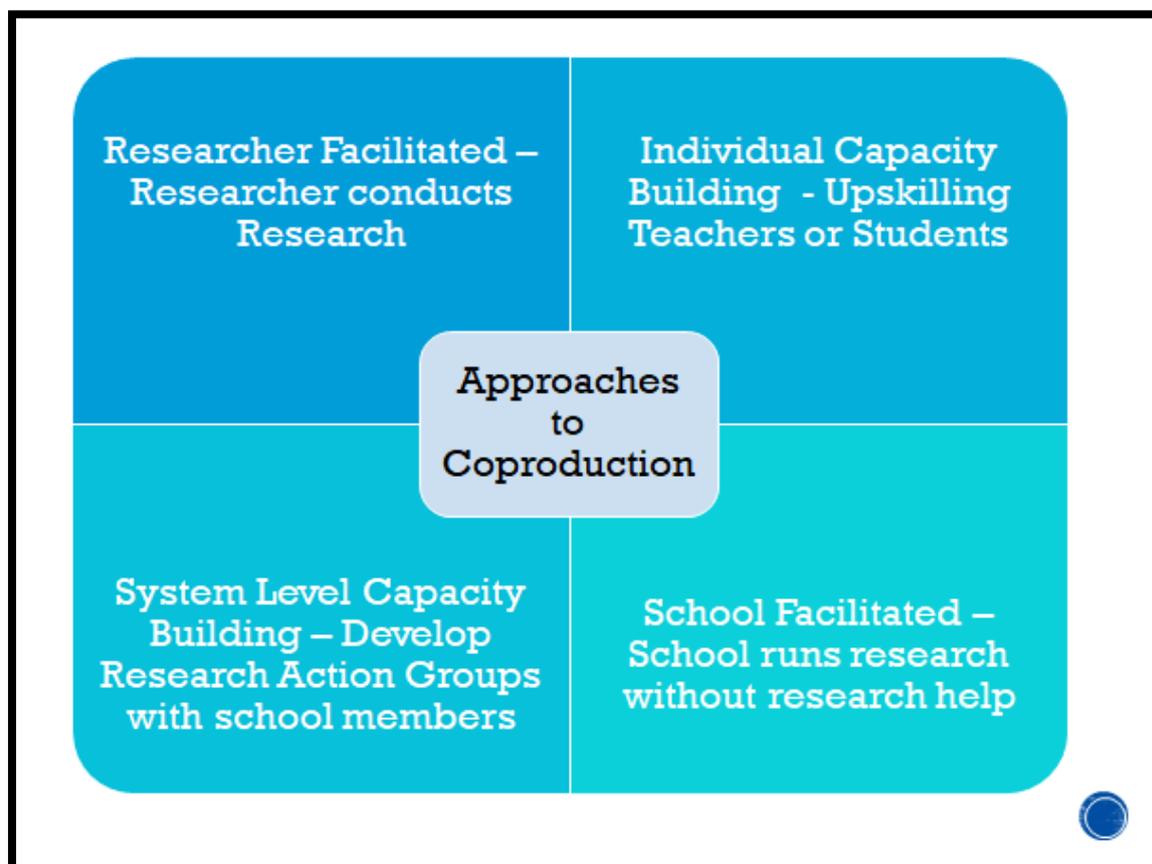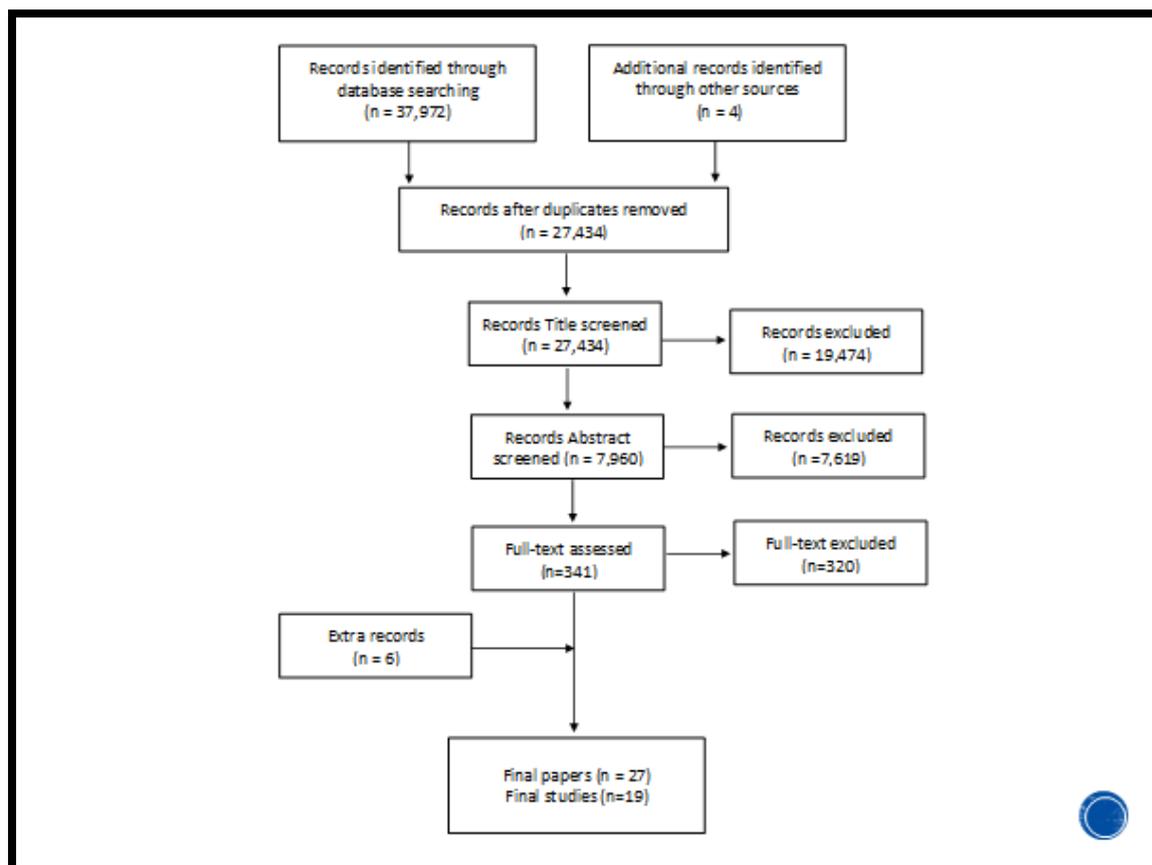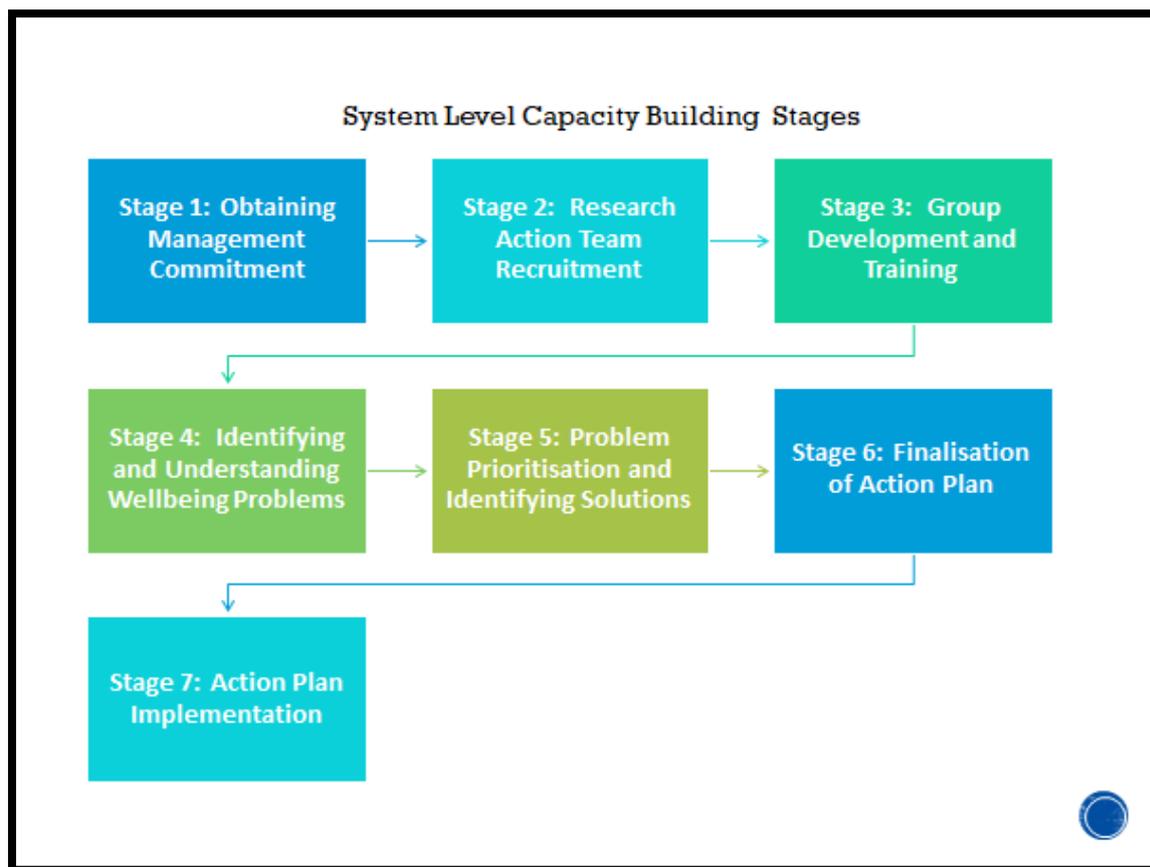
Session 3 Results

Coproduction of wellbeing plans in secondary schools

Hayley Reed (HR) returned to ALPHA to run a workshop to discuss elements of her PhD research. Her research will be identifying coproduction of wellbeing plans in secondary schools, with the aim of identifying how to involve secondary school stakeholders in developing plans to improve the wellbeing of students.

ALPHA were involved to provide practical examples for involving all stakeholders in schools. They were required to discuss 5 stages of the system level capacity building approach to co-production.

Members present

Age	Male	Female
14	0	1
15	0	0
16	2	2
17	1	4
18	0	1
19	0	1

Prior to engagement tasks, HR presented a background summary of her research and a summary of the findings to date, including the thorough systematic literature review analysing 37,972 studies. From this literature review HR was able to identify four common approaches to Coproduction, with the System Level Capacity Building approach to be the most suitable for her research, as this approach develops Research Action Groups (RAG) with school members.

HR required ALPHA to provide feedback and opinions on 5 stages associated with the System Level Capacity Building approach, the stages were:

- Stage 2: Research Action Team Recruitment

- Stage 3: Group Development Training

- Stage 4: Identifying and Understanding Wellbeing Problems

- Stage 5: Problem Prioritisation and Identifying Solutions

- Stage 6: Finalisation of Action Plan

Each stage came with associated card with scenarios and further questions to ask. The ALPHA members were equally split into two groups, and EJ (purple boxes) & PG (blue boxes) facilitated a group each. We spent 10 minutes on each stage with a 5 minute summary of findings at the end of the session.

Stage 2: Research Action Team Recruitment

In stage 2, the school staff and students are recruited to the RAG. HR presented ALPHA with the two following ideas and asked for their thoughts on them:

Teacher recruitment: Schools will assign at least two members of school staff, one from SMT to allow development of wellbeing change ideas that can actually be done. Previously, the head teacher has chosen the staff, or asked the school staff to nominate themselves.

Variation between schools, one approach would not suit all schools. It needs to be varied. ALPHA proposed that recruitment of teachers for the RAG depends on the size of the school. If it is a large school then staff members should nominate themselves with reasons why they would be suitable for this position. ALPHA believed that it was important that students need to have a say in who is recruited for these positions, they suggested a pupil's vote should determine who, from the self-nominated teachers, is elected. However this should only be giving to older years as they have known the teachers for a lot longer. ALPHA suggested that it should be open to all staff members' not just teachers, however the suitable candidate must be someone who is known, respected and approachable for all students from year 7-13.

If it is a smaller school, ALPHA suggested that the head teacher should nominate staff members. The reasoning for this is that in smaller schools the teacher student relationship tends to be more personable, there is more of a rapport between them. The head teacher will also recognise this and will know which teachers are more suited to these roles.

The second group agreed with two members of staff being assigned to the group with one staff member being from the school's SMT. They need to get the right person though, so that this key

person can ensure there is a good path between the group and the school. They felt that Hayley needs to look at the staff situation in each school before finalising the representatives, with the second person potentially be from the pastoral team as they should have a good idea of well-being in the school.

In terms of appointing the specific members of staff, they felt that interested members of SMT and staff should apply rather than be appointed.

Student recruitment: 10-14 students per school, with 2 students from each year group. Student nominated or staff nominated, which is the best approach? 3

Student nominated: Students nominating themselves from the older years will not be an issue as they understand the importance that being involved in a wellbeing service like this can have. However recruiting younger students to the RAG will prove challenging. ALPHA suggested that there needs to be some form of incentives. For the younger years, a potential option to increase student nomination would be to constantly remind them about the service, the more times it is mentioned the more of a chance that young people will apply. Traditional methods of presenting this service in an assembly as a one off works initially and gets people interested in it but younger students will forget if nothing else is mentioned afterwards. Multiple approach to remind people, assembly, forms, emails and posters advertising the service.

Staff nominated: not recommended, as this is unfair for students who are new or relatively quiet. They won't have the opportunity to be put forward for nomination and won't get chosen. Teachers always put forward the same students for these activities.

Group 2 had an interesting discussion with a feeling that neither wholly pupil or staff decided was the best option for pupil recruitment. If decided by only pupils the chosen members may not be the most suitable. If decided by teachers alone they may not know who is interested and may not suggest pupils who they don't get along with. They also felt that, particularly with larger schools but also smaller, heads of years don't know every pupil, more likely only the loudest. All teachers or form tutors could get together to discuss possible young people for each year instead.

They did not agree with the school council members automatically being on the panel because it is not why they joined the council and they may not be interested in the opportunity or passionate about the issues. They would still be able to apply like all other pupils though if self-nominated.

Other ideas included pupils nominating other young people that they think would be good members, and a random draw of any interested pupils.

The group suggested a day or half day of group work on the topic to fully inform pupils about it and let them see if they're interested. Members of staff could also attend as it will help them see who could be suitable.

Stage 3: Group Development and Training

In stage 3, suitable approaches for the RAG to get to know each other and understand what will be doing in the project. HR broke this stage down into two tasks,

Group Development: How to suitably come up with engagement activities so the RAG is able to work well together. This included identifying icebreakers, team building exercises and how to agree on group rules.

Have a number of sessions, first session ice breaker / fun activity followed by a summary of what the aims of the RAG are.

Rules will be tricky, mix the age groups together put some year 11s with year 7s. Split off into smaller groups, this will make the younger years more engaged and make them feel valued. By doing it this way the group rules will become fairer, as everyone's opinion would be taken into consideration.

A suggested for refining the rules would be for each member to come to a meeting with a list of what they want out of the group or what rules they think would be useful for the group. Each rule and suggestion will be put on paper and the whole group will perform a quick thematic analysis to theme and group similar rules together. The group will then have a discussion to refine the rules and to agree on them.

The activities must be all inclusive, they must allow for quieter members to vocalise their opinions whether this be verbally or written down. You need to make sure the older students respect the input from the young students and their opinions and feedback should be valued.

Our group focused mainly on how to set rules, and it was suggested that some of this should come from the top, for example that Hayley needs to empathise the importance of respect for all.

It was suggested that some of the rules have to be set by members, and that each member (both staff and pupil) is able to contribute at least 5 rules that they will abide by, e.g. respect, listen. This will be better than Hayley dropping into the school and setting the rules.

It was also suggested that this could be done in pairs which would mean less pressure, with pupils from different years working together as a way to get to know each other. Each pair would be able to suggest one rule, and as a larger group agree the set.

Training: The second task was identifying how to present informal training to the RAG, what processes would be suitable for all members of the group.

Young people will not take home and read a resource pack, although ALPHA members thought that it would be good to produce one for them to use in the sessions. But give them the option that they are allowed to take the welcome packs home. The older year may want to read the packs. Would be good to give information in a variety of formats including engaging presentations.

Informal training (similar to ALPHA) was seen as the best way forward rather than having a proper trainer leading this. The training could be group work based, instead of being talked at, with members able to ask questions.

The group were clear that training as a group was the best option, but felt that the group could also be given a leaflet information to take away with them, to back up what happened on the day

Stage 4: Identifying and Understanding Wellbeing Problems

In stage 4, RAG members decide on what are the welling priorities in their school. HR will do this by two different methods. Identifying and understanding the wellbeing issues within that school

Photography: Camera to take photos of areas linked to wellbeing, with a discussion afterwards to talk about the photos, a whole group summary with ideas about wellbeing will be given to the RAG.

ALPHA were a bit concerned that RAG members wouldn't understand this activity, but after a short discussion ALPHA agreed that this was a useful activity for identifying wellbeing in schools. ALPHA suggested the following activities and points to think about:

- Give examples of the photos with what you want, this will help with some students who don't fully understand the task.

- A lot of wellbeing involves other people, this may be problematic with getting consent of those people.

- Will need to reinforce that these photos will help open up discussions.

- Will need to provide an induction pack to help explain what is exactly required of the students for this activity.

This method would work well with recruiting younger years to the group as they can use this as an excuse to get out of class. It will also give the young people the opportunity to undertake a photography project which is often not available in the earlier years. ALPHA also felt that enabling students to do this as a group activity will encourage discussion about wellbeing.

The second group were initially unsure about the purpose of photography, and most were not members of ALPHA when Hayley had visited previously about using photography. A few members were unsure about the purpose and we explained that pupils on the group would be able to photograph areas of the school relevant to particular behaviours.

They felt that group members might exploit the activity and take photos of irrelevant things, even if they know that they will be meeting Hayley to explain the photos. The group also queried whether the photos would include people at the school though they did not have a view on whether they should or not. They talked about the idea of someone videoing a fight for the project which would not usually be acceptable.

It was seen as interesting though, with the potential for different views for pupils from different years. The group could then prioritise the topics that come up for multiple years.

There was also a suggestion that the group could use CCTV cameras rather than take their own photos. This would depend on permission being granted. We talked about whether schools have cameras around the school, with some ALPHA members having cameras throughout the school, and others feeling they are only outside the schools and in public areas like hallways and reception.

There is also a problem that these cameras often don't gather negative behaviour like smoking as pupils avoid these areas.

SHRN report data: provide information that is already available with the health of students in their school.

HR presented the SHRN survey to ALPHA to think about how she can use this data, which talks about wellbeing in their schools.

ALPHA felt that this is a useful tool to help back up the discussions, giving it more weight when developing a wellbeing plan. SHRN is a building block to open discussions and photography can help give the reasons why the data is showing this. They suggested that combining the two methods for identifying wellbeing in school would be more suitable. Start off by the students showing what they believe wellbeing is in their school, via photography, and having the SHRN survey data to agree with this or the data can be used to encourage further discussions about areas which haven't been identified in the photography sessions. Use both methods to identify wellbeing.

ALPHA suggested that the data/information presented in SHRN is quite big, they recommended to keep the data down to just graphs and brief summaries.

There was concern over whether the SHRN report summary will work for pupils of all ages, with the group feeling it is maybe suitable for KS4 pupils and older. Younger members (e.g. Year 7) may need something more interactive with suggestions for a quiz to predict the answers followed by the results, or a competitive icebreaker. This would have to feel different to a test. Again this could be done in teams with members from different year groups.

ALPHA felt that the summary is interesting but that there is a lot of information in the full report of all behaviours. The group could potentially be given ranked information on the health areas are most relevant to the school. This could start a discussion on the areas to be tackled.

Stage 5: Problem Prioritisation and Identifying Solutions

Prioritisation: In stage 5, RAG members to decide what the most important wellbeing issues to focus on are. Previous studies do not explain how to do this, but often refer to having 4-6 meetings with group discussion to come to an agreement. HR wanted to know how to get the RAG to decide from the information gathered, what issues they want to focus on.

Post it note system, this allows for everyone to put down what they think is important, diamond ranking system. This way you can identify what issues are similar and different priorities for different year groups. You won't get a whole school priority approach, as what is important for younger years isn't the same as older years, difficult to identify top priorities.

To identify solutions HR proposed three ideas for groups to come up with solutions to the previously identifies problems. These include:

1. Let the RAG decide the best course of action

2. RAG to consult with other students & teachers to identify potential solutions.

3. Present RAG with a number of ideas and potential solutions to tackle the issues raised.

ALPHA suggested to look at previous examples as this will encourage discussion, get them to come up with their own ideas first then show examples. It'll be useful to approach this as mixed year groups, this way it can get young people working together collectively and more impartial to identify solutions to these issues.

Group 2 felt that members of the group could select the areas that they think are key beforehand. They can then see the statistics for the relevant areas and see if it changes their views.

They felt that the pupils from the different years may report different problems, e.g. smoking is unlikely to be an issue in Year 7. Each year could identify the key issue for them and investigate with other pupils in their year. Alternatively pupils in the later years may be able to reflect on the years below.

It was suggested that the case study approach could be used if the group has no ideas on solutions to the problem, but that it should not be instead of ideas the group has.

We thought a little about the need to consider what the school has in place on the different issues for each year. They could look at the issue for the different years (e.g. bullying in Year 9), what is being done and if it is working. The group could potentially compare the different solutions to the same problem in the years and choose the best to apply across the school. This could include identifying a good pastoral member of staff who has solved a problem for a particular year.

The group felt that thinking up solutions would be best done by a combination of 1 (letting the panel decide what is best) and 2 (asking other pupils and teachers what can be done, as a small group will not have the same ideas as their year). Gathering more information from friendship groups was felt to be a good thing on an informal level (no clipboards!). Something like a Survey Monkey online survey, to be completed in form class, was suggested as this would mean less pressure for members and get the views of more people. This would be especially good for gathering the views of students those members of the panel don't know or get on well with..

Stage 6: Finalisation of Action Plan

Finalisation: In this stage, the RAG will be provided with an action plan table from HR. ALPHA we asked for their opinions on how to present this information in a user friendly easy to understand way. Furthermore HR asked if there is a requirement to add any further information to this method. HR also wanted to know how the RAG collectively agrees on the most appropriate course of action.

ALPHA members suggested that this is a good method for presenting and finalising action plans for tackling the wellbeing issues, they stressed the importance of requiring teacher input for this stage, as they are able to implement the solutions. They know how the school can work. ALPHA felt that these action plans are a good opportunity for younger students to get involved and support the development of the action plan. The structure of the action plan keeps students focused on the tasks and enables them to work collectively.

ALPHA agreed that the school's senior management team should be included during this stage as it's important to keep them in the loop and up to date with what is being planned, also they are able to

identify projects which are likely to work and ones which will not. ALPHA suggested that it'll be beneficial for the students if the SMT were included as it can make them feel valued and their work over the previous X weeks is worthwhile and hasn't gone unnoticed.

Furthermore ALPHA liked the idea of giving the RAG the action plan with a solution to tackle the wellbeing issues but suggested that it would be useful to include multiple solutions. It will encourage each stakeholder to work together to discuss the pros and cons with each suggestion and work closely to identify the most appropriate and suitable solution.

The second group agreed with the idea of Hayley taking away the results of the previous stage and then developing an action plan, as they felt it would be difficult for the group to do themselves. Having the chance to inform the plan before is important though with the need for Hayley to take the plan back, explain it, take ideas of what works and what doesn't and make changes.

They felt that the initial training (Stage 3) should include what an action plan is and how they will be able to advise on changes.

They felt that Hayley doing this was better than the panel making the action plan, as it is too big a task for 14 people to do, especially if there are conflicting opinions. ALPHA did suggest though that Year 12/13 pupils (in schools with sixth forms) could be more involved in the development of the action plan. They could then use this experience in future, for example for personal statements when applying to university.

Additional thoughts

Group 2 had some additional time to consider the project as a whole and return to specific stages.

The group felt that the role of teachers needs to be clear, in particular that they are not expected to lead. They also felt that pupils may find it difficult to share their views with pupils, and considered how this could work, so Hayley needs to make sure that teachers are recruited who are committed. Hayley could meet with the teachers before to stress that they will be treated the same as the student members of the group, rather than to lead. They could also come to some but not all meetings. Teachers with a similar experience of being involved in a joint staff-student group could also be seen as first choice for involvement in this.

We also felt that it will be important that the staff and student members of the group get on well. This could mean students (possibly Year 12/13 pupils if the school includes sixth form) being involved in the recruitment of teachers to ensure that the pupils like and are comfortable with the teachers, and that they are aware of young people's challenges. There is an issue of who is recruited first if each group are involved in recruiting the others.

Session 4: Apr 2021 Slides and Results

PHD SO FAR

What we knew already?
- Run standard programmes - same activities in each school.
- Challenges - Developed using researcher ideas and not flexible to individual school needs.
- Increase in desire and practice of co-production with school stakeholders.

What is Co-production?
- Variable use = field of research that is not clear and coherent.
- Defined - School stakeholders make **problem-setting** (what health problems should be targeted) and **problem-solving** (how they can be changed) decisions.
- Different ways to do this and how do stakeholders feel about being part of co-production.

What did I do?

2 phase research study:

   Phase 1: Develop co-production programme.

   Phase 2: Run that programme to evaluate it.

PHASE 1

1 - Systematic Review –Found different types of co-prodcuton alre used and what stakeholder think of them.
- **External Capacity-Building**
- **Individual-level Capacity-Building**
- **System-level Capacity-Building** as it involved establishing Research Action Groups of students, staff and even parents or community members. The RAGs were supported by an external facilitator and data already collected about the students health in the school' to support them to decide health priorities and their solutions.

2 – Pilot the use of participatory methods in secondary schools - Use photography but negotiate with individuals.

ALPHA - Assessing the Systematic Review results and advising on Phase 2 fieldwork.

Recruitment – Different ways to do this (students self-nominate and students nominate teachers).

Group Development - Use Ice Breakers

Problem –Setting - Diamond Ranking

Problem-Solving – Discussions structured by activities.
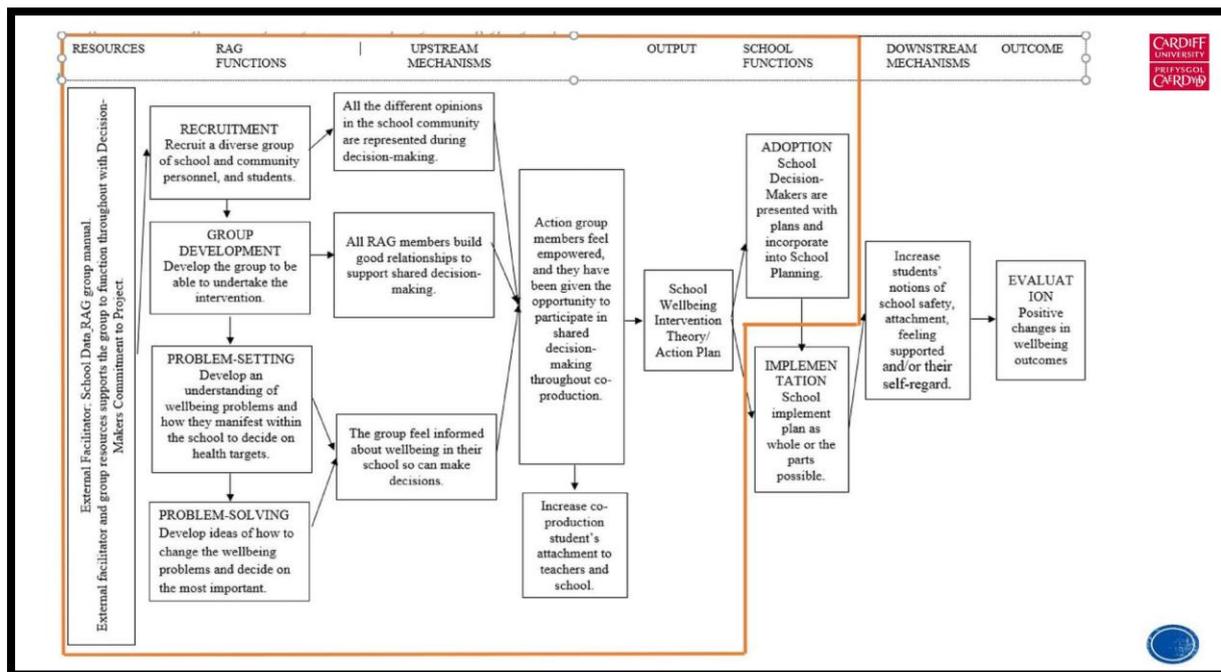
IMPLEMENTATION

COULD WE IMPLEMENT ALL FUNCTIONS IN BOTH SCHOOLS?

Schools were the same in four ways:

- Recruited students BUT some were approached by staff rather than self-nominated – older students hared to recruit and retain.

- Neither school recruited parents or Governors.

- Both schools used school resources well to help undertake the programme – School Link Teacher; school lessons; school space; school information systems.

- Took longer than expected due to 'flexibility' to work around schools.

Schools were different in two ways:

School 1 - **One key person involved** but other staff were hard to get involved and take notice of programme. Staff and students said this was because most **staff weren't interested in student wellbeing** (thought attainment more important) and **didn't do much about student voice**.

School 2 – Everyone **interested in student wellbeing and involvement** and they **embedded intervention well** – informed everyone and whole wellbeing team took responsibility for supporting co-production.

What are the best ways to recruit and retain older students (Year 11 +)?

Very well incentivised and can't interfere with exams	Give them something to get out of it	Have meetings at the start of the year to avoid crossing over with revision
Ensure that anything is flexible around studying and examinations	Find a way to accommodate their busy schedules and offer an incentive	for retaining: have a structured timetable for meeting (same day every time) so that it always fits in
Some reward or during something less important like registration	Make sure that there is a focus on helping students with dealing with exam pressure, not interfering with exams and tell them they can put it on their uni application or cv	More categorised/ personal subjects as in personal for their age catagory

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More categorised/ personal subjects as in personal for their age catagory

Can we do anything about schools where wellbeing is not a priority for all?

Need to understand why it's not a priority and if they need more education on balancing wellbeing and attainment

It definitely takes more than one person to push a wellbeing agenda. Students need to see a cohesive group of teachers to realise it's importance.

Show evidence of schools where it has worked.

Take a look at the socioeconomic status of the local community - use community engagement strategies? If the community cares about well-being, then it'll trickle down into the schools

There needs to be a team of well-being staff and training on HMS days about understanding it better

show them evidence about the correlation between good wellbeing and high exam results

Emphasising the priority for well-being and highlight the link between well-being and good grades as an incentive for an education based school

Offer school incentives for having good wellbeing. Almost that they get ranked for wellbeing so when children choose a high school it could be a deciding ffactor.

make a clear point of how well-being affects achievement (if that's their priority)

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MECHANISMS
DID THE PROGRAMME WORK AS WE EXPECTED?

What did we have problems with

☒ Staff Diversity - Baseline 'buy in' for wellbeing important

School 1 - No teaching staff and pulled in wellbeing officers halfway.　　School 2 – Small but stable group of staff with and without teaching roles.

☒ Student Diversity – Depends on positions in school.

Those that nominate themselves have experience of involvement/responsible roles.　　Those that don't 'less engaged' and 'struggling' students.

☒ Aligning closely to student voice meant staff associated it with school councils potentially at the expense of student and external member recruitment, and the retention of staff in school 1.

☒ Problem-solving decision-making - RAGs struggled because they fixated on problems, and cognitive and knowledge limitations.

To attract 'less engaged' or 'struggling' students we can

Ask staff to pick students who they think fall into these categories — 2.5

Make it clear that student issues raised during photography will be anonymous to staff — 4.5

These students will never be part of a group like this. — 2.5

Strongly disagree / Strongly agree
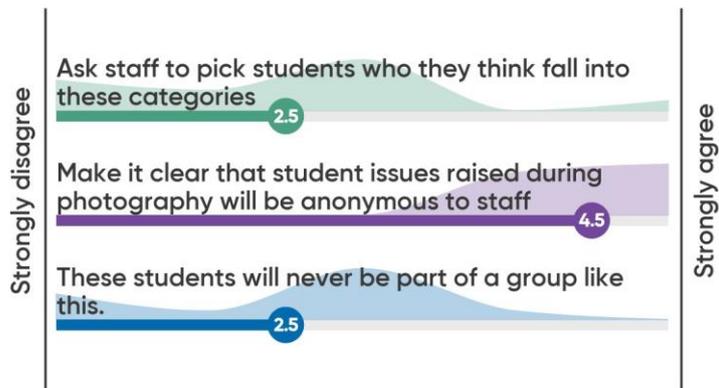
How can we let students and staff know this is different to the school council?

The group will have to build that reputation over time and it will need to be run differently, possibly different staff

You should make it clear it's not the school council because in our school council people are normally a bit big headed any nobobdy knows about them

Create an idea of a more positive, cooperative space to discuss wellbeing

tell them and reiterate it

Whenever ideas are given in school councils nothing is ever done and if you include it with it then no one would want to do it

Tell them that there will be Icebreakers, a lot more group based activities and will be more based around your students in your school, other than teachers

Making sure that when you initially propose the project it is clear what it is.

maybe compare to other projects similar to this, or reiterate what the outcome will be

1. Their voices will be representivie of their fellow students and 2. Their voices will be heard and won't be filtered through "the powers that be"

How should schools events for problem-solving function?

These events should include all RAG members **3.5**

We should have a maximum of four schools per event **2.1**

Schools should send through their priorities beforehand so researchers can think of ideas **4.4**

These events should be held during the school week **4.8**

Strongly disagree — Strongly agree
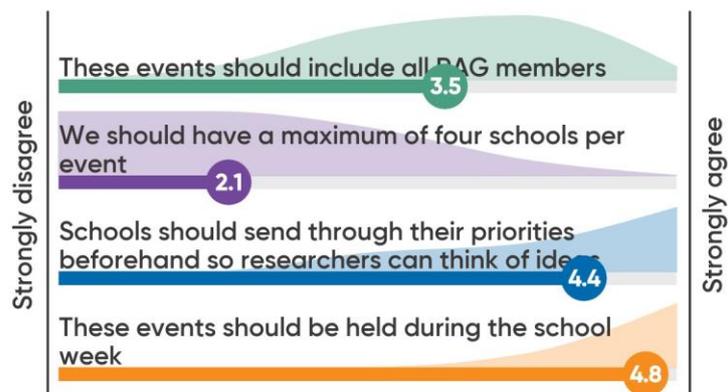
SOCIAL VALIDITY
WERE PLANS RELEVANT AND DELIVERABLE?

Relevance of priorities

- Problems that crossed home-school boundaries were screened out.
- In school 2 as 'struggling' students missing omitted mental health priority.

Deliverable

- School 1 – No as they did not take on actions because couldn't use school resources. Link teacher would do what she could.
- School 2 – Yes took on three of five actions (wrote in SIP) with students and staff thinking of ways to get resources.

What should we do about schools not tackling issues which crossed home-school boundaries i.e. sleep?

CARDIFF UNIVERSITY PRIFYSGOL CAERDYDD

There's nothing they can do about sleep becUe kids sleep when they want because some people think it's cool to stay up late

Need to encourage schools to look at implications of all aspects of wellbeing on school life and help them know how to support students in home life

less last minute homework, educate on the importance of sleep, sell coffee haha

Make the link between sleep-wellbeing-school performance really clear.

Reduce school hours, make them open an hour later and finish an hour later. A way to tackle this is to put teachers through what students do daily to see how they feel

Consistently carrying out surveys and means of feedback to keep engaged with the student and their needs

Often issues that cross home-school boundaries can be a part of teaching - e.g. sleep, healthy sleep hygiene can be taught and encouraged by teachers/pastrol staff etc.

I feel like schools can't do anything about sleep as it's students/parents decisions

show evidence/get students to reiterate the importance to the senior staff

9

What do you think is the biggest reason for schools not being able to implement ideas?

CARDIFF UNIVERSITY PRIFYSGOL CAERDYDD

1st — Some schools just ask students opinions but don't act on them

2nd — No money to fund activities

3rd — No time for staff to organise activities

4th — School priorities change so wellbeing plans go out of date quickly

5th — The reseacher did not stay in the school to support actions being run.

12
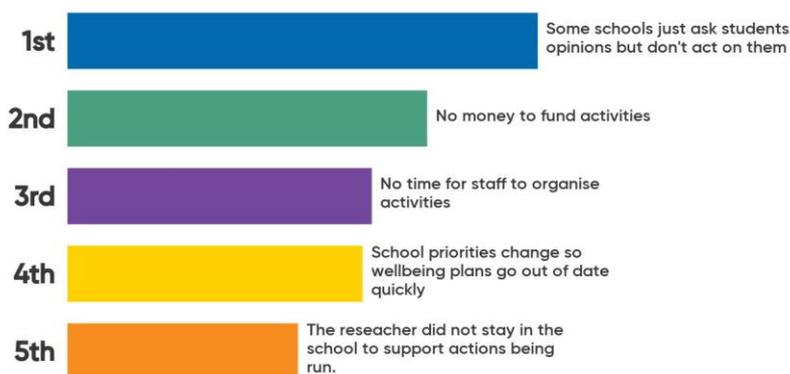
11.2   Appendix B: Systematic Review Paper (Redacted)

11.3 Appendix C: Systematic Review Searches

Generic search strategy (adapted to the functionality of each database: Medline and PsycINFO (Ovid); Embase; ASSIA; and ERIC).

Population/ Sample	(student* or pupil* or young* or youth* or teen* or adolescen* or child*).tw. or students/ or exp high school students/ or exp junior high school students/
Setting	AND (school*).tw. or exp Middle schools/ or exp high schools/ or exp junior high schools/ NOT schools, dental/ or schools, medical/ or schools, nursing/ or schools, pharmacy/ or schools, veterinary/
Intervention	AND Intervention or program* or evaluat* or trial* or coproduc* or involv* or participat* or collabor* or decision-making* or decision making* or action* or engag* or council* or committee* or advis* or empower*
Research Type	AND (qualitative* or implement* or process or feasib* or pilot or case stud* or focus group* or focus-group* or interview* or grounded theor* or grounded-theor* or thematic analys* or framework analys* or discourse analy* or content analys* or hermeneutic* or phenomeno* or ethnograph* or interpretiv* or interpretativ* or realis*).tw. or exp qualitative research/
Outcomes –	AND (tobacco OR smok* OR alcohol OR drink* OR drug* OR substance OR mental health OR wellbeing OR well-being OR depressi* OR anxi* OR emotion* OR life satisfaction OR violence OR bully* OR aggress*).tw. or exp tobacco smoking/ or exp drug usage/ or exp mental health/ or exp school violence/

Limiters - Published in English after 1986

11.4   Appendix D: Review Studies Quality Assessment

Author and Year	Co-production Approach	Trustworthiness	Usefulness
deLara 2000	External Capacity-Building	Low	Low
Paul et al 2010	External Capacity-Building	Low	Low
Tew 2010	External Capacity-Building	Low	Low
Paul et al 2012	External Capacity-Building	Low	Low
Vaughn et al 2013	External Capacity-Building	Low	Low
Voight 2015	External Capacity-Building	Medium	Medium
Jensen et al 2005	Individual-level Capacity-Building	Low	High
Simovska 2007		High	Medium
Simovska and Jensen 2008		High	Medium
Epstein 2007	Individual-level Capacity-Building	Medium	Medium
Soleimanpour et al 2008	Individual-level Capacity-Building	Low	Low
Youth In Focus 2002		Low	Low
Ozer et al 2008	Individual-level Capacity-Building	Medium	Medium
Ozer et al 2010	Individual-level Capacity-Building	Medium	Medium
Ozer et al 2013	Individual-level Capacity-Building	High	High
Miller 2010	Individual-level Capacity-Building	Medium	Low
Goodnough 2014	Individual-level Capacity-Building	Medium	Medium
Shriberg et al 2017	Individual-level Capacity-Building	Medium	Medium
Bond et al 2001	System-level Capacity-Building	Medium	Medium
Glover et al 2002		Low	Low
Mino 2003	System-level Capacity-Building	Medium	Medium
Poulin and Nicholson 2005	System-level Capacity-Building	Low	Low
Bonell et al 2010a	System-level Capacity-Building	High	High
Bonell et al 2010b		High	High
Davison et al 2011	System-level Capacity-Building	Low	Low
Hawe et al 2015		Low	Low
Bell 2014	System-level Capacity-Building	Medium	Medium
Bell et al 2017		Medium	Medium
Fletcher et al 2015	System-level Capacity-Building	High	High
Bonell et al 2015		High	High

11.5   Appendix E: Systematic Review Logic Models for each Co-production Type

Logic Model of Pathways for External Capacity-Building ( ) indicates number of studies

Inputs	Processes		Outcomes

1. Capacity-Building

What:
Knowledge of co-production theory and/or structuring framework

Who:
Researcher Facilitators (5)
Charity Worker Facilitator (1)

2. Structure
What: Core student groups (3);

Multiple stakeholders in problem-setting and solving processes inclusive of students (3), staff (3) and parents (1).

3. Recruitment
What: Staff nominations (4).

4. Group Development Tasks
How: Ice breakers, agreeing ground rules, and discussing participation and confidentiality (1)

5. Problem-Setting
How: Student-led data collection to support discussions (1); Student group discussions (2).

Researcher-led school surveys (3), plus interviews and focus groups (1).

7. Adoption and Implementation

Adoption: Not detailed (3)
Student ideas delivered to decision-makers:
School report (1); Student presentation (1); Staff use student picture (1);

Implementation: Assessed (0)

6. Problem-Solving
How: Stakeholder consensus discussions – Unstructured (1) or structured through: Socratic questioning (1); School opinion poll (1); or School problem pictures (1)

Researcher-led - brainstorming exercise plus analysis (1); researcher analysis of problem-setting data plus member checking (1)

8. Evaluation

Co-production Individuals:
Pre and post socioemotional competencies (1)

School-level Data:
Pre and post Perception of school climate and pro-and antisocial behaviour (1)

Student behaviour incidents (1)

Logic Model of Pathways for Individual-Level Capacity-Building for Co-production ( ) indicates number of studies

Inputs	**Processes**	**Outcomes**

1. Capacity-Building

What: Development of co-production curricula/ training delivered to school stakeholders

Curricula/Training Foci:
Research Skills (6); Organisational Change (5); Student Leadership (2); Project Understanding (1)

Who: Curricula/Training Delivery and Project Facilitation
Youth workers delivering directly to students and facilitating on-site (4); youth workers delivering to both teachers and students for all adults to co-facilitate on-site (1); researchers delivering and facilitating with students (2); researchers training teachers who facilitate on-site (1); researcher delivering training to teachers and students for all adults to co-facilitate on-site (1)

2. Structure

What: Class Level (6); Small Group (3)

3. Recruitment

How: Teachers elect class (2); Students elect class (4); Staff nominations (1); Student applications (1); School Council (1)

4. Group Development Tasks
Ice breakers (3); communication skills (3); developing ground rules (1); active listening (1); goal setting (1).

7. Adoption and Implementation

Adoption: Not detailed (3);

Student ideas delivered to decision-makers:
Presentations (6); seamless adoption (2); school decide adoption process (1).

Implementation: Assessed (0)

6. Problem-Solving

How: Group Discussions (9) structured through:
Problem-setting research (2); Facilitator questioning (1); Facilitator scaffolding (1)

5. Problem-Setting

Topic Selection: Students decide (6); Research team limit (2); Research team decide (1)

How: Students' decide data collection method (7); Group discussion (1); Photography (1).

Participant Data from: Only recruited students (2); School peers (6) Staff (2); Students from other schools (1)

8. Evaluation

Co-production Individuals and controls:
Socio-political skills, motivation to influence school and community, participatory behaviour and perceived control (1)

Logic Model of Pathways for System-Level Capacity-Building for Co-production ( ) indicates number of studies

Inputs

1. Capacity-Building
What: Development of a School Research Action Groups (RAG)

Project manuals (3); Researcher collected data (6).

Who: Multiple school and external members.

Facilitators*:* Researcher (3); Employed expert (3); School staff (1)

Processes

2. Structure
RAGs (7)

3. Recruitment
How: School decided (3); Election or self-nomination (2) ; Principal nomination (1); Staff and student nomination (1)

4. Group Development Tasks
How: Agreeing group rules and goals, and electing roles (2) Group Development Tasks (2)

7. Adoption and Implementation

Adoption: RAG and facilitator remained (6); commitment from principal (1); funding allocated (4)
Implementation: Assessed (0)

6. Problem-Solving
How: Group Discussion (7); theory, practice and research (2)

5. Problem-Setting (understanding the school context and-prioritising problems)
Understanding School Context: Needs assessment (6); Audits (4); Mapping hotspots (1); PhotoVoice and social network analysis (1); Group Discussion (1)
Participants: Students (6); Students and staff (1).
Prioritising problems: Group discussion (4) Ranking exercise (3), or through needs assessment (2).
Supplementary Data: school routine data (1); focus groups (1).

Outcomes

8. Evaluation
Co-production Individuals: participation and acceptability (1); acceptability and social validity (1)

School-level Data: mental health, smoking, and alcohol (1); bullying, substance use and mental, physical and sexual health, school engagement and social attachment (1); bullying victimisation and perpetration of violence and aggression, quality of life; psychological functioning and wellbeing, risk behaviours, NHS care, police contact and truancy(1); substance use and driving behaviour (1).

11.6 Appendix F: Manual/activity sheets

<u>Meeting 1: Prioritisation</u>

<u>Aims</u>

For participants:

1 – To understand the wellbeing themes raised for this school.

2 – To rank the wellbeing themes for the school plan.

3 – To understand the reasons for ranking the themes in that order.

<u>Activities</u>

1 - To understand the wellbeing themes raised, each group should read the wellbeing theme cards. Below is an example of the graphs from the survey with help on how to read them (15 minutes).
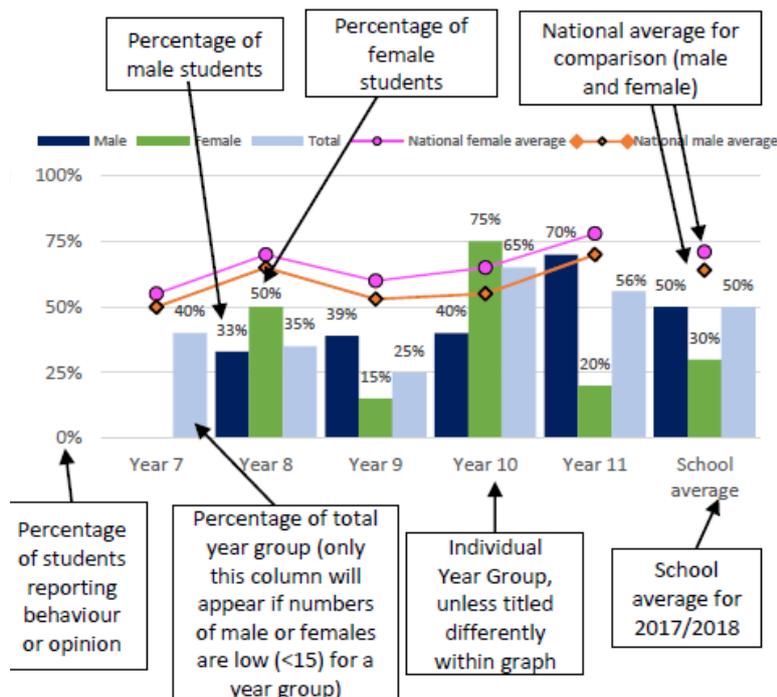
2 – Once you have read the cards, you need to rank the themes by importance. As you have 20 theme cards, it is suggested you rank the themes as shown below (15 minutes).

Most Important

			1			
		2	3	4		
5	6	7	8	9	10
11	12	13	14	15	16
	17	18	19		
		20			

Least Important
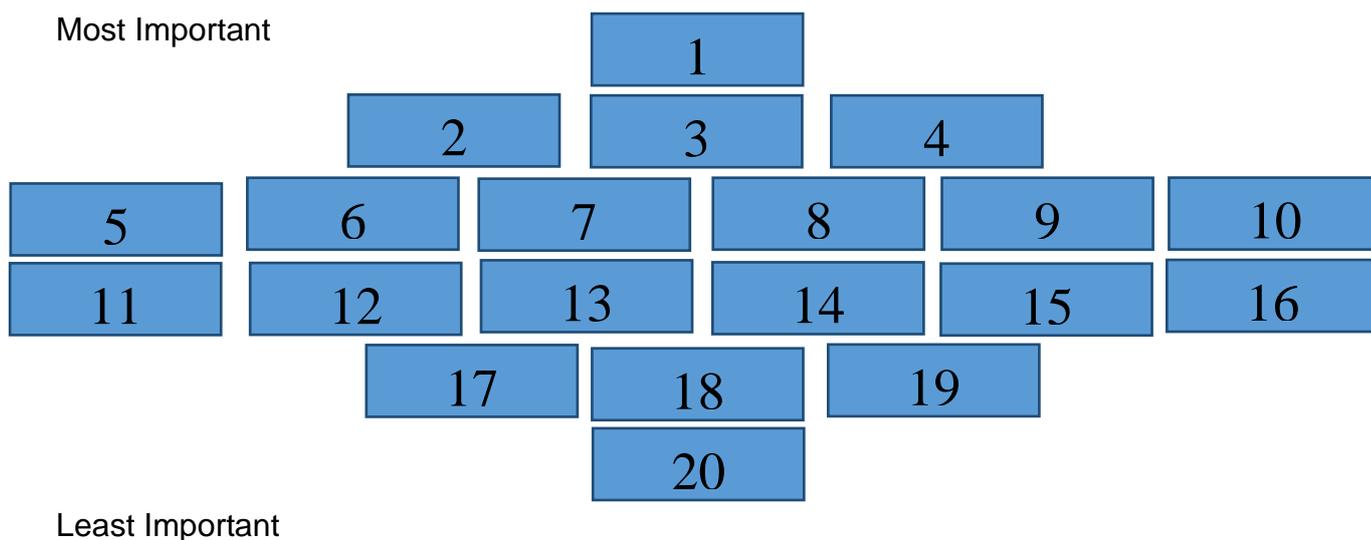
A theme can be considered important for many reasons, for example:

   i) It affects the mental health and wellbeing of a large number of students in this school.

   ii) Even if it only affects a few students, it has a large effect on their mental health and wellbeing.

   iii) It needs urgent attention.

   iv) It is possible to change this theme.

   v) Changing this theme will have a large effect in the school.

You may be able to think of more reasons for ranking a theme high or low in the diamond.

3 – Once you have decided on the order, please write on the back of the card the reason it was ranked in that position (15 minutes).

Meeting 2: Solution Development (Example from Rowland)

Aims

For participants:

1 – To understand how the wellbeing themes were prioritised to verify the top themes for the wellbeing plan.

2 – To recap on the data already collected about the top themes.

3 – To begin thinking about what changes can be made in the school.

Activities

1 - To understand the prioritisation of themes, we will read over the wellbeing priority table and discuss the justifications for the placing the themes where they are. As a group, we will discuss:

- 1 – Should the top five remain?
- 2 – Are there any themes that should be higher up?
- 3 – Should we only be focusing on five?

(20 minutes)

Theme	Younger Students	Older Students	Teachers	Overall Score
Teacher Relationship	14	17	18	49
Awareness Raising	13	18	13	44
Bullying	18	16	7	41
Disrespecting School	17	4	16	37
Drink	7	12	15	34
Spaces	5	10	17	32
Friendships	10	15	6	31
Schoolwork	12	9	10	31
Sleep	16	14	1	31
Food	8	13	9	30

Student Voice	6	8	14	28
Wellbeing support	15	7	5	27
Identity	3	11	12	26
Lunchtime	11	3	8	22
Technology	9	6	3	18
Lesson	4	2	11	17
Journey to school	2	5	4	11
Clubs	1	1	2	4

2 – Next we need to think of change ideas. To do this, we will use the model below that shows different levels that change can be made. (25 minutes)
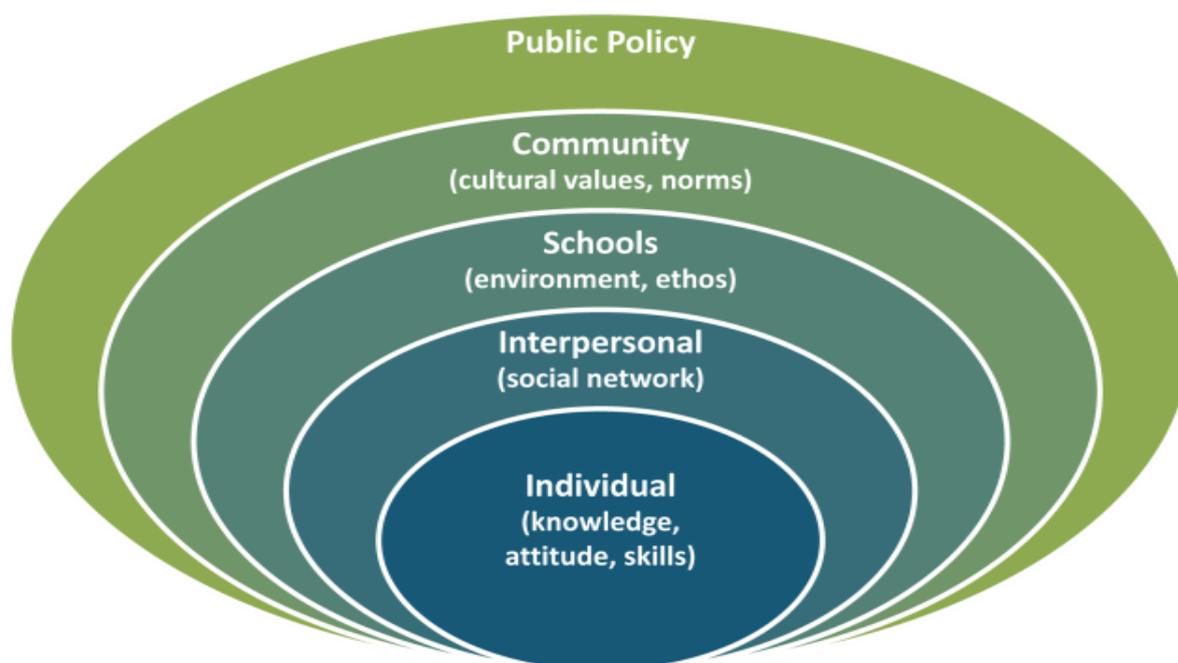
Examples based on food and drink

Public Policy – The Welsh Government or Local Authority can change the rules and guidance so that each school meal includes at least two fruit and/or vegetables. Students could start a campaign to ask the Local Authority to change the school food policy.

Community – The school could write to/work with local shops asking them not to sell energy drinks to students before school and at lunchtimes.

Schools – Choice architecture is about how we design environments to change people's choices. The picture shows how shops put chocolate around the till so people buy more. The school could have fruit and water at the tills in the canteen.

Interpersonal

Peers – Students could become trained peer leaders who help other students to make healthy decisions.

Family - Write to parents about healthy lunch boxes.

Teachers – As role models i.e. what is each teacher's favourite healthy meal.

Individual – Students could have lessons on how important eating five a day is why or have cookery lessons about healthy meals on a budget.

Meeting 3: Action Planning

Aims

For participants:

1 – To understand and verify the solutions already raised.

2 – To consider suggested solutions found in practice or in research.

3 – To add further information to how the solution can be achieved.

Activities

1 – This session will involve doing a paper carousel with each theme on a different flipchart paper (as shown below). The groups need to:

a) Read the black text in the table (what do we already know? & How will we make change?) to decide if you want to keep or remove the solutions suggested already.

b) The red suggestions are new ideas that Hayley has found - do you want to accept, accept with modifications or reject the ideas?

c) Once you have agreed a solution, decide and write down:

Who will do it?

When can it be achieved by?

How will you know it is achieved?

After 15 minutes, you will be given another theme to discuss.

Table example:

1.a Target Priority (What do we want to change?)				
What do we already know?	How will we make change?	Who will do it?	When can it be achieved by?	How will we know it has been achieved?

Meeting 4: Action Plan Finalisation

Aims

For participants:

1 – To review the action plan that has been produced and make amendments or add detail where necessary.

2 – Complete a questionnaire about the process undertaken over the last few months.

Activities

1 – This session will be facilitated by Hayley who will go through each issue in turn to make sure that the data is acceptable to the participants.

Some of the data is highlighted on the plans in red as there are some undecided actions or data from the previous round was not clear.

2 – We will be doing interviews about the process in the following couple of weeks. First though, to get a snapshot of what people have thought I would like the students and staff to fill in the following questionnaires.

11.7   Appendix G: School Recruitment Documents

Changing Wellbeing in Your School

My name is Hayley Reed and I am a PhD research student from Cardiff University. I am conducting research to understand how Research Action Groups could be formed in schools and supported to develop school-specific action plans to affect the wellbeing of school stakeholders. To enable me to do this, I would like to recruit two schools in which to form Research Action Groups.

Benefits to Schools

This study will support schools to address wellbeing needs and student voice; both of which are national priorities in Wales. The need to address these agendas is most notably outlined in the new Estyn Common Inspection Framework (2015). The final action plan with school intentions to implement actions can be showcased to Estyn at inspection. Further, the study has been designed so that the school-specific action plans will be available to Senior staff early in the Summer term to aid School Development Planning for the next academic year.

The Research

The research will run from the 2nd half of the Autumn term until the beginning of the Summer term in the academic year 2018-19. I will be asking participating schools to:

- Assign an area within the school that I can confidentially host all of the research encounters with participants.

- Assign at least three members of school staff, known herein as support staff, as a point of contact for me. It is imperative that at least one of these staff is a member of the Senior Management Team to allow the development of feasible and acceptable wellbeing change ideas.

- Allow the support staff to meet with me before the research commences to decide how to recruit the students and what the school safeguarding procedures.

- Allow the support staff to help with recruitment of up to 10-14 students from a range of year groups and with a range of abilities. These students, along with the school support staff and myself, will form the Research Action Group which will develop the wellbeing action plan. It is envisioned that this group will meet up to 6 times during the study period.

- Initially, host the student researcher within the school for up to three weeks to conduct data collection through photography with the recruited students to gage their ideas about wellbeing.

- Permit the Research Action Group access to the school's Student Health and Wellbeing Report from the 2017-18 SHRN (School Health Research Network) survey. This will provide a secondary data source, alongside the photography data, for the Research Action Group to consider when deciding on wellbeing change ideas. These reports are the property of the school Headteacher so their agreement to use these reports will be required.

- Once the action plan is developed, allow the student researcher to conduct a focus group and/or interviews with Research Action Group members to understand their experience of the process.

This project has already received Ethics Approval from the School of Social Science Ethics Committee at Cardiff University. I will also be providing the students and their parents with details of the research through an information sheet and asking them to sign consent forms before the research starts. Only students with parental consent will be able to be part of the study. School staff involved will also be asked to sign consent forms.

Research Publications
The research will be produced into a PhD thesis and publicly available journal articles. Details that could be used to identify the students and the schools will not be included in any publication.

If the schools wish, the researcher will present a summary of the research findings which can be used to feedback to students, school staff, Governors and/or parents.

Next Steps
All interested schools can contact me on reedhm@cardiff.ac.uk or 029 20879053. Alternatively, you can contact Joan Roberts, the School Health Research Network Manager, who is supporting recruitment to this project - robertsj41@cardiff.ac.uk or 029 20874739.

11.8   Appendix H: Individual Observation Schedule

School Code: **Student Code:**

Day and Date of Reflection: **Time Taken:**

No. of Photographs taken:

1.   Implementation (fidelity)

Participant Responsiveness: a) Did the student understand the aim of the activity?

Not Understood	Partially Understood	Fully Understood
0 – The individual understood the task aims in a different way than was intended.	1 – The individual understood some of the task aims as intended.	2 – The individual understood all of the task aims as intended.

b) Was the student engaged in the activity?

Not Engaged	Partially Engaged	Fully Engaged
0 –Individuals were off task and engaged in other activities unrelated to the assignment all the time so they were not prepared for the elicitation interview.	1 – Individuals were often off task, or showed a primacy and recency effect in data collection so they were not fully prepared for the elicitation interview.	2 – Individuals were mostly on task, and took photographs throughout the period with the camera so they were prepared for the elicitation interview.

Quality of instruction: b) Did the student seek extra support to complete the photography? (After the initial instruction by the facilitator).

Major Support	Minor Support	No Support
0 – After initial instruction and further support, the researcher decided to lead the elicitation interview.	1 – After initial instruction, the facilitator is requested to or decides to give further support to the individual before they undertake or during the photography.	2 – After initial instruction, the facilitator does not need to give further support to the group to undertake the task.

Adherence d) Did the student complete the activity?

Not Complete	Partially Complete	Fully Complete
0 – Students added many themes to their photography dataset in the elicitation interview.	1 – Students added minor themes to their photography datasets in the elicitation interview.	2 – Students added no themes to their photography datasets in the elicitation interview.

2. <u>Context – Barriers and Facilitators</u>

Think about barriers and facilitators in terms of Complex Adaptive Systems i.e. diversity and dynamic nature of agents; nested system structure; information flow; feedback loops; rules; interaction; dependent but autonomous; non-linearity and unpredictability; change and co-evolution; emergent.

a) How did the school staff help to hinder/facilitate the photography?

b) Did anything happen within the school which hindered/ helped the student to complete the photography? (resources, communication and information flow, school timings, structure of the day, other educational/non educational activities competing with RAG, formal policies, rules or school culture)

c) Did anything happen outside the school which hindered/ helped the meeting/activity? (LEA, Governors, parents or community).

Comments

3. Mechanism of Change - Acceptability (individual level):

a) Did the student talk about anything related to being able to/not being able to use the cameras?

b) How did the student respond to the photography task? (were they relaxed/anxious, talkative/quiet, withdrawn/engaged?)

c) How did they find the task? (hard to start and/or continue the photography or talking about it?

d) Did it take a long or short time? (more than or less than expected) Why?

e) Is there anything about the session you would change in the future? Why

f) How did the student think I could improve the enactment of photography?

g) How did they think the intervention context produced barriers or facilitators to aiding them to complete the photography?

4. Mechanism of Change - Participation

a) Was participation passive, active or distracted?

b) Did the student take control of the photography (?

c) Did you intervene/or direct the method at any point, if so, why?

d) Did any ethical issues arise during the method (i.e. taking photographs in toilets etc./ not getting verbal consent of other students)?

Comments

Mechanism of Change - Informed about wellbeing in context

a) How did the student respond to talking about wellbeing?

b) What are your initial thoughts on the wellbeing data that was produced?

c) Was there any surprising/interesting wellbeing supports or problems raised?

d) Were there any wellbeing supports or problems that are already in research literature? If so, were they understood by the student in a similar or different manner to the literature?

Comments

11.9   Appendix I: Group Observation Schedule

Observation Details

Day and Date of Observation: School Code:

Coproduction Activity: Meeting Number:

Start time: End time:

Attendance

Students – Student codes:

No. of students: No. of males.   No. of females

Staff – Student codes:

No. of staff: No. of males.   No. of females

Comments - lateness (why?); those not in RAG attending (why?)

Setting

Facilities - Room (size and set-up; adequacy for activity, lighting and temperature; acoustics; distractions; issues with finding or double booking rooms).

Equipment (what is needed is present; not too much clutter)

---

1. Implementation (fidelity)

Participant Responsiveness: a) Did the group understand the aims of the activity?

Not Understood	Partially Understood	Fully Understood
0 – The group understood the task aims in a different way than was intended.	1 – The group understood some of the task aims as intended.	2 – The group understood all of the task aims as intended.

b) Were the group engaged in the activity?

Not Engaged	Partially Engaged	Fully Engaged
0 –Groups were off task and engaged in discussions unrelated to the assignment.	1 – Group discussions were often off task, participants spoke over each other, or a small number did most of the work.	2 – Groups discussions were mostly on task, most participants participated and shared group responsibilities.

Quality of instruction: c) Did the group seek extra support to complete the activity? (After the initial instruction by the facilitator).

Major Support	Minor Support	No Support
0 – After initial instruction, the facilitator was requested to or decided to lead the task.	1 – After initial instruction, the facilitator is requested to or decides to give further support to the group to undertake the task.	2 – After initial instruction, the facilitator does not need to give further support to the group to undertake the task.

Adherence d) Did the group complete the activity?

Not Complete	Partially Complete	Fully Complete
0 – The group did not complete any of the aims of the meeting.	1 – The group completed most of the aims of the meeting.	2 – The group completed all of the aims of the meeting.

Think about barriers and facilitators in terms of Complex Adaptive Systems i.e. diversity and dynamic nature of agents; nested system structure; information flow; feedback loops; rules; interaction; dependent but autonomous; non-linearity and unpredictability; change and co-evolution; emergent.

d) How did the RAG school staff help/hinder the meeting/activity taking place?

e) How did the RAG students help/hinder the meeting/activity taking place?

2. Context

f) Did anything happen within the school which hindered/ helped the meeting/activity? (resources, communication and information flow, other staff, school timings, structure of the day, other educational/non educational activities competing with RAG, formal policies, rules or school culture)

g) Did anything happen outside the school which hindered/ helped the meeting/activity? (LEA, Governors, parents or community).

Comments

3. Mechanism of Change - Acceptability

a) How did the RAG members respond to the activity/resources? (i.e. were they relaxed/anxious, talkative/quiet, withdrawn/engaged? How did this change over time)

b) Did they find it hard to start and/or continue with the activity? Why?

c) Did it take a long or short time? (more than or less than expected) Why?

d) Is there anything about the session you would change in the future? Why?

e) Did any participants comment on the activities, if so, what did they say?

Other comments

4. <u>Mechanism of Change - Group Functioning</u>
a) How are RAG members sat in terms of student-staff, gender, year groups, friendships?

b) Do the group work towards a common purpose?

c) How did the group function? (cooperative, disengaged, argumental)

d) What stage of group development are the group in? (forming, storming, norming, performing, adjourning)?

e) Did individuals take on different roles in the group? Who took on what role?

Comments

<u>Mechanism of Change - Informed about Wellbeing in Context</u>
<u>a)</u> How did the RAG respond to discussing wellbeing in a group setting?

b Did the group struggle with discussing any particular wellbeing topic or idea? Why Thinking about the photography and SHRN data, was there any information discussed that was new or surprising?

c) Were there wellbeing supports or problems that are already in research literature? If so, were they understood by the RAG in a similar or different manner to the literature?

d) Did any ethical issues arise during the activity?

Comments

5. <u>**Mechanism of Change - Participation and Shared Decision-Making**</u>

a) Did the RAG take control of the activity?

b) Did you intervene/or direct the activity at any point, if so, why?

c) Was participation passive, active or distracted?

d) Did all members get a chance to give their views?

e) Were all views taken into consideration?

Comments

11.10 Appendix J: RAG Survey

<u>Research Action Group Survey</u>

School Code:	Teacher or Student Code:
Number of action groups attended:	

<u>INTRODUCTION</u>

Dear Research Action Group Member,

To help me understand what members thought about being involved in Research Action Groups in their school I would like you to take part in this survey. As with all the research methods in this project, you do not have to take part if you do not wish to. If you have any questions about the survey, feel free to ask before you decide whether you want to fill it in.

Many Thanks,

Hayley

<u>MULTIPLE CHOICE QUESTIONS -</u> Please circle the answers that most represent your view.

1 - Did the action group include students from a range of different backgrounds (e.g., different year groups, genders and ethnicity)?	A very good range Quite a good range Not a good range Not a good range at all
2 - Did the action group include a range of different staff from across the school? (e.g. teachers in different roles in the school)	A very good range Quite a good range Not a good range Not a good range at all
3 – Were the group development tasks useful in helping you build a relationship with other members?	Very useful Quite useful Not useful Not useful at all
4 - Were the group development tasks useful in helping you understand how the group would function?	Very useful

	Quite useful
	Not useful
	Not useful at all
5 – Were the photography themes useful in helping the action group understand wellbeing in the school?	Very useful
	Quite useful
	Not useful
	Not useful at all
6 – Were the statistics useful in helping the action group understand wellbeing in the school?	Very useful
	Quite useful
	Not useful
	Not useful at all
7 – Did the prioritisation task help the action group decide on relevant wellbeing topics to tackle?	Very helpful
	Quite helpful
	Not helpful
	Not helpful at all
8 - Did the brainstorming task help the action group decide on relevant wellbeing topics to tackle?	Very helpful
	Quite helpful
	Not helpful
	Not helpful at all
9 – Did the last meeting help to finalise the action plan?	Very useful
	Quite useful
	Not useful
	Not useful at all
10 – Did all action members have their say throughout the process?	Yes
	No
	Not sure
11 - Was the researcher useful in ensuring that all action group members could have their say?	Very useful
	Quite useful
	Not useful
	Not useful at all
12 - Overall, do you think this project was a good way to ensure that students and staff contribute to decision-making at this school?	Yes
	No
	Not sure
13 - Was the researcher useful in supporting the overall process?	Very useful
	Quite useful
	Not useful
	Not useful at all
14 – Overall, do you think the action group process produced a	Yes

relevant school wellbeing plan?	No
	Not sure
15 – How likely is it that the wellbeing plan will be implemented in your school?	Very likely
	Quite likely
	Not likely
	Not likely at all

WRITTEN QUESTIONS - Please write as much or as little as you.

1 - What did you like about the research action group/project? And why?

2 - What did you dislike about the research action group/project? And why?

3 - What would you keep about the project? And why?

4 - What would you change about the project? And why?

5 - What helped or stopped you to give your views during the group meetings?

11.11 Appendix K: RAG Student Interview Schedule

Thank you for agreeing to take part in this interview. I would like to ask you some questions about your experiences and views of the project you have been part of. Just to remind you, this involved the photography project and the Research Action Group meetings, both of which helped us to create a wellbeing plan for your school (take prompts with you). The interview should take about one hour. If you would like a break, just let me know and we can stop for a bit.

INTRODUCTION
- Check consent form.
- Researcher name and background to project again. Use of the Dictaphone.
- They can withdraw at any point. Confidentiality and anonymising transcripts.

1. Opening Questions
- Tell me about your school? What do you like? What do you not like?
- What do you think the aims of the project were?
- How did you find out about the project?
- How and why did you become involved?
- If you nominated yourself, why did you want to be part of the project?
- If you were chosen, what did you think about being chosen for the project?

2. Other responsibilities in the school
- Are you a member of any other projects in school like the school council or school nutrition action group?
- How has this helped/ not helped you to be involved with this group?

3. Implementation of RAG
Overall
- Have there been any reasons the group worked well? If so, what are they?
- Have there been any problems with the group? If so, what are they?

School Ethos
- Did you feel before this project that the school were interested in student wellbeing? Why?
- Did you feel before this project that the school were interested in listening to students' ideas about changing the school? Why?

School Agents
- Did you know the staff before joining the group? How did you feel about them?
- Has the way you feel about the staff changed since you came to the group? How?
- Did you know any other students in the group before you came?
- How did you feel about there being friends/or students you did not know in the group?
- Has your relationship with other student members' changed? How?

4. Mechanisms of Change

Overall Acceptability

- What did you think of the overall project?
- What did you enjoy about the project?
- What did you not enjoy about the project?
- Is this project a good way to develop school wellbeing plans? Why?
- Is the project a good way to involve students and staff in school decision-making? Why?
- What do you think are the most important parts of the project?
- What, if anything, would you change about the project?

Recruitment

- See before.
- Refer to survey answer – You said that the action group included/ did not include students from a range of different backgrounds? Can you explain this further?
- Refer to survey answer – You said that the action group included/ did not include a range of different staff from across the school? Can you explain this further?

Group Development and Functioning

- What did you think of the group development exercises? OR Refer to survey answer - You said that the group development tasks were ……. Can you explain that to me?
- What did you think of the group functioning? OR Refer to survey answer - You said that the group functioned…… Can you explain that to me?
- Refer to survey answer - You said individuals did/ did not take on different roles in the group, how did this help/hinder the project?

Informed about Wellbeing in Context

- What did you think of the photography project as a way to understand wellbeing in school? OR refer to survey
- What did you think of using the statistics from the SHRN reports in the project as a way to understand wellbeing in school? OR refer to survey
- How well do you think the wellbeing data reflected the wellbeing situation in the school?
- Did the prioritisation task help the group decide on relevant wellbeing topics to tackle? OR refer to survey
- Did the brainstorming task help the group decide on relevant wellbeing topics to tackle? OR refer to survey
- Did the last meeting help to finalise the action plan? OR refer to survey

Participation and Shared Decision Making

- Did all members get a chance to give their views? OR refer to survey
- Were all views taken into consideration? OR refer to survey
- Do you think this project was a good way to ensure that students and staff contribute to decision-making at this school? OR refer to survey

External Facilitator

- What did you think about the external facilitator role? OR refer to survey

- Was the facilitator useful in ensuring that all action group members could have their say? OR refer to survey
- Was the facilitator role useful in supporting the overall process? OR refer to survey

5. Social Validity

Looking at the action plan again:

- What do you think of the wellbeing plan produced?
- What do you think the positives about the plan are?
- What do you think the negatives about the plan are?
- How likely is it that the wellbeing plan will be run in your school? Why do you think this?
- How could the process be improved to produce a better plan for the school?
- Can you think of a better way to make a plan so that it is run in a school?

11.12   Appendix L: RAG Staff Interview Schedule

Thank you for agreeing to take part in this interview. I would like to ask you some questions about your experiences and views of the project and group we established and supported to develop a wellbeing plan for your school. The interview should take about one hour.

INTRODUCTION
- Check consent form has been received.
- Researcher name and background to project again. Use of the Dictaphone.
- They can withdraw at any point. Confidentiality and anonymising transcripts.

1. Opening Questions
- Tell me about your professional role within the school
- What are the school's core values and profile in regard to wellbeing and student voice?
- What is your role in supporting student wellbeing?
- What is your role in supporting student voice?

2. Recruitment of school and staff
- Who decided the school should be part of the project? What did others feel about that?
- What was the drive for the school to be part of this project?
- How and why did you become involved with the RAG?
- What role did you play in supporting the RAG?

3. RAG purpose
- How would you describe the RAG?
- What do you think the overall aims of the RAG were?

4. Implementation of RAG
Overall
- What have been the main facilitators to implementation in this school? (Why was there support)

- What have been the main barriers to implementation in this school? (Why was there a lack of time/resources or any other barriers raised?)

School Ethos
- What are the school's core values in regard to student voice? How has this helped/hindered the implementation of the RAG?
- How has the school's core values in regard to wellbeing helped/hindered implementation?
- What school priorities, policies and/or practices impacted upon implementation?

School Agents
- How has the Senior Manger Team/Teacher/Student characteristics and attitudes impacted upon the implementation of the RAG?

- How has the communication between staff helped/hindered implementation?

Suprasystem influences

- What influence, if any, have the LA's core values or policies had on implementation?

- What influence, if any, have Estyn's core values or policies had on implementation?

- What influence, if any, have the WG's core values or policies had on implementation?

5. Mechanisms through which it happens

Overall Acceptability

- What did you think of the overall process?
- Is this coproduction process an acceptable way to develop school wellbeing plans? Why?
- Is the process an acceptable way to involve students and staff in school decision-making? Why?
- What do you think are the integral parts of the coproduction?
- What, if anything, would you change about the coproduction process?

Recruitment

- How were staff/students recruited into the RAG?
- What were the barriers or facilitators for RAG recruitment?
- Refer to survey answer – You said that the action group included/ did not include students from a range of different backgrounds? Can you explain that further?
- Refer to survey answer – You said that the action group included/ did not include a range of different staff from across the school? Can you explain that further?

Group Development and Functioning

- What did you think of the group development exercises? OR Refer to survey answer - You said that the group development tasks were ……. Can you explain that to me?
- What did you think of the group functioning? OR Refer to survey answer - You said that the group functioned…… Can you explain that to me?
- Refer to survey answer - You said individuals did/ did not take on different roles in the group, how did this help/hinder the project?

Informed about Wellbeing in Context

- What did you think of the photography as a way to understand wellbeing in school? OR refer to survey
- What did you think of using the statistics from the SHRN reports as a way to understand wellbeing in school? OR refer to survey
- How well do you think the wellbeing data reflected the wellbeing situation in the school?
- Did the prioritisation task help the group decide on relevant wellbeing topics to tackle? OR refer to survey
- Did the brainstorming task help the group decide on relevant wellbeing topics to tackle? OR refer to survey
- Did the last meeting help to finalise the action plan? OR refer to survey

Participation and Shared Decision Making
- Did all members get a chance to give their views? OR refer to survey
- Were all views taken into consideration? OR refer to survey
- Do you think this project was a good way to ensure that students and staff contribute to decision-making at this school? OR refer to survey

External Facilitator
- What did you think about the external facilitator role? OR refer to survey
- Was the facilitator useful in ensuring all action group members could have their say? OR refer to survey
- Was the facilitator role useful in supporting the overall process? OR refer to survey

6. Social Validity
Looking at the action plan again:
- What do you think of the wellbeing plan produced?
- Does it meet its aims?
- Do you think the action group process produced a relevant school wellbeing plan? What are you basing that assessment on?
- How likely is it that the wellbeing plan will be implemented in your school? What are you basing that assessment on?
- How could the process be improved to produce a more accurate and relevant plan for the school?

11.13   Appendix M: SMT Focus Group

Thank you for agreeing to take part in this focus group I would like to ask you some questions about the co-production project I have been running in your school this year. In the project I have established and supported a Research Action Group to develop a wellbeing plan for your school. The interview should take about one hour.

INTRODUCTION
- Check consent forms has been received.
- Researcher name and background. Use of the Dictaphone.
- They can withdraw at any point. Confidentiality and anonymising transcripts.

1. Opening Questions
- Tell me about your professional roles within the school

2. Awareness of the project
- How did you become aware of the project?
- How and why did your school become involved with the project?
- Were you involved in the decision to take part in this project? How?
- What role, if any, did you play in the project?
- What needs did you anticipate that the project would meet?

3. RAG purpose
- What do you think the overall aims of the RAG were?

3. Implementation of RAG (will be modified to reflect the data analysed from the RAG members interviews)
Overall
- What have been the main facilitators to implementing the project in this school?

- What have been the main barriers to implementing in this school?

School Ethos
- What are the school's core values in regard to student voice? How has this helped/hindered the implementation of the project?
- What are the school's core values in regard to wellbeing? How has this helped/hindered implementation?
- What school priorities, policies and/or practices impacted upon implementation?

School Agents
- How has the Senior Manger Team/Teacher/Student characteristics and attitudes impacted upon the implementation of the RAG?

- How has the communication between staff helped/hindered implementation?

Suprasystem influences

- What influence, if any, have the LA's core values or policies had on implementation?

- What influence, if any, have Estyn's core values or policies had on implementation?

- What influence, if any, have the WG's core values or policies had on implementation?

4. Mechanisms of Change (will be modified to reflect the data analysed from the RAG members interviews)

Overall Acceptability
- What did you think of the overall process?
- Is this coproduction process an acceptable way to develop school wellbeing plans? Why?
- Is the coproduction process an acceptable way to involve students and staff in school decision-making? Why?
- What do you think are the integral parts of the coproduction?
- What, if anything, would you change about the coproduction process?

Recruitment
- Did the action group include/ not include students from a range of different backgrounds? How did this help/hinder the project?
- Did the action group include/ not include a range of different staff from across the school? How did this help/hinder the project?

External Facilitator
- What did you think about having an external facilitator to run the project? Why?

5. Social Validity
Looking at the action plan:
- What do you think of the wellbeing plan produced?
- Did it meet its aims?
- Do you think the action group process produced a relevant school wellbeing plan? What are you basing that assessment on?
- Does it meet the level of wellbeing need in the school?
- How likely is it that the wellbeing plan will be implemented in your school? What are you basing that assessment on?
- How could the process be improved to produce a more accurate and relevant plan for the school?
- What steps have you taken to incorporate this wellbeing plan into the School Improvement Plan?
- Why has made it easy/ difficult to incorporate this wellbeing plan into the School Improvement Plan?
- How did the project fit with the School Improvement Planning process?
- How did the project not fit with the School Improvement Planning process?
- How does the project fit with the LA's/Estyn's or the WG's processes?
- How does the project fit with the LA's/Estyn's or the WG's processes?

11.14   Appendix N: Participant Information Sheet

5. WHAT WILL HAPPEN TO MY DATA?

I will not repeat what you say in individual interviews with me to people outside the research (such as your parents or teachers), unless you report an incident where someone's wellbeing is at risk or where harm is being caused to someone. In this case, I will need to follow the safeguarding procedures of your school. If this happens, I will first discuss it with you and tell you I need to report it.

I will audio record all of our individual interviews and the group meetings using a digital recorder. This data will then be written up into a transcript for me to use as research data. I will remove from the transcript any data that can identify either you or your school.

The data and consent forms will be kept securely at Cardiff University and only I will have access to them. Reports and articles written about the study will not publish anything that could be used to identify you or your school. I do need to keep the audio-recordings and written records for at least five years. This is all in line with rules researchers need to follow.

6. CONTACT DETAILS
Hayley Reed
reedhm@cardiff.ac.uk 02920879053
1-3 Museum Place, Cardiff, CF10 3BD.

This research is part of a studentship funded by the Economic and Social Research Council, and supported by DECIPHer at Cardiff University.

CHANGING WELLBEING IN YOUR SCHOOL

PARTICIPANT INFORMATION SHEET

1. INTRODUCTION

Hi, my name is Hayley and I am a research student from Cardiff University. I am conducting research on involving students in decision-making about wellbeing in school. In this research I want students and teachers to find out about wellbeing, and then decide on ways we can change this for the better.

2. RESEARCH STAGES

There will be different stages to the research:

Data Collection about Wellbeing

Photography - The students recruited will be asked to take photographs of their school or life linked to wellbeing. Then I will meet with students individually to talk about their photographs. These interviews will be informal and more like a conversation, but they will be recorded so I can type them up and write an overall summary of the wellbeing areas that were raised by all students. No individual students will be identifiable in the summary.

School Report – Some of the students in your school filled out a survey last year which asked about their health and wellbeing. From this a school report is available which can tell us what students said about wellbeing and other health issues which affect wellbeing.

Action Group Meetings

The students involved in stage 1 and a few teachers will meet several times over the school year to:

1. Discuss what has been found out about wellbeing in the photography project and surveys.
2. Decide what they think are the most important wellbeing areas to change.
3. Think of ways these wellbeing areas can be changed.
4. Develop an action plan of changes they want to make.

I will be attending meetings to record them via Dictaphone and make notes.

Understanding Changing School Wellbeing

In the last stage, I will hold interviews and focus groups with the students and teachers involved to ask them what they thought about being part of the project.

4. WHO CAN TAKE PART?

I am asking all students to consider taking part, but you don't have to be involved. If you would like to take part, please put your name into the nomination box in school.

Once enough students are interested we will randomly pick students from each year group to take part. I will give you a consent form for you and a parent/guardian to sign and this information sheet to take home. You and your parent/guardian can have two weeks to decide if you consent to taking part.

Once consent is received, I will contact you to organise giving you the camera, so you can start taking photographs.

11.15 Appendix O: Participant Consent Forms

Changing Wellbeing in School: Senior Management Consent Form

Your school has taken part in a Wellbeing project over the 2018/19 academic year with a researcher from Cardiff University, Hayley Reed. I have worked with students from Year 7-13 and staff members to understand wellbeing in the school and write an action plan of the changes they perceive are needed to support the wellbeing of students. There are more details of the project in your school's action plan which you should be provided along with this consent form.

The next phase of the research is to evaluation the project to understand whether this is a feasible and acceptable way to consider wellbeing, and if the process can produce relevant wellbeing plans for schools. I am hoping members of the school's Senior Management Team will be happy to take part in a recorded discussion (about 45 minutes to an hour) about these factors.

Cardiff University has an obligation to ensure all research undertaken by their students and staff is conducted in accordance with appropriate ethical, legal and professional standards. Therefore ethical approval was sought and obtained in July 2018 for the current study through the School of Social Sciences Ethics Committee at the university. Any participant can withdraw from the project at any time without giving an explanation. The data collected and consent forms will be kept securely at Cardiff University and only I will have access to them. Reports and articles written about the study will not publish anything that could be used to identify you or your school. I do need to keep the audio-recordings and written records for at least five years.

If you have any further questions please feel free to contact me via the details below.
Hayley Reed reedhm@cardiff.ac.uk 02920879053

If you are happy to take part in the research please fill in the following consent form.

	Please Initial
I have read the consent form and action plan.	
I understand what the study is about.	
I have asked the questions that I want to ask.	
I understand that I can choose to take part or not, and I can stop taking part at any time and have my data collected up to that point erased.	
I agree to take part in the research.	

Full name:……….……………………………………………………………………….

Signature: …………………………………………. Date: ….…………………………

Changing Wellbeing in School Teacher Consent

You have advised that you would like to take part in a research study about Changing Wellbeing in School. You will have been given a Participant Information Sheet for you to read to understand the research project. If you have any further questions please feel free to ask in the information session or via the contact details below.

Hayley Reed reedhm@cardiff.ac.uk 02920879053
1-3 Museum Place, Cardiff, CF10 3BD.

If after reading the information sheet and asking any questions you had, you still want to take part in the research then please fill in the following consent form.

	Please Initial as appropriate
I have read the participant information sheet.	
Hayley the researcher has explained the study to me.	
I understand what the study is about.	
I have asked the questions that I want to ask.	
I understand that I can choose to take part or not.	
I understand that I can stop taking part at any time and have my data collected up to that point erased.	
I agree to take part in the research.	

Teacher's full name:………………………………………………………………

Signature: ………………………………………… Date: …..……………………

Changing Wellbeing in Your School - Student Consent

You have advised that you would like to take part in a research study about Changing Wellbeing in Your School. You will have been given a Participant Information Sheet to read to understand the research project. If you have any further questions please feel free to ask in the information session or via the contact details below.

Hayley Reed reedhm@cardiff.ac.uk 02920879053
1-3 Museum Place, Cardiff, CF10 3BD.

If after reading the information sheet and asking any questions you had, you still want to take part in the research then please fill in the following consent form.

	Please Initial as appropriate
I have read the participant information sheet.	
Hayley the researcher has explained the study to me.	
I understand what the study is about.	
I have asked the questions that I want to ask.	
I understand that I can choose to take part or not.	
I understand that I can stop taking part at any time and have my data collected up to that point erased.	
I agree to take part in the research.	

Student's full name:………………………………………………………………………

Signature: ……………………………………… Date: ….……………………………

Changing Wellbeing in Your School - Parent/Guardian Consent

Your child would like to take part in a research study about Changing Wellbeing in Their School. Included in this pack is a Participant Information Sheet for you to read to understand the research project. If after reading the participant information sheet you have questions please feel free to contact me on the details below. I would be more than happy to speak to parents.

Hayley Reed reedhm@cardiff.ac.uk 02920879053

1-3 Museum Place, Cardiff, CF10 3BD.

If after reading the information sheet and asking any questions you had, you are happy for your child to take part in the research then please fill in the following consent form.

	Please Initial as appropriate
I have read the participant information sheet.	
I understand what the study is about.	
I have been given the researcher's details to contact them if I have any questions.	
I am the parent/guardian of the student named above and I agree to them taking part in the research.	

Parent/Guardian Full Name: ……………………………………………………………….

Signature: ……………………………………………… Date: ….…………………………

11.16   Appendix P: Student Support Sheet

CHANGING WELLBEING IN YOUR SCHOOL

STUDENT SUPPORT SHEET

CARDIFF UNIVERSITY PRIFYSGOL CAERDYD

E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL

DECIPHer
Development and Evaluation of Complex
Interventions for Public Health Improvement
A UKCRC Public Health Research Centre of Excellence

Thank you for taking part in my research. I hope you enjoyed the experience. If you want to contact me about the research my details are:

Hayley Reed reedhm@cardiff.ac.uk 02920879053
1-3 Museum Place, Cardiff, CF10 3BD.

As we have talked about wellbeing which can be an upsetting issue for some students I have produced this support sheet. It gives details of support you can access in your school, and for organisations outside of school if you would prefer that.

School Support

If you would like to talk to a person within the school, then (NEED TO ADD EACH SCHOOLS DETIALS HERE).

Other Support

Childline is a free, confidential service for young people up to the age of 19, to talk about anything.
Call for free: 0800 1111
Have an on-line chat with a counsellor:
http://www.childline.org.uk/Talk/Chat/Pages/OnlineChat.aspx

Meic is the helpline service for children and young people up to the age of 25 in Wales. Meic will listen and will help by giving you information, useful advice and the support you need.
Call for free: 080880 23456
Text for free: 84001

11.17 Appendix Q: School Wellbeing Plans

Rowland High Plan

1.b To limit the access of sugary carbonated drinks in school.				
What do we already know?	**How will we make change?**	**Who will do it?**	**When can it be achieved by?**	**How will we know it has been achieved?**
Sugary Drinks 12% of students usually drink one or more sugary soft drinks a day, including 17% of males and 7% of females in the school. Year 7 and 8 account for only 5% of students that drink one or more sugary drinks, but this rises to 18% in Year 10. Students believe most fizzy drinks are bought at local shops on the journey to school.	**Demonstrations** - Deliver demonstrations at during PSHE lessons showing the amount of sugar students should consume a day compared to the sugar content of different fizzy drinks. The forms can then discuss this after the demonstrations.	(LT) to talk to (REDACTED) about bringing in Healthy Schools worker or school nurse to work with Sixth Form Welsh Baccalaureate students to deliver demonstrations.	Contact Public Health Wales Summer 2019 to deliver demonstrations in Autumn 2019	Number of forms classless who received the demonstrations, and feedback from students.
	Fruity Friday a year with lessons suspended for the day to promote healthy living. Days could include encouraging fruit intake through fruit smoothies.	First one done as part of sports day 2020 i.e. have sports day two days with the first about eating the right foods. Work with the P.E. department, Heads of Years and LT to organise.	June 2020	Check that sport day is widen in 2020 to have a promotional day for health lifestyles.
	Canteen Audit - Students have raised that Radnor Fizz is offered in school but is high in sugar, and students bring in fizzy drinks too, which should be restricted.	(LT) to contact (REDACTED) who works with Healthy Schools to request they do a drinks audit of the school canteen and what students bring in with them. This audit will inform what the school ban (next action).	June 2019	Audit completed by Healthy Schools.
	Ban on high sugar drinks - School wide ban on bringing energy and fizzy drinks, juices, and milkshakes into school. Policing this will be difficult, but a ban may discourage some students from bringing these drinks in.	Ban communicated to students and parents via HeadsUp and e-mail at the end of this school year. A probationary period of the Autumn term 2019 will be set with LT monitoring feedback about it from staff and students through the school council.	July 2019	Check through the SHRN survey results in 2019/2020 if the amount of sugary drinks consumed has decreased and water intake risen.

1.b. To promote water consumption in school.				
What do we already know?	**How will we make change?**	**Who will do it?**	**When can it be achieved by?**	**How will we know it has been achieved?**
Water 79% of students usually drink tap or bottled water once a day or more which includes 76% males and 82% females. The levels of drinking water once a day or more is relatively consistent with a range of 71% to 86% between year groups. Students think the school water fountains often don't work or are turned off to prevent students spraying water on each other.	**Rowland Water Bottle** - Introduce a Rowland water bottle which has space for student names printed on them. This will decrease plastic waste and encourage water intake. The money raised from the water bottles could support other activities. Start in Year 7 as it is important to make sure students start drinking water early on to make it a habit. Need to think about the cost as if they are too expensive no one will buy them.	Students - this research action group should continue with LT (REDACTED) to set up a competition for designing the new Rowland school water bottle and check costs of water bottles. LT to speak to staff at (REDACTED) School who currently allow students to buy recyclable water bottles for school that can be recycled if damaged.	Competition Jun- Oct 19. Winner picked in Nov 19. Parents asked to order bottles in December 2019.	The bottles will be designed and purchased.
	Audit Water Fountains - There are enough water fountains, but someone needs to be in charge of checking they are working on a regular basis and/or fixing them. Need to audit water fountains in school.	(REDACTED) (Caretaker), other staff and students to do an audit of water fountains in July 2019 collecting information on where the water fountains are, if they work or not, are they in the right places (i.e. not in the toilets), how can we make these better. If more water fountains are needed, there is a need to find money to do this.	July 2019 students and staff do an audit.	Audit completed and results discussed by LT.
	Toilets - Increase water drinking means increase toilet use. Problem is that they are locked, and the toilets are not very nice. LT already looking into having open plan toilets in Science block over The Summer.	LT to report back to research action group about LT decision about Science Block Toilets.	July 2019	Research action group have been informed about toilet changes.

2. To improve and support student-student relationships focusing on decreasing bullying in the school.				
What do we already know?	**How will we make change?**	**Who will do it?**	**When can it be achieved by?**	**How will we know it has been achieved?**
Bullying 35% of students report being bullied at school in the last couple of months, with very little difference by gender. The no. reporting being bullied is highest in Year 9 (48%) and lowest in Year 12 (9%). 16% of students report taking part in bullying another student(s) at school in the last couple of months. This is higher in males (23%) than females (10%). Students, especially younger students, don't want to report bullying to teachers as	**Information -** Put signs and poster up to define bullying and reporting processes. Students to run a competition to make a poster about bullying to raise awareness.	Students to run a competition.	July – September 2019	There should be a prize for the winner/s and we will have posters developed and put up around the school.
	Implement a '**Talkabout Tuesdays'** where an anonymous box is put into classrooms for students to raise issues. They can write their ideas during the week and once a week they can pull out things the class can discuss.	Pastoral leaders need to put on agenda for form tutors ready for the next academic year. Form tutors to put message out about the scheme to students and have an assembly on it.	September 2019	LT to do a formal review/ observation of the tutor class during the Autumn term to verify taking place and how it is working.
	Student ambassadors available to talk to students (victims of bullying) on **'Talkabout Tuesdays'**. Can link to an already accredited Peer Mentor Scheme so students get a qualification and/or time credits they can spend.	Link to Talkabout Tuesdays so the same people can help to get implemented. (REDACTED) to look at peer mentor schemes and time credit schemes that could be used.	September 2019	Run a peer mentor course with one student from each form. No. of students trained. No. of students who visit peer mentors.
	Establish **'Friendship Friday Groups'** for students who struggle to make friends, where those who feel left out can come together. Every Friday lunchtime in the meeting room opposite Revolve. Later can run an event with students who have come to the group.	LT in charge and will run the group. Promote through: Heads Up Lunchtime activities calendar	September 2019	Group formed and collect student feedback.
	Advert lunchtime clubs – Get KS 3 and 4 boards to advertise clubs to	LT to organise with Caretakers.	Over the Summer	Two boards are put up and students notified where they

they don't want to be a problem. Banning phones has helped but students break the rules and bring their phones in.	students as this will decrease bullying.			are.
	Teacher Duty – Increase teacher monitoring in some areas, for example, the tennis courts. They can also monitor litter dropping (see section 4).	LT (REDACTED) who oversees duty rota.	September 2019	Duty Rota set up and checked to see staff are doing it.
	Safe spaces – Year 7 and 8 to use the Year 11 common room (Tech Block) when they leave after exams.	(REDACTED) to organise.	May 2019	Research action groups students to feedback on if this has happened by Jul 19.
	Peace Day – Develop a day where people get along and you ask people from the community to come in to talk about wellbeing and mindfulness. As classes are ending they can focus on mindfulness in lessons.	LT to organise a collapsed Peace Day at the end of the school year.	July 2020	A Peace Day is organised and put onto the School Calendar.
	Bullying Policy - Review bullying policy with students as they don't know what is in it, or how bullying is logged by staff.	LT to take the current policy to Student Voice group and the Research Action Group to amend. Assemblies delivered to inform students of new policy.	September 2019 January 2019	Policy amendments made and

3a. To improve teacher relationships with parents.				
What do we already know?	**How will we make change?**	**Who will do it?**	**When can it be achieved by?**	**How will we know it has been achieved?**
Teacher-Parent Relationships Teacher-parent links need to be better. Parents don't always get	**Parent Communication** - More time for teachers-parent communication outside parents evening. Develop a system where parents can e-mail teachers to ask if they could have time outside of parents evening	(REDACTED) to develop up a way for information to be given to parents faster and for them to reply using the SIMS parent app/student app.	Summer Term 2019	Ask parents if they feel they have more information.

a response from teachers. The teachers are so busy though and they don't have chance to reply to them, so this is a difficult thing to change.	to speak to them.			
	Inform Parents of Student Achievements - More recognition with parents of their children's achievements will further strengthen home-school links. Each member of staff making at least one positive phone call home/sending one praise email per week.	SIMS Parent app (as above). This idea can be linked in with Friendship Fridays, so that staff make sure they say one friendly thing (praise) on a Friday.	September 2019	Parents feel supported.

3b. To improve teacher relationships with students.				
What do we already know?	**How will we make change?**	**Who will do it?**	**When can it be achieved by?**	**How will we know it has been achieved?**
Teacher-Student Relationships 55% of students 'strongly agreed' or 'agreed' that teachers care about them. This was highest in Year 7 (73%) dips to the lowest level in Year 10 (45%) before gradually increasing in the older years (68%). The school are very good at supporting younger students transition from primary.	Run **'fun days'** once a term so teachers can relax and show students their fun side.	LT and (REDACTED) to put into calendar. Staff and student group developed to run these.	September 2019	Students will feel more positive and that teachers care about them.
	Student –staff time – Have student-staff lunches.	Students to arrange a lunch per week for staff and students to get together.	January 2020	Improved relationships
	Music in Lessons – Some lessons use music to relax students when working individually. Extend this to registration and conduct a student poll to vote on the radio station used to stop arguments about playlists. The student would like to develop Rowland Radio. The first step is for a group of students to visit another school (REDACTED) to see investigate.	LT to authorise. Pastoral leaders need to put on agenda for form tutors ready for the next academic year. Form Tutors to put music on in form time so students start the day off well. As above.	September 2019 January 2020 to start looking into.	Student's feedback that music will be on in registration. Students feedback to LT about what is needed to start a Rowland Radio.
	Teacher Feedback - Students to observe lessons or using an anonymous compliments and	LT to authorise and develop a Survey Monkey to find out students likes/dislikes.	September 2020	Students will have a more positive view of staff. If they do not this will be

Some older students have had bad experiences with staff which affects their subject choices.	complaints reporting system.	Students to decide measures (i.e. fun factor or how interactive it is) and can help staff to monitor.		feedback to staff members anonymously.
	Staff Relaxation Room – Develop a staff relaxation room that is timetabled so they can chill out during the day. To include relaxing music and be nicely decorated.	LT to decide which room to be allocated. Staff can bring in what they want in there.	January 2020	Staff will report if they use the room and if it has helped with relaxation.
	Praise - Give more praise to students and tell students when achievement points are given.	All staff	September 2019	All students feel more encouraged and well-behaved students are inspired.

4. To improve the school's ethos with a focus on tackling litter, graffiti and improving the feel of the school environment.				
What do we already know?	**How will we make change?**	**Who will do it?**	**When can it be achieved by?**	**How will we know it has been achieved?**
School Ethos There is litter on the floor sometimes right next to a bin, this looks bad and is upsetting to see because it is nice to have a clean looking school. There are enough bins, but people don't put their litter in them.	**Litter – Year 7 to do** Big Spring Clean on last day of term. Put signs up advising student fines for dropping litter. Those that drop litter already 'pay back' through litter picking with estates team but having more teachers on duty (see above) will help catch persistent offenders.	LT is organising the 'Big Spring Clean'. Parents notified about the litter fines starting through e-mail, letter home, Heads Up and Twitter.	July 2019	Number of students that are involved in the big spring Clean. Signs will be put up around the school. Monitor numbers of students involved in litter picking for punishment.
Picking up litter takes up a lot of staff time especially during/after lunch. There is some nice student art in the	**Student Attitudes** – Need to change student views on littering being 'cool'. Do not pick up litter for one day and take photos to share with the students. Cannot do longer due to foxes etc. become attracted.	LT to make sure no staff pick up litter before the Big Spring Clean Up to take photos.	July 2019	Photos of litter after one day sent home.
	More bins in busy areas - There are enough bins, but they need to be in the right places. Map out litter	Waste department in (REDACTED) Council to come in and support this. Ask caretakers/staff on duty where do	September 2019	More bins are present in the school.

English department which brightens up the area and demonstrates what the school is about. Having a nice environment with no litter and graffiti makes it look tidy and makes students feel safer and happier in school.	hotspots with the caretaker and duty staff. **Encourage recycling -** Have two separate bins to encourage recycling.	they find the litter most. Is it the field or the quad/ common rooms?		Litter has decreased.
	School Repairs – if something is broken or vandalised students think it is ok to do this, but teacher do not always know things area vandalised so there needs to an anonymous reporting system developed for students to notify staff what needs repairing.	Caretaker	January 2020	New reporting system exists and students are aware of it.
	Welsh Baccalaureate projects – Focus on creating school art which can displayed in school. For their community project, older students could volunteer to help younger students to create art about the school and its identity.	(REDACTED) (WB teacher - Community Challenge). LT, P.T.A. and Governors. School Council Ask residents to come and help too.	Autumn 2019 when Welsh Baccalaureate starts.	Need art will be seen throughout the school.

5. To raise awareness and support equality, diversity, and children's rights within the school.				
Awareness Raising Students reported that the second most common reason for being bullied was because they are gay, lesbian, or bisexual. Year 8 reported this at the highest levels (58%) and Year 13 at the lowest levels (29%).	**How will we make change?**	**Who will do it?**	**When can it be achieved by?**	**How will we know it has been achieved?**
	Rights Respecting Schools – Work with (REDACTED) Youth Council to become a Rights Respecting School which is a UNICEF project. This should include training staff on Rights.	LT to contact (REDACTED) Youth Council UNICEF & (REDACTED) Youth Council - (REDACTED) WG	Contact in June 2019 to start in September 2019	Bronze Award Received from UNICEF scheme.
	Assemblies - Most students don't understand their rights so Sixth Formers could give assemblies to make students aware of their rights.	As part of Rights Respecting Schools. Sixth Form and School Council		Bronze Award Received from UNICEF scheme.

	Your Rights Signs - This group of students and staff to think about each of the individual children's rights and put them around the school on signs. For example, you have the right to privacy in the toilets.	As part of Rights Respecting Schools.		Bronze Award Received from UNICEF scheme.
The school already has a well-established HERO group which supports the rights of those that are LGBTQ. Some students still use language about LGBTQ students in a negative way. Students feel that they are not aware of or understand their rights	**Maintaining teacher/student groups** – Key member of staff who supports HERO group is leaving, so students would like to have an input into how this group is continued.	(REDACTED) to meet with this group and the HERO group to chat how the group can be taken forward.	July 2019	(REDACTED) takes into considerations student's views on progressing the HERO group.
	Cultural Celebrations - Have days throughout the school year to celebrate different cultures. For example, if we have some students/teachers who are from Ireland we could do a day about Ireland and invite people from the community to come in and celebrate with the students.	Unsure ask LT to nominate.	July 2020	Cultural celebrations take place from September 2020.

Partridge Comprehensive Plan

1. To promote sleep within the school population.

What do we already know?	How will we make change?	Who will do it?	When can it be achieved by?	How will we know it has been achieved?
Sleep 30% of Partridge students go to bed at 11.30pm or later when they have school the next day.	**Time Management Education -** Teach students how to use their time more effectively so work is completed quicker and then the can rest. Staff or a sixth former to hold assemblies. Sixth Formers to give examples of how they managed their time well. Wellbeing staff to investigate time management programmes for PSHE – existence and whether they are good.	Staff with Sixth Formers to plan and deliver. (REDACTED)	End of September 2019 Start investigating programmes over the Summer 2019.	Changed behaviour Survey the students Students to evaluate time management session in PSHE.
In Year 7, 13% of student's go to bed at 11.30pm or later but this increases every year until Year 12 when the average reaches 51%.	**Screen Time Education** Ask Healthy Schools to run an interactive workshop with students and staff about effects of screen time.	(REDACTED) to contact Healthy Schools.	Run July 2019 during sports week.	Students less tired (SHRN survey) See less people on phones.
Students do not get enough sleep because they stay up on their phones, games consoles or to see/interact on social media with friends.	**Monitoring Screen Time** Explore how school fitness reports can be reinstated. Previously, the school sent home fitness reports which had a measure of screen time, but this was stopped as it was time consuming. Also, feedback to each registration class the average time that students use screens in the interactive workshop with Healthy Schools.	(REDACTED)	June 2019 so done for next reports.	Included in end of year reports.
Students believe that sleep worsens as you get older due to the pressure from	**Supporting Sleep in School** Liaise with another school in the borough (REDACTED) that has targeted students known to be tired. They have allowed	(REDACTED) to speak with (REDACTED) contact to find out how this is implemented and	October 2019	Data in fitness report survey. Number of students accessing sleep provision.

teachers, and increased workloads and exams.	time to relax and have a nap in the morning.	bring back to the group.		
Lack of sleep results in students not being able to or wanting to focus on learning and affects mood negatively which results in disruptive behaviour.	**School Timing** Change registration to allow activities wake up students. For example, restart the Daily Mile walk in registration, or as it has been restarted recently, conduct a poll on what students and staff think of the Daily Mile (how liked is it and does it change behaviour etc.)	(REDACTED) – need to fill out proforma for a change in registration.	Summer Term 2019	Registration Time change.
	Gaming Companies Campaign to gaming companies to make them take more responsibility for screen time. Ask them to put warning labels on their games like 'play moderately' (like gambling) or have a warning when playing for too long.	School council to write to gaming companies.	Autumn term 2019	Response from companies or see warnings on game consoles.

2. To improve and support student-student relationships focusing on decreasing bullying in the school.

What do we already know?	How will we make change?	Who will do it?	When can it be achieved by?	How will we know it has been achieved?
Bullying 30% of students report being bullied at school in the last couple of months, this is higher for girls (43%) than boys (34%).	**Definition Development** Develop a definition of bullying (what is the difference between an argument and bullying) by asking everyone what they think should be/should not be classed as bullying. Promotion of bullying on school TV screens with sound played during breaktimes and lunchtimes.	Staff to give a clear message about bullying. (REDACTED) (drama and music teachers) with GCSE drama group	July 2019 September 2019 September 2019	Less recorded incidents of bullying.

The no. of students reporting being bullied is highest in the lower school from Year 7-9 (between 42-46%).	Develop a pupil lead interactive drama about bullying. Where they can stop at certain points and ask for audience participation – what would you do? Anti-Bullying Awareness Week	Organised again by (REDACTED) and sixth form but everyone involved in supporting.	October 2019	
20% of students report taking part in bullying another student(s) at school in the last couple of months. This is higher in males (24%) than females (15%) but is no different dependant on age.	**Families** Once the definition is put together this needs to be shared with parents: School Website Parent mail Parents Evening Videos of bullying on impact. True Stories from newspapers.	School administrators to send out.	September 2019	Less cases of bullying reported. Stricter punishment will impact on positive behaviour.
The students understand that the school has tried to put a bullying policy in place, and to tell them about it in assemblies. They feel that the bullying policy needs to change, as students don't take it seriously.	**Counselling** The school need to communicate more with students that are being bullied and follow them up. For people being bullied it can be depressing so 1 to 1 counselling offered to those that have been bullied. The counselling on offer needs to be promoted better.	Wellbeing Team, (REDACTED) Take the lead on this. Need to promote through: Parent Mail and Website for parents Assemblies and posters for students.	July 2019.	Ask students if they know about it.
Students feel there is not enough support for victims of bullying, or the school does not make them aware of the support they offer. Staff and students are	**School Bullying Policy** The School Bullying Policy needs amending and students need to be part of that process as punishment for those that bully should include detention and	School Governors, SLT and wellbeing team in charge of re-writing with students who have been	SLT to write into School Development Plan in Summer 2019 and allocate staff	Policy is re-written.

| concerned that families don't support the school on the issue of bullying.

First, as parents/students refer to minor arguments as bullying.

In addition, parents refuse to believe their children bully others. | suspension or bringing in police to talk to offenders.
This needs to be done after the definition is detailed. | perpetrators and victims.. | member to take charge of this. | |

3. To improve and support student-teacher relationships.				
What do we already know?	**How will we make change?**	**Who will do it?**	**When can it be achieved by?**	**How will we know it has been achieved?**
Teacher-Student Relationships 58% of students 'strongly agreed' or 'agreed' that teachers care about them. This was highest in Year 7 (84%), dips to the lowest level in Year 10 (40%), before gradually increasing in the older years (68%). The school are very good at	**School Trips** Teachers to run and go on more 'leisure' trips with students and then they get to build relationships. The starting point for this action is to look at the data already held on the number of trips and staff members who have been part of these.	Staff attend more activity trips.	2019-2020	Number of trips organised. Relationships have improved.
	School Survey Understand why student-teacher relationships are worse in Year 9-11 through conducting a school survey with these year groups.	(REDACTED) to work with the students to put together a survey to ask students why they think relationships change and what we can do to improve	July 2019	Results of survey.

supporting students they know who are going through tough situations, but not all struggling students are known. Some teachers make time to support students, even though they have high workloads and a lot of stress themselves; others struggle to do this.	**Team Building Exercises** Establish teambuilding exercises between students and teachers to allows teachers to get to know students outside of the classroom. Run charity work events, student-staff netball or a labyrinth/treasure hunt with teachers.	School Council to organise. (REDACTED).	2019 Health and Wellbeing Week	Number of activities taken place.

4. To raise awareness and support equality, diversity within the school.				
What do we already know?	**How will we make change?**	**Who will do it?**	**When can it be achieved by?**	**How will we know it has been achieved?**
Equality and Diversity 40% of students think that young people are bullied in the school because they are gay, lesbian, or bisexual. 25% of students think that young people are bullied in the school because are they disabled. Students think some of	**Changing Attitudes** Stonewall Secondary School Champions Scheme to run in the school next academic year https://www.stonewallcymru.org.uk/get-involved/get-involved-education/secondary-schools	Wellbeing Team to contact Stonewall and enquire about how the school can be part of the Stonewall Secondary School Scheme and how they can achieve a Bronze level award.	Autumn Term 2019 to start.	Increase in students reporting issues as currently students don't feel they want to. Need anonymous reporting through e-mail or a box in school. Reduction in incidents in the school.
	Promoting Role Models School to promote LBGTQ role models. There are many role models on social media who positively influence people's ideas so can we use some of these.	LGBTQ+ students and staff Wellbeing Team and YEPS Police Officer Stonewall and Umbrella Cymru	PSHE days School Pride Day Promote through the school	Increased awareness.

their school peers are not accepting of students that are gay or lesbian due to: Parental influences Religious influences The school not addressing issues to help students accept others for who they are. The curriculum is going to change in Wales to a more wellbeing-focused curriculum with an emphasis on equality and diversity. Hopefully this should cover equality and diversity issues.	**Staff and Parental Education** Staff to be given equality training by Stonewall. Stonewall will be asked to support this and as difficult to change parent views.	Wellbeing Team/ Stonewall.	2019/2020 school year.	Feedback from parents.
	School Equality Policy Equality Policy is a requirement for (REDACTED) schools and headteacher is responsible.	Development of policy can be done by students, staff parents/guardians, Governors, and school council together.	Not timely.	More awareness of the policy. User friendly so easy to read.
	Welsh Curriculum Change Students and staff to give feedback on the Welsh Curriculum to highlight that LGBTQ education should be a part of it. The next consultation phase is in July 2019.	YEPS, LGBTQ+ groups. School Website PSHE days	The whole attitude change needs to happen but will take a long time.	More awareness.

5. To improve the school's ethos with a focus on improving the look and feel of the school environment and use space better.				
What do we already know?	**How will we make change?**	**Who will do it?**	**When can it be achieved by?**	**How will we know it has been achieved?**
School Ethos	**Outdoor Classrooms** Teachers and students to decide the areas that can be	Teaching and Learning Staff and leaders of learning (REDACTED)	June 2019	Variety of learning opportunities. Register of the use of

	used as outdoor classrooms and put together a timetable of when they can be used. Teachers to sign classes up to use the outdoor classrooms.	If it is online then (REDACTED) to set up. Students Need to add to planning whether staff can use the outdoors more.		outdoor classrooms.
There are so many issues with the toilets, including no doors or soap, people throwing wet tissue around and urine on the floor. Some nice areas in the school do not get used such as court by the art block. Also, student appreciate that they live in a beautiful, green area but they do not get to spend time outside.	**Quiet areas** Students and staff to decide on space in the school that can be used better, for example, court by art which has the statues and giant chess area is not used at all. Decorate the outside space with student photography or work. Write to parents and ask them how they can help/volunteer time to help decorate areas.	(REDACTED) Welsh Baccalaureate project on local community or photography competition to be run about Health and Wellbeing Week (Staff but supported by the students. The school to write to parents and asked for their help.	September 2019.	Number of areas that have been developed. Register of the use of the area – sign in sheet. Students positive about the area.
There is already an option in Year 9 to take a horticulture class and (REDACTED) already does so much to try to make the school look and feel better in these classes. However, some students walk all over the plants and trash areas.	Develop a timetable for different year groups to access these quieter areas which is based on student behaviour points.	The school to contact 'Art is Community' to see if they can help.		
Gates have been put up	**Dance Space** There is a need for a dance space in the school with music and mirrors on the wall. This will help students exercise and relax.	Music department as part of the creative arts. Used by performing arts and YEPS too.	Long Term Goal – July 2020 Lessons and afterschool. It will be expensive to fund so a timely activity.	Students have access and being engaged.

recently to stop dog walkers coming onto the fields and leaving their dog mess behind.				
	Student Toilet Project Set up a student toilet environment project to involve them in the design/decorating of toilets so they have more ownership over them.	Caretaker Construction students involved. Staff and students. Art Students.	Long Term Goal – Jan 2020	Positive Opinions by students. Less reports of incidents. Les reports of damage.
	Community Project Contact parents and community members to come in and assess the areas that need change and what they can do/offer to help.	Encouragement from students towards parents/guardians. Afterschool/YEPS. Promote via Social Media & Parent Mail	September 2019	Results identified as an area of concern.

11.18 Appendix R: Research Agreement

RESEARCH AGREEMENT

For the purposes of the study entitled **"Changing Wellbeing in Your School"** funded through a studentship provided by the Economic and Social Research Council and based at DECIPHer in Cardiff University.

This agreement dated _____ is made between:

Hayley Reed, the student researcher undertaking the research and (School Name).

IT IS AGREED AS FOLLOWS,

1   Commitment from the student researcher:

The student researcher will:

- Complete a Cardiff University DBS check.
- Work with the school and students to identify the most convenient times to run the research at different stages of the process.
- Ensure that the research does not interrupt the studies of students.
- Ensure all involved students have given consent and that parental/guardian consent is also received.
- Ensure all staff that are involved have given consent to be part of the research.
- Provide information sheets to students and school staff about how they access help within the school and externally, if they would like to discuss their wellbeing further.
- Pass information to school in the event that a student or school staff member discloses/indicates risk of harm to any individual.
- Report back anonymised school-specific data about how wellbeing can be changed in the schools after May 2019.
- Be available to present oral feedback about the findings if the school wishes.
- Anonymise all published data from the study, so no school or individual can be identified from any reports.

2   Commitment from the school

There are several stages to the research that the school will need to commit. The research will take place from the 2nd half of the Autumn Term until the beginning of the Summer Term in the academic year 2018-19. Therefore, the participating school will need to:

- Assign at least three members of school staff, known herein as support staff, as a point of contact for the student researcher while they are in the school. It is imperative that at least one of these staff is a member of the Senior Management Team to allow the development of wellbeing change ideas that are feasible and acceptable to school decision-makers.

- Allow the support staff and student researcher to meet a few weeks before the research starts to decide how to recruit the students and discuss the school safeguarding procedures. The student researcher will need to be informed of the child protection lead who will be the first point of contact if a disclosure is made or where the researcher is concerned about the welfare of a student/staff member. If the child protection contact is not available, the student researcher will contact one of the assigned support staff.

- Allow the support staff to help with recruitment of up to 10-14 students from a range of Year Groups and with a range of abilities. These students, along with the student researcher and the school support staff, will form a Research Action Group which will develop an action plan about how changes can be made to affect wellbeing in school and, potentially, beyond with the help of community members such as parents. It is envisioned that this group will meet up to 6 times during the study period to devise the action plan.

- Assign an area within the school that the student researcher can confidentially host all of the research encounters with participants.

- Initially, host the student researcher within the school for up to three weeks to conduct data collection through photography with recruited students to understand their ideas about wellbeing.

- Permit the Research Action Group access to the school's Student Health and Wellbeing Report from the 2017-18 SHRN (School Health Research Network) survey. This will provide a secondary data source for the Research Action Group to consider when deciding on wellbeing change ideas. These reports are the property of the school Head Teacher so their agreement to use these reports will be required.

- Once the action plan is developed, allow the student researcher to conduct a focus group and/or interviews with Action Group members to understand how they experienced the process.

AS AGREED BY:

For and on behalf of:
Name: Hayley Reed

Position: Student Researcher

Signature:

Date:

For and on behalf of:
Name:

Position:

Signature:
Date:

11.19   Appendix S: School Co-production Timelines

Rowland High		Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Recruit School	Send initial information to schools		1st									
	Initial interest in project		2nd									
	Initial Meeting between researcher and SLT		9th									
	Sign Research Agreement		9th									
Recruit RAG members	Assemblies delivered/information given in registration		16th-24th									
	Students recruited			1st	19th							
	Staff recruited			8th				7th				
Problem Setting	Accessed SHRN reports		22nd									
	All student's complete photography project			12th		18th						
	Meeting 1							7th				
Problem Solving	Meeting 2							14th				
	Meeting 3							28th				
	Meeting 4									2nd		
Adoption	SMT meeting										19th	
	Commitment to plan actions										19th	

Partridge		Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Recruit School	Send initial information to schools		1st									
	Resend information as non-response		8th									
	Initial interest in project		9th									
	Initial Meeting between researcher and SLT		10th									
	Sign Research Agreement		18th									
Recruit RAG members	Assemblies delivered/information given in registration		22nd	30th								
	Students recruited			8th		16th						
	Staff recruited		18th			16th						
Problem Setting	Accessed SHRN reports		22nd									
	All students complete photography project				17th			1st				
	Meeting 1							18th				
Problem Solving	Meeting 2							25th				
	Meeting 3								29th			
	Meeting 4									13th		
Adoption	SMT meeting										17th	
	Commitment to plan actions											24th

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