Research Article

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Chronotope, technology affordances, and task design: using WeChat to facilitate Chinese learning in the classroom

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Abstract: This paper makes a case for the Bakhtinian concept of "chronotope" in explaining the space–time affordances of technology in second language pedagogy. It examines the production of space–time that intersects online/offline, formal/informal and local/translocal activities in task-based language teaching. Drawing on an example of instructional design using WeChat to facilitate the learning of business Chinese, this paper illustrates that the chronotopic affordances of mobile apps such as WeChat, when creatively integrated with task-based language pedagogy, can significantly expand the learning mobility and opportunities defined by the classroom in its traditional sense. This chronotopic expansion enables learners to be positioned in digitally mediated and simulated scenarios and roles that transcend the space–time of the classroom, closely resembling real-world communication in the globalising world. It is suggested that language task design, taking into account the chronotopic affordances of technology, can facilitate authentic and networked space–time of learning by embedding it in mobile, hybrid, individualised and collaborative contexts. The chronotope concept helps us not only critically understand the complexity of mobile-assisted language learning but also theoretically reimagine the classroom chronotopes and the roles, relationships and processes of learning in an increasingly technology-based knowledge economy in post-pandemic education.

Keywords: Chinese learning; chronotope; task design; technology affordance; WeChat

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1 Introduction

To the extent that language education is mostly perceived as something contained in the classroom, the availability and affordances of new technology have injected it with tremendous movement and mobility, enriching and extending learning opportunities beyond the classroom walls. This study investigates the role played by mobile technology in language classrooms in the context of digital education from both a theoretical and a pedagogical perspective. We draw on the concept of "chronotopes" (Bakhtin, 1981) to explicate the technological intervention and reorganisation of space–time—what can be called the "chronotopic affordance" of technology—and demonstrate that this affordance can lead to the creative intersecting of in-person and remote activities both online and offline in task-based language teaching.

Borrowing an example of task design in which WeChat, a popular mobile application among Chinese speakers, is employed as the central tool to facilitate the teaching of business Chinese (Wang & Wu, 2020), we will substantiate the theoretical purchase of chronotope in mobile-assisted language learning by analysing the potential ways in which classroom-based activities can be chronotopically modified and extended using WeChat. The benefit of chronotopic task design is that it fulfils the idea of authentic learning through task simulation while maximising networked collaborative learning that may otherwise be limited to the traditional classroom setting, both of which are guided by the principle of authenticity. This study can be read in three ways: as a theoretical framing of chronotope in technology-assisted education, as an empirical rendering of it and as an instantiation of language task design. This study emphasises the need to understand the complex and dynamic process of spatial and temporal development in digital learning, which can in turn inform the "reimagining of Chinese language teaching in the digital world" (Wang & Xing, forthcoming) and renew our understanding of technology, pedagogy and knowledge making more generally.

In what follows, we first provide the theoretical perspectives necessary for considering space–time in relation to technology affordance and task-based language teaching. We then discuss the chronotopic affordances of technology in facilitating task design, with reference to a WeChat-based Chinese language teaching tutorial devised by Wang and Wu (2020) as a case study. The case of WeChat, a tutorial intended for language instructors to advocate digital pedagogy, is by no means presented here as an archetype but primarily for the purpose of inspiration and exemplification. The case illustrates that both mobility and authenticity can be considerably enhanced through the use of WeChat to digitally reconfigure the space–time of the language classroom, driven by a task-based approach.

2 Theoretical perspectives

2.1 Task-based language teaching

While it is important to recognise that task-based language teaching is central to this study, it is beyond our scope to scrutinise its characteristics in full or compare it to other approaches. The nuanced definitions and tenets of the task-based approach to language teaching, as well as its advantages and shortcomings, have been addressed extensively elsewhere (e.g., Bygate, 2020; East, 2021, 2022; Ellis, 2003, 2018; Ellis et al., 2020; Jackson, 2022; Robinson, 2011). As Vandommele et al. (2018) remind us, the question of how real a task-based approach might be depends on the "task-in-process" in teaching practices, as much as the "task-on-paper" as a pre-set taxonomy or workplan. In this study, we regard the concepts of tasks and task-based approaches as part of the broad philosophical orientation to second language learning that engenders a particular kind of pedagogical belief and condition for exploring technology and its affordances for knowledge making in classroom settings.

Task-based language teaching (TBLT) has arguably been one of the most influential trends in second language education since its conception over four decades ago, fuelled largely by the global teaching of English. In simple terms, tasks are pedagogic activities designed to engage learners with primarily meaning-focused (rather than form-focused) language use. Samuda and Bygate (2008) described a task as "a holistic activity which engages language use in order to achieve some non-linguistic outcome while meeting a linguistic challenge, with the overall aim of promoting language learning, through process or product or both" (p. 69). The foundation of TBLT stems from the theories of communicative competence (Hymes, 1972) and systemic functional linguistics (Halliday, 1973), which posit that language is not just a set of formal structures but involves pieces of communication constructed for social purposes. This places TBLT firmly within the interactionalist paradigm and gives rise to what is now widely known as communicative language teaching (CLT).

CLT emphasises that language learning takes place beyond grammar translation through developing communicative competence and putting language knowledge and skills to use in a variety of authentic settings and situations. Based on these underpinnings, this study takes the perspective that a task can be understood as a process of holistic and collaborative development that "involves a number of distinct, though related processes such as social interaction, perception, ideational comprehension, motor control, contextual mapping and strategic control" (Samuda & Bygate, 2008, p. 15). More importantly, a task-based approach

strives for authentic learning by arriving at "a genuinely *applied* linguistic activity, in which … TBLT [is rooted] in real world contexts with real world agents, and defines itself in terms shaped and ratified by real world stakeholders" (Bygate, 2020, p. 284, emphasis original).

Thus, the core of task-based instruction is essentially about creating opportunities for goal-oriented communication through meaningful tasks to solve problems, complete projects, and reach decisions that will enable learning to go above and beyond language itself (Pica, 2008). As a guiding principle, task design aims to maximise language learning by taking into account the holistic and collaborative nature of tasks that must be situated in real-world contexts. It has been argued that, in classroom practices, effective task design should enhance the accuracy, complexity and fluency of language by installing (1) communicative conditions that demand information or outcomes, (2) teacher interventions to assist learners to focus on the required performance, and (3) tasks sequenced in the syllabus according to increasing linguistic, cognitive and communicative complexity to promote global competence (Baralt et al., 2014; Ellis, 2018; Sheppard, 2019).

Authenticity, despite sparking off ongoing debates in the field of second language teaching (Pinner, 2016; Shomoossi & Ketabi, 2007; Tatsuki, 2006; Taylor, 1994), is considered central to all aspects of task design. Authentic task design is believed to ensure a learner-centric approach that aims to provide natural input through authentic texts and roles that stimulate the autonomous, meaningful engagement of learners to address real-life issues in a culturally appropriate manner (Ellis et al., 2020; Gilmore, 2007; Mishan, 2005). Its realisation depends largely on strategies of contextualising the classroom to constructively simulate authentic situations and foster genuine learning experiences and the development of language and cultural competence (Joy, 2011).

The question of authenticity in task design is equally important in technology-assisted language learning. In distance education and remote learning environments, authenticity is considered integral in creating synergy amongst learner, task and technology (in line with Latourian actor-network theory), and can be achieved by designing learning environments that make effective use of the communication capabilities of technologies to connect learners in meaningful ways and encourage learning activities that are relevant and/or authentic to the participants (Herrington et al., 2006, p. 234–235). The communication capabilities of technologies accentuated in this context are akin to what we address below in terms of technology affordances, which can be employed to "design authenticity into" the learning environment in terms of connecting learners across space and time to create networked learning (Mishan, 2005).

With regard to new technology and, increasingly, mobile technology, Kukulska-Hulme and Traxler (2019, p. 246) noted that "these technologies offer unique

possibilities to support designs for learning where access, inclusion, opportunity and participation are priorities," and their deployment ought to enable more personalised, mobile, situated and authentic educational experiences (Beetham & Sharpe, 2019; Morgana & Kukulska-Hulme, 2021). Further evidence suggests that mobile devices are valued by learners as an important and enjoyable resource that motivates self-initiated learning and engagement from a distance (Demouy et al., 2015). These viewpoints on the usefulness of technology are key to our task design in this study, which considers how WeChat can recontextualise the classroom chronotope and scale up authentic language learning substantially.

2.2 Chronotopes of learning

The concept of chronotopes originated from Bakhtin's (1981) theorisation of the dialogic coordination and cultural representation of space–time in setting the historical context of literary narratives. Although well known in the field of literary studies, the chronotope has been overlooked in linguistics and educational studies until recently. One of the driving forces behind its rediscovery is the development of globalisation, which, as depicted by Appadurai (2000), is characterised by ethnoscapes, technoscapes, ideoscapes, financescapes and mediacapes: unprecedented flows and mobility of people, artefacts, ideas and resources across geographical, national and cultural boundaries. Concepts such as place, locality, language and community are seen as being fundamentally reshaped by these "scapes" (Blommaert, 2010; Pennycook, 2010), with technology being an indispensable facilitator (Castells, 1996). As part of this wave, new research is also prompted into how the concept of chronotopes may advance our insights into new linguistic and cultural phenomena (Blommaert & De Fina, 2015; Kroon & Swanenberg, 2020). For the purpose of this study, we focus on how chronotopes can help capture the space–time dynamics and mobility pertinent to learning, which has been undergoing significant changes due to technological innovations and educational reforms.

From an ecological perspective, educational practices can be broadly understood in terms of the space–time relations of learning in physical, social and virtual dimensions. This understanding is what Ritella (2018) and others proposed to theorise, following Bakhtin (1981), as chronotopes of learning. A chronotope, as such, refers to "an emergent configuration of the space–time relations during an intentional, collaborative learning activity" (Ritella, 2018, p. 3). The need to bring the theory of chronotope into learning and pedagogical research is motivated by "the introduction of continuously evolving virtual spaces and the implementation of pedagogical approaches such as the flipped classroom, connected learning, and place-based learning [that] entail the transformation of the space and time

organisation of learning" (Ritella et al., 2016, p. 49). They assert that the chronotope offers a fruitful way of examining the interdependence between space and time, how space–time is socially constructed and negotiated, and how it is materially organised and semiotically and discursively framed in the classroom.

The chronotopic framework holds that learning is processual, entailing situated bodily and pragmatic actions in interaction with multiple representations and taking place over time and across locations. How space–time is organised affects learners' sensemaking, and thus should be carefully considered in designing learning tasks (Ritella et al., 2016, 2021). This conceptualisation expands the ontological assumptions about language learning traditionally privileged in CLT, from linguistic structures to multimodal representations and interactional outcomes, and from language–teacher–learner triads confined to the classroom to spatially and temporally open, asynchronous, interconnected collaborative work. Through this lens, language learning is seen as organised and materialised not only with language items as the content of learning, but also chronotopically through the recontextualisation of resources, activities, discourses and practices of knowledge making surrounding language learning that both simulate and produce social realities in and beyond the classroom. Given the emergent nature of chronotopes, a task-based approach should attach great importance to the pedagogical design of space–time conducive to authentic language learning.

Existing research on the chronotopes of learning (see Ritella, 2018 for a review) has examined learners' discursive production of space and time to facilitate participatory learning (Bloome et al., 2009; Brown & Renshaw, 2006), identity development in space and over time (Hirst & Vadeboncoeur, 2006; Ritella & Ligorio, 2016), and the organisation and movement of objects, bodies and technologies as well as meanings and ideas (Ritella & Hakkarainen, 2012; Rosborough, 2016; Wegerif, 2007). The scholarship shows that pedagogic space–time can be discursively constructed in such a way that a hybrid chronotope emerges in which formal learning and informal everyday experience enter into a dialogue (Silseth & Arnseth, 2022), and students' past, present and future chronotopic relations come together in collaborative classroom work (Brown & Renshaw, 2006). Space–time can also be technologically mediated so that students are able to navigate in different time zones, spaces and places with diverse tools situated in their formal and informal lives to engage in a multimodal, multidimensional, collaborative learning practice (Kumpulainen et al., 2014).

Additionally, the classroom chronotope is seen as expanded by personal digital devices on school language projects, through which the relationship between the material, social and semiotic levels are reconstituted (Gilje, 2019). These findings highlight not only the designability of chronotopes but also their pedagogic potential to enable mobility and authenticity in a shared process of knowledge production.

This inspired the present study, which draws attention to the technological dimension of chronotopes in the teaching of Chinese as a foreign language (CFL). We describe the technology and its affordances in the next section before zooming in on its role in chronotopic task design in CFL.

2.3 Technology affordances

The potential of technology is often termed "technology affordances" (Hutchby, 2001). In contrast to the sociological emphasis on the social shaping of technology, affordance theory, derived from Gibson's (1979) ecological approach to understanding human perception, explains the technological shaping of social action. This constructivist view argues for a complementary relationship between technological tools and human practices and "a recognition of the constraining, as well as enabling, materiality of artefacts" (Hutchby, 2001, p. 441). It lays the foundation for steadily growing discussions (see Parchoma, 2014, for a review) on the growing and diverse use of new technology to support learning.

Conole and Dyke (2004) attempted to develop a taxonomy of affordances of learning technologies that included "enabling" elements, such as accessibility, speed of change, diverse experiences, communication and collaboration, and multimodal and non-linear learning, as well as "constraining" elements, such as risk and fragility, monopolisation and surveillance. Their aim was to generate a checklist for practitioners to make informed choices about the ways in which different technologies could be used (see Boyle & Cook, 2004 for a critique). Kirschner et al. (2004) suggested using the concepts of "utility" and "usability" as two criteria for evaluating the usefulness of an educational system. Utility refers to technology providing users with the functionalities needed to perform a learning task and is associated with educational affordances and social affordances, whereas usability relates to the technology enabling users to understand and operate the tool and is measured by technological affordances. Others have further identified affective, motivational, connective, physical, cognitive, sensory, paralinguistic and digital affordances (Hartson, 2003; Hayes et al., 2016; Zhang, 2008)—all can perhaps be described as "multimodal affordances" (Jewitt, 2004)—as the use of technological tools extends rapidly to social media and other forms of new technology.

Recent observations arising from applied research on technology affordances are also noteworthy for interpreting social life and learning. Tagg and Lyon's (2021) ethnographic analysis of mobile messaging micro-practices, for instance, shows that the affordances associated with digital devices play a critical part in language users' meaning making and co-construction of a multimodal repertoire in networked communication. Their study indicates the interplay between technology affordances

and language practices in that when taken from a learning perspective, language development is shaped by the pre-programmed technical and semiotic features of the digital platform. At the same time, it describes the collaborative, hybrid nature of communication in "phonespace" (Townsend, 2002) as a specific technologically afforded space–time within an emerging online-offline nexus. This latter feature resonates with Christiansen's (2019) study of how digital media aids the co-creation of transnational chronotopes for migrants, enabling their maintenance of belongingness that transcends both place and time to enter the social spaces of a shared imagined experience and cultural practices. Thus, it is evident that technology affordances can contrive chronotopes and render them technologically designable, with the potential to add to or alter the offline lifeworld by creating translocal online connections and networked communities through which disparate individuals engage in shared events, sensemaking and learning.

In the context of technology-assisted learning—notwithstanding the competing discourses about positioning new technology as technology for learning (Wright & Parchoma, 2011)—it is conceivable that chronotopes can be technologically contrived and designed for pedagogical purposes. Kukulska-Hulme (2021) argues that educational institutions must appropriate personal technologies such as mobile phones due to student demand and that such tools facilitate interactions that support educational ends. Moreover, she emphasises that when considering the design principles of adapting the mobile "apps economy" (Genachowski, 2010) for learning, we must aspire to "design *of* learning" (design of content, activities, communities and communication) as well as "design *for* learning" (an intentional, systematic and creative approach to responding to learning in complex environments). These combined elements encourage us to identify and employ the kind of affordances mobile technology may uniquely offer to construct chronotopes of learning in ways that are personalised, situated, authentic and informal (Kukulska-Hulme & Traxler, 2019).

Specific to second language teaching, it has been argued in broad terms that technology and TBLT are mutually constitutive and enhancing, and technology-assisted TBLT can contribute to the equalisation of participation, the enhancement of noticing and self-monitoring, the facilitation of language play and social cohesiveness (Lai & Li, 2011). In parallel, and from the vantage point of technology, there is an emerging field of mobile-assisted language learning (MALL), which considers mobile devices instrumental to affording not only mobility of technology but also many other mobilities, including the dynamic nature of human communication and language development (see Kukulska-Hulme, 2016 for a review; see also Morgana & Kukulska, 2021). This subsumes what we emphasise in this study as the chronotopic affordances of technology, that is, of the space–time relations of learning (re)configurable by mobile applications. Such relations were previously described by

Kukulska-Hulme and Wible (2008) as "context" and contextual learning. They contended that mobile learning in context is about creating an ecology of situated interactions of individuals and groups with their social contacts and aspects of their physical environments, which are generated by language learners and by technology:

> From a technical perspective, context-enabled learning is a significant extension of current location-based approaches, integrating personalised interaction and adaptive content with context identification and detection technologies, including personal task and goal context, location context, object identification and tagging, time, and social context. (Kukulska-Hulme & Wible, 2008, p. 208, p. 208)

Kukulska-Hulme and Wible concluded that "one of the basic challenges to creating effective mobile language learning applications lies in *how context is to be construed* so that it can be exploited for the benefit of the mobile leaner" (2008, p. 210, our emphasis). These suppositions validate our attention to the potential ways in which language tasks can be chronotopically designed through mobile technology to construe and extend contextual learning.

As shown above, there is growing interest in exploring the role of technology in language education. Much has been developed for understanding MALL and, within that, the principles of technology design of and for learning (Thomas & Reinders, 2011). However, there is more to be learnt about how classroom chronotopes may be technologically afforded, modified and pedagogically incorporated into language task design to facilitate second language learning (see Gilje, 2019; Nocchi & Blin, 2013). Our particular educational take on chronotope is what this study probes into, as informed by theories and debates in the fields of second language teaching and technology affordance and design for learning. To this end, and taking stock of the review of relevant scholarship, the following assumptions form the basis for framing the chronotopic affordances of technology in language learning that inform the remainder of the paper:

- TBLT centres on the development of communicative competence by engaging learners in meaningful language use in realistic contexts.
- Task design should maximise language learning by situating classroom experiences in authentically contextualised activities.
- Contextual learning constitutes spatio-temporal relations called chronotopes that are produced not only linguistically but also physically, socially and virtually via technology.
- The chronotopic affordances of technology can be pedagogically designed and organised to facilitate and fulfil task authenticity in language learning.

In what follows, we demonstrate through a case study how the affordances of WeChat are pedagogically designed into task-based CFL teaching to expand and mix the chronotopes of learning and creatively enhance task authenticity. We concentrate on the interconnectedness and mutual productiveness of technology, chronotopes and task authenticity. We attempt to illustrate how careful, holistic configuration of these elements can lead learners into a sequence of distinct scenarios, roles and associated language repertoires that can chronotopically facilitate and amplify authentic learning.

3 Chronotopic task design in CFL

This study takes a digital Chinese teaching tutorial (Wang & Wu, 2020) as a case in point. Inspired by the task-based approach, the tutorial applies a step-by-step, project-based approach to task design for learning Chinese, revolving around the use of WeChat. Its purpose is to underscore the pedagogical use of mobile technology for classroom-based language instruction that aims to engage students in communicative roles and tasks simulating real-world scenarios. Instead of a script of "how to", the tutorial serves as an example of technology-mediated TBLT. Its core purpose is to illustrate the chronotopic affordances of WeChat via mobile phone that generate, connect and move between the in-class/distant, virtual/offline, individual/collective chronotopes of learning in the completion of a range of tasks for a business project in Chinese. In what follows, we first consider WeChat as learning technology, second, the specific language course and participants and finally, the features of chronotopic task design using WeChat.

3.1 WeChat

WeChat (or *weixin*) is a free mobile application developed by China's technology giant Tencent in 2011. It offers a mixture of features similar to those of WhatsApp, Twitter and Facebook, including multimodal instant messaging (of texts, images and files), online payment, and social media functions such as text tweets, group chats, photo sharing and short vlogs of "moments" (see Figure 1). Verified account users can also share blogs and official publicity for subscription and commercial purposes. It is estimated that in 2022, the total number of active WeChat users exceeded two billion globally (Tencent, 2022).

Aside from being an extremely popular app for social networking in Chinese-speaking markets, WeChat is widely used for professional and business communication (L. Huang, 2019; Tian, 2020). More recently, WeChat is increasingly used as an

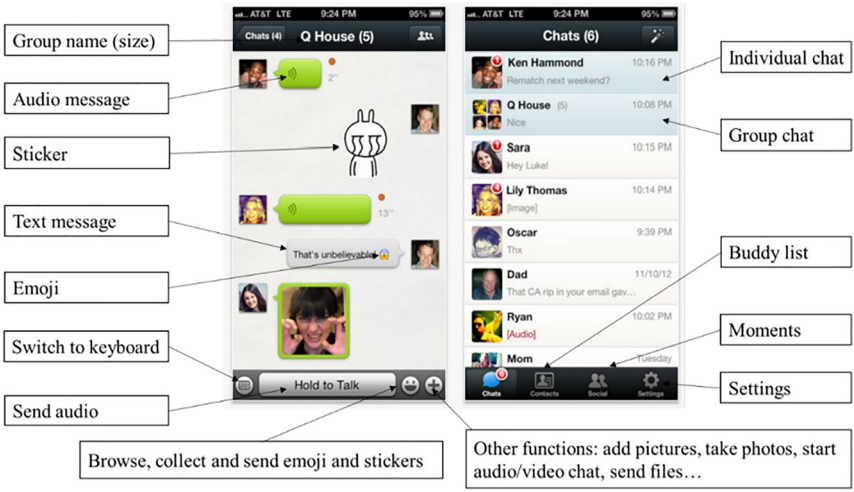

Figure 1: The main interface and functions of WeChat (Tang & Hew, 2019, p. 132, p. 132).

educational technology, notably for supporting the learning of CFL and facilitating mediated cultural exchange for learners of Chinese (X. Huang, 2019; Jin, 2017; Tong et al., 2020). Both X. Huang's (2019) longitudinal observation of beginner learners of Chinese and Tong et al.'s (2020) analysis of teacher reflective journals reveal a positive reception of WeChat in mobile-assisted Chinese learning. Their studies indicate that WeChat can stimulate and support spontaneous, proactive learning that focuses students on authentic interactions with native speakers and connects classroom knowledge to life. However, WeChat also creates challenges for teachers regarding how to implement WeChat-supported tasks as holistic and dynamic processes and how to meet both the pedagogical and technological goals of technology-mediated tasks in MALL.

With regard to the space–time relations of learning, Jin's (2017) examination of year-abroad students in China highlights the affordances of WeChat in creating a "virtual encountering space" with native speakers for authentic communication and providing students with valuable linguistic and literacy resources for doing so, thus fostering new learner identities. Building on these enquiries, this study focuses on the chronotopic affordances of WeChat from the perspective of language task design. It examines how the chronotopes of authentic language learning emerge from the reconstituting, crossing and rearranging of space–time frames as a result of the technological intervention of WeChat.

3.2 The CFL classroom

The idealised context of task design in our case study is an intermediate-level business Chinese course in a European university language programme (Wang & Wu, 2020). Its rationale is to integrate the teaching of both the language and the content—in this case, Chinese combined with a business project for higher-level European learners of CFL. The presumption is that the CFL students are already capable users of WeChat in terms of both linguistic and technical competence, although preparation for this can be provided prior to the project. In fact, the students' technological skills, the content subject and even the target language can all be regarded as variables of task design that are adjustable or substitutable according to the nature and needs of specific language programmes and participants. The key is flexibly integrating WeChat into the classroom for the creation and repurposing of chronotopes to suit the stages of both language and content development, which are collectively defined by learners as they approach the project.

3.3 WeChat in chronotopic task design

The simulated Chinese business project presented by Wang and Wu (2020) can be briefly summarised as follows:

- Students are required to work in groups of three or four to set up a Europe-based business company that promotes Sino-European tourism.
- They act as core members of the company according to negotiated roles and responsibilities that match self-identified preferences and skills.
- As company managers, students coordinate and conduct market research with the help of WeChat and collectively design a tourism product.
- The managers pitch their draft business plan to potential "customers" (native speakers of Chinese selected by the teacher) in the Chinese market via WeChat.
- The project team finalises the business plan according to the feedback received and publishes a tourism product online, if possible, via WeChat.

While this appears to be a feasible, meaningful and motivating simulation project, what makes its design particularly distinctive is the strategic involvement of WeChat. By strategic, we refer to WeChat's chronotopic affordances, which are called upon as the business project progresses to technologically build and modify space–time at a particular phase, in a specific way, to enhance authentic, context-driven communication for each task or task cycle. This is outlined in Table 1.

A first observation is that the task design presented in this business project is especially conducive to self-guided collaborative learning through problem

Table 1: Outline of task-based WeChat usage connecting chronotopes of learning and task authenticity.

Project stage	Task components	WeChat usage	Chronotopic configuration	Task authenticity
1. Setting up a company	1.1 Form a virtual company 1.2 Choose a Chinese company name and logo 1.3 Write a company introduction in Chinese	WeChat group chat set up WeChat used in class and out of class to provide teacher input and conduct group discussion and information sharing	Physical classroom space mixed with WeChat virtual space for in-class teacher–student interactions WeChat virtual space for out-of-classroom student–student and teacher–student interactions	Contextualised and outcome driven and culturally oriented communication
2. Role defining and division	2.1 Discuss and negotiate core roles and responsibilities 2.2 Write self-descriptions of roles in Chinese 2.3 Report company and staff to headquarters in China	WeChat used in class and out of class to provide teacher input, conduct group discussion and information sharing, and connect students with native speakers (NSs) as simulated professionals	Physical classroom space mixed with WeChat virtual space for in-class, teacher–student and student–student interactions WeChat virtual space for out-of-classroom student–student, teacher–student and NS–student interactions	Simulated role play in class, extending to role play with NSs in the real world outside the class
3. Market research and product design	3.1 Conduct market research according to roles 3.2 Discuss and co-write product design	WeChat used in class and out of class to conduct research, group discussion and information sharing, and provide teacher input	Physical classroom space mixed with WeChat virtual space for in-class teacher–student and student–student interactions and independent work WeChat virtual space for out-of-classroom student–student interactions	Role-oriented and research-driven communication
4. Pitching to customers	4.1 Pitch to Chinese “customers” in China via WeChat 4.2 Address “customer” questions and feedback	WeChat used out of class to provide teacher input, elicit student output, and connect students with NSs selected and set up by the teacher	WeChat virtual space for out-of-classroom student–student, student-teacher, and student–NS interactions	Simulated role play with NSs “in the world”

Table 1: (continued)

Project stage	Task components	WeChat usage	Chronotopic configuration	Task authenticity
5. Finalising business plan	5.1 Collaboratively improve business plan in formal writing	WeChat used in class and out of class to conduct research, group discussion and information sharing, and provide teacher input	Physical classroom space mixed with WeChat virtual space for in-classroom teacher–student and student–student interactions WeChat virtual space for out-of-classroom student–student interactions	Goal- and outcome-driven communication through teamwork
6. Publicity	6.1 Adapt the written business plan for the WeChat style of publicity 6.2 Publish final text on WeChat where possible for the Chinese market	WeChat used in class and out of class to conduct research, group discussion and information sharing, and provide teacher input WeChat used as platform for publicity	Physical classroom space mixed with WeChat virtual space for in-classroom teacher–student and student–student interactions WeChat virtual space as public cultural and business space for non-simulated student–NS interactions	Culturally oriented and outcome driven communication in the real world with no simulation

solving. It is made up of six progressively linked stages that simulate a real-life (albeit simplified) business operation, with each stage fulfilled by a cluster of pedagogic tasks that are either form focused or communication focused. Second, the use of technology (WeChat) is as crucial to learning as the content of the project in the task design, if not more so. WeChat is used to bring about and support each project stage and task cycle, both in and beyond the class. It facilitates formal learning as well as self-directed informal learning and integrates these two dimensions in the project. It is also a tool with a multifunctional role for communication and for learning, enabling the teacher to give instructions, set up pre-task activities and provide scaffolding feedback, and enabling the students to carry out group learning and team building while completing the simulated business communication (through role play) and outputs (such as business plan and publicity). Third, WeChat offers affordances that can be described not only as technological, but also as linguistic (language skills), cultural (Chinese), social (teamwork), affective (motivation) and

pedagogic (teaching and learning). As shown in Table 1, the task design has scope for exploiting all these aspects to various extents and interweaving them into the developmental stages of teaching and project making.

The focus of this study is the chronotopic affordances of WeChat. Adding to research on the chronotopes of learning, which has examined various issues such as connected learning, student identity and intercultural communication, our analysis is from the viewpoint of task design in language classrooms, and we observe the chronotopic affordances of WeChat as applied in the aforementioned tutorial, primarily from three interconnected aspects.

3.3.1 Aspect 1: merging the virtual with the physical

The mediated space–time afforded by WeChat via mobile devices is accessible to single end users and for virtual social networking purposes. It is highly individualised and private. The tutorial demonstrates that such characteristics can be harnessed and utilised to modify the relatively enclosed space–time of learning, which is traditionally defined by the physical immediacy and synchronicity of the teacher, students, learning materials and classroom, but rarely in juxtaposition with mobile devices for personal and social communication. As shown in Table 1, by including WeChat use in individual and collaborative engagement in the classroom setting (e.g., Tasks 1.3, 2.1, 2.2, 3.1, 3.2 and 5.1), the embodied chronotope of learning is merged with the virtual one. The space–time of the classroom is therefore opened up as the personal and flexible nature of the technological tool affords opportunities for individualised research and information gathering to be brought "into" the class from "outside". In this way, learning takes place synchronously and asynchronously online through the sharing and production of learning content via group chat, as well as offline through group in-person participation in the classroom. In this way, merging online and offline chronotopes enhances both individualised personal learning and networked collaborative learning.

WeChat can be adopted to re-coordinate and authenticate the virtual recontextualisation of tasks in the classroom. In moments such as 1.1, 6.1 and 6.2 (see Table 1), WeChat is used to set up the task according to the space–time format of workplace communication and business publicity in the real world, which revolves around WeChat in the Chinese-speaking context. This makes WeChat a natural(ised) and indispensable means of communication in the tasks, marrying implicit mediated learning via virtual simulation with explicit non-mediated processes of learning co-occurring in the classroom. It legitimates the role of WeChat as a tool for "business" and for learning and elicits context-appropriate and genre-specific authentic use of the Chinese language.

3.3.2 Aspect 2: crossing the formal and the informal

WeChat operates on personal mobile devices for individualised private use, particularly smartphones. These devices are mobile and flexible and create a new form of connectivity and phonespace. In this sense, WeChat can afford chronotopic movements and mobility, creating the potential to bring "into" the space–time defined by the classroom what may be perceived as the "outside". Similarly, it can move what is "inside" the classroom away and extend into a different chronotope while remaining connected to the main chronotope of learning. This can be seen in the task design shown in Table 1, notably in Project Stages 1, 2, 3 and 5, when WeChat is used frequently to foster out-of-class communication and collaboration for the students. Such practices of proactively adopting mobile devices as learning technology are frequently applied to language learning, as they are believed to complement formal learning in the classroom and promote authentic learning in spontaneous real-life situations, learner agency and autonomy and teaching innovation (Godwin-Jones, 2017; Shadiev et al., 2017).

Two things are worth emphasising here. First, the use of WeChat allows learning to go beyond the classroom chronotope and generates an additional chronotope of informal learning in which students interact virtually while being corporeally elsewhere. This allows them considerable mobility and flexibility in that learning can be on the move, since WeChat enables them to work and contribute at their own time and pace, even if unsupervised and in settings atypical of formal learning. Second, the two seemingly distinct types of chronotopes—describable as formal and informal—are interconnected, and their boundaries become blurred and crossed with WeChat. This is related to the task design, which detaches communication from the informal environments *in situ* and realigns it online with the formal learning goals and activities specified by the tasks. What seems to be informal elsewhere is in fact coordinated by something focused, shared, intentional and (semi-)structured (on par with asynchronous learning), despite being virtual, intangible and across distance. Put differently, the chronotope of the classroom is, afforded by WeChat, connected and transposed to disparate spaces and times. This expands the learning chronotopically, and through shared communal practices generated by task design, the distinctions between "formal" and "informal" are reconstituted, thus becoming irrelevant (Greenhow & Lewin, 2015). Collaborative learning emerges from and develops through multiple connected and hybridised chronotopes.

3.3.3 Aspect 3: extending the local to the translocal

One of the unprecedented potentials afforded by digital technology is its global reach. In chronotopic terms, mobile applications such as WeChat and similar technological

innovations create effects of what Harvey (1989) refers to as time–space compression —that is, the condensing or eliding of spatial and temporal distances as a constraint to physical and metaphorical mobility. For education, this affordance can be viewed positively as something that disrupts and liberates learning as solely local practices and facilitates translocal, transtemporal networks of communication and knowledge making.

In the language classroom, this affordance can be seen exemplified in the tutorial under question, notably in Tasks 2.3, 4.2 and 6.2 (see Table 1). A striking common feature in the design of these activities is the direct contact between the students and the "authentic" interlocutors and audiences mediated by WeChat. These are basically role plays involving native speakers from outside the class. Most of them are carefully selected and prepared by the teacher behind the scenes for their expertise in either Chinese teaching or business to support pedagogic tasks. Others are anonymous public users of WeChat in the real world when the business plan is published on WeChat. These native speakers are intended by task design to be (or act as) "colleagues", "clients" or "consumers" in China. They participate in the task and fulfil these roles and capacities virtually from wherever they are located, representing an authentic sense of China for the European students and the people inhabiting the physical, cultural and economic chronotopes in that part of the world.

The use of WeChat in these activities, therefore, creates not only an alternative platform for role play but also genuine and critical intercultural encounters and authentic learning in which the Chinese language and culture are key. This is achieved through the technologically extended classroom chronotype, supporting the point made in the previous section about crossing formal and informal learning beyond the classroom and, more fundamentally, to an entirely different physical and sociocultural frame of space–time: to China and by extension, the Chinese-speaking world. In this sense, the chronotopic intervention is significant, maximising task authenticity as well as networked learning. Above and beyond this, it engenders substantial mobility of linguistic and embodied resources, cultural meanings and opportunities of translocal networks of learning, even if this is virtual and on a small scale. The chronotopic affordances of WeChat extend learning as local events and, by way of innovative technological task design, add an invaluable translocal dimension.

To summarise, using Wang and Wu's (2020) tutorial as a brief case study, we have shown that digital technology such as WeChat can be innovatively applied to and integrated with the task-based communicative activities of language learning. As a thought-provoking example of the WeChat-based approach to task design, the tutorial analysed above illustrates that mobile technology affords the TBLT approach notable potential to create and rearrange the chronotopes of learning in specific ways. These can be visually imagined, as shown in Figure 2.

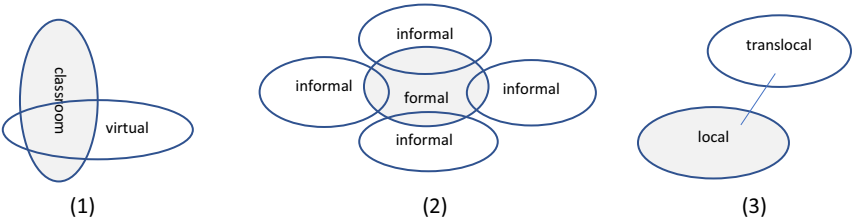

Figure 2: Chronotopic affordances of WeChat in a Chinese language tutorial.

As Figure 2 illustrates, the chronotopic intervention of WeChat in the default environment of learning (represented in grey circles) can (1) create new virtual space–time and merge it with the physical environment to recontextualise tasks or foster differentiated learning, (2) cross the boundaries of and connect "formal" and "informal" learning to enhance networked, collaborative learning, and (3) extend and recontextualise learning from local (in class, here and now, in Europe) to translocal encountering and meaning making (beyond class, out there, in China). These affordances are facilitated by WeChat in accordance with task design, which simulates a business project in this tutorial, and authentic learning, which strives for personalised, situated and purpose-driven communicative skills firmly embedded in real-world contexts. Although these three aspects of chronotopic design are distinctly identified and visualised in Figure 2, they are by no means exhaustive or discrete. In fact, they are better seen as interconnected and dynamic, as they can be methodically applied in the process of learning and systematically integrated into appropriate simulation stages of task-based projects, as illustrated by Wang and Wu (2020).

4 Conclusion

The main contribution of this study is to expand the current vocabulary of technology-assisted language learning by adopting the concept of chronotopes to examine the potential of technology in task-based second language teaching. To add to the growing body of work in these cross-disciplinary areas, we draw particular attention to the technological dimension of chronotopes from the perspective of task design, which arises from the increased application of mobile phones for educational purposes but is relatively under-researched.

By analysing an example of WeChat-based task design for learning business Chinese, we have demonstrated that space–time relations are crucial contexts of learning and can be pedagogically designed taking advantage of technology affordances. The strategies for doing this are driven by the desire and need for authentic learning, a rationale that underpins both language task design and technological

design in education. They can largely be achieved through the digital manipulation of classroom chronotopes in tangible and intangible ways, afforded in this study by WeChat. Although some of what has been described and discussed in the case study may sound mundane or ubiquitous, the chronotopic lens goes some way to helping us explain the complex roles played by technology in building and rearranging the space and time of learning, which are often taken for granted or underexplored.

The concept of chronotopes allows us to capture and analyse the multi-layered, intersecting and moving nature of space–time in a digital classroom with a degree of precision. These characteristics offer us an alternative way to reimagine the classroom and teaching and learning therein—traditionally perceived as local, institutionalised and enclosed—especially in the post-COVID digital era of globalisation. As a result of technological intervention, the complex and dynamic processes of chronotopic configuration and mediated mobility of learning highlight the real need to rethink strategic digital expansion and incorporation in both technology and pedagogy studies. From such a perspective, we envisage the analytical power and conceptual potential of chronotopes in advancing our understanding of and research on the complexity of technology-assisted learning. We see the concept of chronotopes being extended from its widely studied physical, semiotic and discursive dimensions to the emerging educational and technological dimensions, which we consider capable of encapsulating the dynamics of mobile-mediated space–time relations in digital learning environments. In this sense, this study advances the theory of chronotopes.

Furthermore, the metaphor of chronotopes compels us to reimagine technology-facilitated knowledge production. This study has underscored space–time as an opportunity that digital technology may afford in a language classroom for collective and individualised learning. As illustrated in the case of WeChat, the knowledge flow in a chronotopically imagined classroom is no longer linear, from the teacher as the expert and provider to students as novices and receivers, but becomes multi-directional, polycentric and centrifugal. It crosses space and time, inviting and relying much more on students' self-learning, peer negotiation and scaffolding, and on external reference points such as public information sources and real-life interlocutors. In such a process, the teacher takes on the role of pedagogic designer, task facilitator and just one of many co-producers of learning as the task cycle develops and unfolds, involving a combination of knowledge stakeholders and transmitters at any given moment, depending on the task design. This is highly significant for knowledge practices. It indicates the potential of technology to decentralise the structure of knowledge ownership in which authoritative ownership of language knowledge often associated with the teacher and native speakers can be democratised and redistributed between different participants of the production of meaning, thus reconstituting the networked epistemic community.

Apart from roles and ownership, technology also impacts access to the means of meaning production and infrastructure of the knowledge economy (such as the mobile app economy described by Genachowski, 2010). Technology, particularly mobile technology, can provide new virtual and material infrastructures for epistemic agency and mobility that were previously unavailable for learning. Through personal mobile devices, orthodox book-based (and teacher-centred) in-class activities are disrupted and mixed with technology-driven information gathering, processing and sharing that take place on the move, separately or as a group, locally or translocally. This means that students not only learn what they are supposed to learn in a designated space and time, they also get to learn what they can and want to learn and engage with this process in a much more flexible relationship with the coursebook, the teacher, the classroom and other institutionalised means of imparting knowledge. Through this process, knowledge itself is redefined, since it is now generated differently. Thus, we suggest that in mobile-assisted learning, technology constitutes a critical part of the knowledge-making system that produces and requires particularly physical or mediated worlds and space–time relations. It enables students to produce their own chronotopes of learning in relation to the class and, as such, caters for differentiated, inclusive and collaborative learning that empowers holistic personal growth. In this respect, technology must be understood, in the Latourian sense of the term (Latour, 2005), as a nonhuman "actor" in constructing networked learning.

Finally, to return to task design, it is prudent to reflect on the tutorial from which the arguments of this study have been derived. Although we indicated from the outset that the case is by no means an archetype, it should be acknowledged that the task design presented in the tutorial is based on an idealised context of instruction, working with linguistically and technically capable learners. Considerations and strategies are still required to provide solutions for those who might not have access to mobile devices or who might not be sufficiently digitally competent to engage with tasks. As open-ended as the task-based approach can be, the teacher in this kind of task design is nonetheless faced with the challenge of adapting and monitoring their own supervisory role in the process and finding effective ways to evaluate the learning outcomes. To this end, a challenge also lies in how to balance the learners' development of the target language skills and the exercise of business management skills. It is therefore useful to also determine the extent to which the chronotopic affordances proposed here will actually work when the tutorial is implemented by different teachers working with diverse learning groups. More research and exploration are required in these areas to advance a pedagogic approach in which the chronotopes of learning can be effectively designed, characterised and managed, and to understand the extent to which this exercise can inform both education and technology in society at large.

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