Mengdi Wang, Ann Devitt, Juan Gao, Ciarán Baurer

Trinity College Dublin, Dublin, Ireland (Mengdi & Ann & Ciarán)
Belvedere College SJ., Dublin, Ireland (Juan)

wangm3@tcd.ie, devittan@tcd.ie, gjuan@belvederecollege.ie, bauerci@tcd.ie

Computer mediated communication and task-based learning for adolescent learners of Chinese as a foreign Language in Ireland: An eBook task design under the adaption of Bridge 21 technology-mediated learning model

Bio data

Mengdi Wang is currently a PhD student in the School of Education at Trinity College Dublin. Her research interests are computer-mediated communications, telecollaborative language learning, technology-mediated task-based language teaching, Chinese as a foreign language learning and intercultural communicative competence.

Dr. Ann Devitt is an Associate Professor of Language Education at the School of Education in Trinity College Dublin. Her research interests lie in the area of language teaching and learning and technology enhanced learning. Dr. Devitt is currently academic director for Learnovate, the research and innovation centre focused on educational technology funded by Enterprise Ireland and hosted in TCD.

Ms. Juan Gao holds both a teaching certificate in Mandarin Chinese as well as a business management qualification background. Ms. Gao is an experienced and enthusiastic Chinese language and culture teacher and has joined Belvedere College S.J. since 2013. Currently, she lectures junior cycle Chinese and transition year Chinese courses in Belvedere College.

Mr. Ciarán Bauer moved into the educational sector and joined Bridge21, Trinity College Dublin, as Programme Manager in early 2012. Ciarán and his team offer a new model of learning that can be adapted for use in Irish secondary schools. His research interests are, 21st century learning, collaborative learning and the alignment of these methodologies with language learning methodologies.

Abstract

The Bridge 21 learning model emphasizes teamwork and technology mediation in the process of activity implementations. With the introduction of Chinese as a Leaving Certificate specification in the Irish secondary education system in 2020, there is a growing interest in Chinese language among schools, parents, as well as students. There are three types of Chinese language courses run through Irish secondary school settings: Junior Cycle (JC) Chinese Short Course, Transition Year (TY) Chinese and Leaving Certificate Mandarin Chinese. However, compared to other Anglosphere countries (e.g., UK, Australia), Ireland is in the early development stages of Chinese as a Foreign Language (CFL) learning (Osborne et al., 2019). Despite this, the open and flexible principle of Chinese course syllabi in JC and TY not only provides Chinese language

teachers with the freedom of selecting contents, but also makes it possible to adapt Bridge 21 model into teaching practice. However, Chinese as a curriculum specification at JC in Ireland has not been explored in depth or been combined with the Bridge 21 model. Therefore, this paper aims to elaborate on the design and implementation of an eBook activity which aligns to the Bridge 21 model in a JC Chinese course. The preliminary findings of participants' reflections suggest that the majority of participants had a positive experience in this activity and identified language development, especially recognition and production of Chinese characters, while one group of participants highlighted that they felt challenged working as a team. This may suggest there is a need for training of both technological tools as well as teamwork prior to conducting Bridge 21 learning activities in the future.

Conference paper

Introduction

Computer-mediated communication (CMC), as an important research strand of computer-assisted language learning (CALL), which refers to "communication that take place between human beings via the instrumentality of computers" (Herring, 1996, p.1). Researchers have investigated CMC since the 1980s (Thorne, 2007). Later on in 1990s, CMC was introduced and deployed in the field of second language acquisition and language settings (Beatty & Nunan, 2004; Herring, 1996; Li, 2018; Lin, 2015; O'Rourke & Stickler, 2017; Thorne, 2007; Warschauer, 1997). Generally, CMC is categorised into two different types, which are synchronous (SCMC) and asynchronous (ASCMC). Thorne (2007) characterised CMC as "multimodal, often (but not exclusively) Internet-mediated communication" (p. 1623). Multimodality as a key characteristic of CMC implies that an integration of multiple modes such as text, audio, and video embedded in specific CMC tools are individually or collectively utilised in language learning practice. The opportunities with more authentic target language exposure afforded by virtual environments and telecollaboration have been discussed among scholars and practitioners (Godwin-Jones, 2019; Lewis & O'Dowd, 2016; Milton, 2012; O'Rourke, 2007; Sadler, 2017; Schenker, 2012; Shih & Yang, 2008; Sykes et al., 2008). Therefore, these are identified as another two types of CMC having become prevalent after 2000.

The development of CMC in Chinese as a Foreign Language (CFL)

With the aim of investigating CMC tools integrated with tasks assisting Chinese as a foreign language learning, a systematic review was undertaken by authors who reviewed and analysed 69 research papers from 2008 to 2022. After screening and analysing selected papers, findings suggested that: 1) it is a common practice that collaborative learning facilitated by CMC tools among CFL learners mainly occurs in the same classroom environment (either physical or online), 2) a lack of studies targeting adolescent CFL learners addressing how CMC tools facilitate young learners of Chinese. Therefore, this paper will provide a valuable glimpse of the whole process of a collaborative eBook learning activity, which adapts the technology-mediated learning model, Bridge 21, among adolescent CFL learners in the Irish educational context.

Bridge 21 model

The Bridge 21 learning model is student-centred, which involves the following elements: technology-mediated, project-based, goal-oriented, social learning environment, learning space, and reflection. This model addresses a shift from teacher-centred to student-led instruction which aims to create a collaborative learning atmosphere for learners (Byrne et al., 2019; Lawlor et al., 2018; Sullivan et al., 2015). The full stages of the Bridge 21 activity model are shown in Figure 1. To date, the Bridge 21 model has been deployed in a wide range of post-primary school contexts in Ireland across a range of curriculum areas, including some European languages learning through Erasmus+ programmes

(Byrne et al., 2019). However, Chinese as a curriculum specification at post-primary schools in Ireland has not been investigated in depth or integrated with the Bridge 21 model.
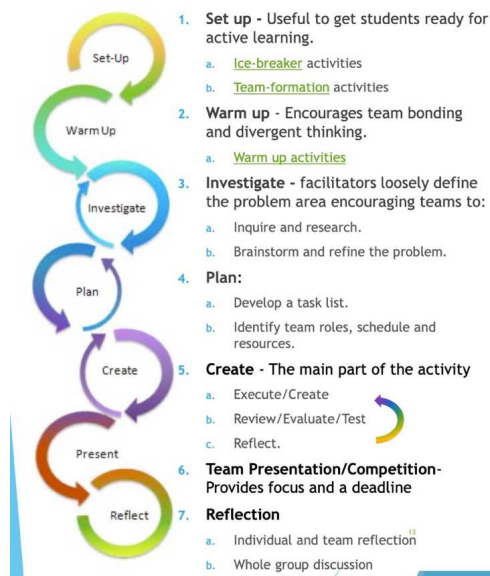

1. **Set up -** Useful to get students ready for active learning.
   a. Ice-breaker activities
   b. Team-formation activities
2. **Warm up -** Encourages team bonding and divergent thinking.
   a. Warm up activities
3. **Investigate -** facilitators loosely define the problem area encouraging teams to:
   a. Inquire and research.
   b. Brainstorm and refine the problem.
4. **Plan:**
   a. Develop a task list.
   b. Identify team roles, schedule and resources.
5. **Create -** The main part of the activity
   a. Execute/Create
   b. Review/Evaluate/Test
   c. Reflect.
6. **Team Presentation/Competition-** Provides focus and a deadline
7. **Reflection**
   a. Individual and team reflection
   b. Whole group discussion

Figure 1. *The Bridge 21 Activity Model (excerpted from* Bridge21 Introductory Handbook for Teachers*, 2016, p. 13)*

To address this gap, this paper describes an eBook activity as well as its implementation process in a secondary school located in Dublin. In addition, this paper will present preliminary findings about student participants' perceptions of the Bridge 21 model activity-eBook, which are based on individual and group reflection forms.

Background

This section will firstly introduce the background of CFL in the Irish educational system. Secondly, the profile of this eBook activity will be presented. Participants' demographic information will be available at the end of this section.

Chinese as a foreign language education in Ireland

Chinese as a foreign language was first introduced to Irish undergraduate students in 2006 (Wu, 2017). On the one hand, the development of Chinese in Irish higher educational institutes can be attributed to the support of two Confucius Institutes. On the other hand, some secondary schools themselves have expressed an interest in offering Chinese language courses to students in 2007 along with the establishment of the two Confucius Institutes in Ireland (Zhang, 2018).

Additionally, National Council for Curriculum and Assessment (NCCA) as a statutory body of the Department of Education in Ireland launched a taster Chinese course in 2012. This selective course mainly focuses on Chinese cultural aspects and a certain amount of linguistic content to Transition Year (TY) students who complete junior grades (i.e. Junior Cycle, hereafter JC) of secondary schools in Ireland. With the support of the Confucius

Institute, there were 262 classes in secondary schools and TY grades who run this course in 2017 (UCC Confucius Institute, n.d.) while UCD Confucius Institute (2016) reported that 102 schools ran a Chinese language course in 2016 (Osborne et al., 2019). In 2014, a pilot programme was tailored to JC adolescents. In 2017, Ireland launched *Languages Connect - Ireland's Strategy for Foreign Languages in Education 2017-2026*. This strategy aimed to introduce and develop Chinese as a curricular subject for Irish Senior Cycle students in the coming years. Following this national language strategy action, Chinese has been set up as a two-year curricular programme since 2020 (Curriculum Online, 2020). In June of 2022, students will take the first ever Leaving Certificate Chinese exam which is a state examination of the secondary school system and works as the university matriculation examination in Ireland. Table 1 provides an overview of Chinese language courses in secondary education in Ireland.

Table 1. *An overview of Chinese language course in Irish secondary educational level*

	Junior Cycle (3-year) 12-15 Years Old	Senior Cycle (3 or 4-year) 15/16 Years Old Above	
		Transition Unit (4th year, optional)	Leaving Certificate (5th & 6th year)
Title	Chinese Language and Culture	Chinese Culture and Language Studies	Leaving Certificate Mandarin Chinese
Language and Culture Weight	70% language; 30% cultur	70% culture; 30% language	Not indicated but focus on accurately and fluently using Chinese appropriate to the age and stage of learning
Study hours	100 hours	45 hours	180 hours
Proficiency level (CEFR)	• A1.1 for speaking and listening • Lower level for reading and writing	Not indicated	Broadly aligned with Pre A1/A1 level of the CEFR
Assessment	• Project/ a range of oral presentation styles, i.e. oral interview, role-play, poster presentation, digital presentation	• Portfolio assessment • Project work/presentation	• An oral examination • An aural examination • A written examination

Due to the nature of school-based teaching and assessment for JC and TY, it is important to understand that Chinese language teachers have freedom to choose and design learning materials based on students' learning needs. The formats of assessment in these two courses are varied which allow Chinese language teachers and learners to possibly create a project-based teaching and/or learning environment. This relative laissez-faire attitude to Chinese learning paves the way for introducing the Bridge 21 model into teaching practice.

EBook activity

As mentioned above, project-based learning as an essential element of Bridge 21 model not only requires collaborative teamwork but also establishes an open and loose space for students to take control of the learning process, being accountable to themselves and other team members (Lawlor et al., 2018). In alignment with Bridge 21 model design

protocols, a four-week eBook activity was introduced and assigned to a group of student participants who studied a Chinese language and culture course in Ireland during the academic year 2021-2022. The CMC tool utilised in this eBook activity was Book Creator. Book Creator as a digital book making platform allows students to individually log on to the digital device and then start to collaboratively work seamlessly.

Participant information

There were 14 students (aged 14-15) voluntarily participating in this project. They are from a secondary school for boys in Dublin. This school uses iPads to assist students' daily learning. Participants have two years of Chinese learning experience in this course which is consistently lectured by a native Chinese teacher. The range of participants' Chinese language proficiency aligns with the Common European Framework of Reference (CEFR) and varies from Pre-A1 to B1 in terms of the four linguistic skills (speaking, listening, reading and writing).

EBook activity implementation

Considering the curriculum design and time restrictions, this eBook activity contains four stages of integrating the original seven-stage Bridge 21 model.

Stage 1: Set up and warm up

Participants firstly were randomly assigned into three groups with three to five members in the first week. A checklist of creating an eBook containing the main learning steps of the Bridge 21 model, which illustrates sub-tasks and outputs in each stage, was printed out and distributed to each group. Specifically, participants firstly were encouraged to name the team and assign specific roles (team leader, note taker, resource investigator, proof-reader) for the following activity. As this is a project-based learning activity, it is crucial for each member to understand their responsibility and take ownership of the learning artefact. The team leader is responsible for keeping the team on track and staying on task. The note taker contributes to making a record of brainstorming ideas from every member. The resource investigator seeks appropriate visual and audio elements as a content editor. The proof-reader will check the language input before the official eBook launch and presentation. It should be noted that every member can take on more than one role if they are comfortable.

In addition, each team decided page numbers as well as the eBook's title. To provide participants with an idea of previous linguistic knowledge and cultural content, a pool of topics were listed on the eBook checklist. Students discussed and confirmed the overall contents of the eBook by extending on given topics in the brainstorming process.
Students then were invited by the teacher to login to a closed-accessed digital library on Book Creator. A quick tutorial session was provided for students to navigate around Book Creator on their own. They became familiar with typing Chinese characters and Pinyin (Chinese pronunciation system), searching images, drawing, uploading photos as well as voice recordings. The arrangement of the tutorial session not only facilitated participants to familiarise themselves with Book Creator, but also paved the way for generating creative eBooks in the coming weeks.

Stage 2: Investigate and plan

At this stage, the whole team used the checklist received as a step-by-step handbook. Along with the determined topics in the first stage, students moved on to list the gist of the eBook contents. This step empowers each team to concentrate on constructing content and messages they would pass to the audience at the later presentation stage. Additionally, the following storyboard sketch phase allows the team to depict a rough version of the eBook ahead of contributing on Book Creator. According to feedback from

participants, they demonstrated that this eBook checklist was handy and helpful to bring about creative ideas and guide them in making the eBook.

Stage 3: Create and Present

Following Stage 2, every member started to contribute to the allocated page by inserting language structures as well as illustrations. With the affordances of Book Creator, participants could use their own iPad device to seamlessly work on the same eBook without interruptions. In the final week of this activity, each team was invited to co-present their book in front of other classmates. To attract the audience's attention, two questions were given by the presenting group to challenge the rest of the classmates. This not only increased attention among other students while one group presented the book, but also created an active, engaging, and interactive environment.

Stage 4: Reflect

To grasp students' perceptions and personal experience of this activity under the adaption of the Bridge 21 model, the individual reflection form containing open-ended questions as well as a 5 Likert-scale questionnaire was administered to each participant after the presentations.

On the other hand, the group reflection focused on promoting team interactions through keeping a track of eBook activity achievements and challenges as well as attitudes toward using Book Creator. By the end, every group was required to assess teamwork and the eBook by following the eBook activity evaluation rubric. As this eBook activity is part of a PhD project, the focus group interview was conducted to invite participants to recall the whole process of eBook activity and freely talk about their opinions.

Reflections

This section will present students' perceptions of this eBook activity in terms of teamwork. The affordances and challenges will also be addressed.

Individual reflection on eBook experience

The analysis of item 'eBook activity overall experience' from individual reflection forms demonstrated a strongly positive experience among participants, with five rating it as excellent, five as good, and two as average. However, there were only two students who gave a fair rating regarding their own experience. This might be explained by the fact that one participant (Student 201) was a Chinese heritage speaker who found this activity unchallenging due to no emerging linguistic knowledge involved, while another student (Student 209) responded expressed low motivation and attitude towards the Chinese language course in his individual reflection form. Although those two students were not very positive, they still appreciated this opportunity to work with other classmates by rating 'strongly agree' to 'helping teammates when they needed' (Student 201), as well as 'listening to teammates' ideas' (Student 209) during the eBook activity.

Team Reflection on Achievements and Challenges

In terms of language learning and development, participants highlighted that this eBook activity helped them understand Chinese characters better by typing and recognising characters through iPad keyboard input during the process of making eBooks. Although the purpose of this activity was to review previous learning, participants demonstrated that they learned some new words and characters especially related to food and sports while preparing and writing pages on Book Creator.

As regards teamwork, one group pointed out that this was one of their major achievements. It is interesting that this group also recognised that the eBook activity provided them with an opportunity to "get to know a classmate better" as they introduced one member as a leading character in the book in front of the whole class. In terms of the role of Book Creator, the technology not only enabled participants to develop interpersonal relationships by communicating as a team, but it also brought the classroom together in a way that it had never been before. In addition, the adaption of Bridge 21 model in the eBook activity avails students' ability to research information as well as find reliable resources. Moreover, they reflected that the stage of investigation and planning was useful prior to designing a book on Book Creator.

Two challenges were reported in teams' reflection notes: language and teamwork. In terms of language barriers, one group addressed that "forming sentences of topics such as Irish foods and cultures is the problem as translations can be misinterpreted and translated incorrectly". This issue was identified by the authors in the presentation phase as 'hurling' was incorrectly translated to "投掷" in Chinese, while the correct answer would be "爱尔兰式曲棍球/板棍球". Another group noted that pronunciation was the main challenge. This might be explained by the fact that participants were not used to typing Chinese characters through Pinyin (Chinese alphabet pronunciation system). It was also seen within the eBook content as a certain amount of typos, e.g. tone differences: *和 (hé, and) instead of 喝 (hē, to drink), negative L1 interference: *吃床 (chīchuáng, eat bed) instead of起床 (qǐ chuáng, to get up), to name a few. On the other hand, this group noticed this because of the teacher's feedback on correct translations after the group presentations.

Regarding difficulties of teamwork, based on individual reflection form responses, although most participants enjoyed working with their team, one group highlighted working together was challenging. This may suggest that the training session on teamwork as well as team building warm-up activities is necessary. Another issue among participants was language barriers. L1 negative interference may bring spelling errors while participants type Chinese characters through Pinyin pronunciation regulations. In addition, the limited Chinese language knowledge may have hindered participants from contributing more creative and insightful content in this activity.

Conclusion

In the Irish post-primary educational system, Chinese has been introduced to adolescents through three courses at three schooling levels: Junior Cycle Short Course, Transition Year Course, and Leaving Certificate Curricular Subject. The flexibility in the Irish curriculum for Chinese allows Chinese language teachers to adapt innovative teaching and learning methods, such as the Bridge 21 model, into the classroom. The design and implementation of the eBook activity facilitated by Book Creator was tailored to a class of JC Chinese short course students in this study. Drawing on qualitative data from students, this project-based, collaborative eBook activity boosted participants' understanding of the language, in particular in relation to Chinese character writing. Furthermore, participants were very positive about the creative dimension of the eBook activity which allowed them to express themselves flexibly in Chinese. The structure of the eBook activity with its clear checklist works as a 'recipe' and scaffolds each group with indispensable 'ingredients' at different stages. The challenges in terms of teamwork arising in this activity would suggest the need to provide essential training of both technological tools as well as teamwork prior to conducting activities based on adapting the Bridge 21 model in future Chinese course activities.

References

Beatty, K., & Nunan, D. (2004). Computer-mediated collaborative learning. *System*, *32*(2), 165–183. https://doi.org/10.1016/j.system.2003.11.006

Trinity College Dublin. (2016). *Bridge21 introductory handbook for teachers*.
http://tft-project.eu/index.php/handbook/

Byrne, J. R., Kearney, S., & Sullivan, K. (2019). Technology-mediated collaborative learning: The Bridge21 activity model in theory and practice. In L. Daniela (Ed.), *Didactics of smart pedagogy: Smart pedagogy for technology enhanced learning* (pp. 309–330). Springer. https://doi.org/10.1007/978-3-030-01551-0_16

Godwin-Jones, R. (2019). Telecollaboration as an approach to developing intercultural communication competence. *Language Learning & Technology*, *23*(3), 8–28.

Herring, S. C. (1996). *Computer-mediated communication: Linguistic, social and cross-cultural perspectives*. Benjamins.

Lawlor, J., Conneely, C., Oldham, E., Marshall, K., & Tangney, B. (2018). Bridge21: Teamwork, technology and learning. A pragmatic model for effective twenty-first-century team-based learning. *Technology, Pedagogy and Education*, *27*(2), 211–232. https://doi.org/10.1080/1475939X.2017.1405066

Lewis, T., & O'Dowd, R. (2016). Online intercultural exchange and foreign language learning: A systematic review. In T. Lewis, R. O'Dowd & S. L. Thorne (Eds.), *Online intercultural exchange: Policy, pedagogy, practice* (Vol. 1, pp. 21–66). Routledge.
https://elib.tcd.ie/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=mzh&AN=2018230019

Li, M. (2018). Computer-mediated collaborative writing in L2 contexts: An analysis of empirical research. *Computer Assisted Language Learning*, *31*(8), 882–904. https://doi.org/10.1080/09588221.2018.1465981

Lin, H. (2015). Computer-mediated communication (CMC) in L2 oral proficiency development: A meta-analysis. *ReCALL, 27*(3), 261–287. http://doi.org/10.1017/S095834401400041X

Curriculum Online. (2020). *Mandarin Chinese*.
https://www.curriculumonline.ie/Senior-cycle/Senior-Cycle-Subjects/Mandarin-Chinese/

Milton, J. (2012). Second language acquisition via second life. In C. A. Chapelle (Ed.), *The encyclopedia of applied linguistics* (Vol. 10, pp. 1-9). https://doi.org/10.1002/9781405198431.wbeal1318

O'Rourke, B. (2007). Models of telecollaboration (1): eTandem. In R. O'Dowd (Ed.), *Online intercultural exchange* (pp. 41–61). Multilingual Matters. https://doi.org/10.21832/9781847690104-005

O'Rourke, B., & Stickler, U. (2017). Synchronous communication technologies for language learning: Promise and challenges in research and pedagogy. *Language Learning in Higher Education*, *7*(1), 1–20. https://doi.org/10.1515/cercles-2017-0009

Osborne, C., Zhang, Q., & Xia, Y. (2019). *The past and present of Chinese language teaching in Ireland*, *2*, 23.

Sadler, R. (2017). Virtual worlds and language education. In S. L. Thorne & S. May (Eds.), *Language, education and technology* (pp. 375–388). Springer. https://doi.org/10.1007/978-3-319-02237-6_29

Schenker, T. (2012). Intercultural competence and cultural learning through telecollaboration. *CALICO Journal*, *29*(3), 449–470.

Shih, Y. -C., & Yang, M. -T. (2008). A collaborative virtual environment for situated language learning using VEC3D. *Educational Technology & Society*, *11*(1), 56–68.

Sullivan, K., Marshall, K., & Tangney, B. (2015). Learning circles: A collaborative technology-mediated peer-teaching workshop. *Journal of Information Technology Education: Innovations in Practice*, *14*, 063–083. https://doi.org/10.28945/2176

Sykes, J. M., Oskoz, A., & Thorne, S. L. (2008). Web 2.0, synthetic immersive environments, and mobile resources for language education. *CALICO Journal*, *25*(3), 528–546.

Thorne, S. (2007). Computer-mediated communication. In N. H. Hornberger (Ed.), *Encyclopedia of language and education* (pp. 1623–1634). Springer.

UCC Confucius Institute. (n.d.). *About us*. University College Cork. Retrieved 30 May 2022, from https://www.ucc.ie/en/asian/confucius/aboutus/

UCD Confucius Institute. (2016). *The 11th Confucius Institute Conference Reference Materials (UCD CI)*. The 11th Confucius Institute Conference, Kunming, P.R. China.

Warschauer, M. (1997). Computer-mediated collaborative learning: Theory and practice. *The Modern Language Journal*, *81*(4), 470–481. https://doi.org/10.1111/j.1540-4781.1997.tb05514.x

Wu, Q. (2017). *A survey report on the Chinese-teaching in college and university in county of Dublin in Ireland* [Master thesis, Chongqing Normal University]. https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=CMFD201801&filename=1017168987.nh