Seamless Language Learning: Second Language Learning with Social Media

Aprendizaje de idiomas «sin costuras»: Aprendizaje de segundas lenguas y redes sociales

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ABSTRACT

This conceptual paper describes a language learning model that applies social media to foster contextualized and connected language learning in communities. The model emphasizes weaving together different forms of language learning activities that take place in different learning contexts to achieve seamless language learning. It promotes social interactions with social media about the learners' day-to-day life using the targeted second or foreign language. The paper first identifies three key features of the language learning approach, namely, authenticity, contextualization and socialization. How these features are related to the communicative approach of language learning are subsequently explicated. This is followed by further explication on how the notion of seamless language learning could inform learning designers and learners in synergizing the desired characteristics of language learning together. Eventually, we propose the SMILLA (Social MedIa as Language Learning Artifacts) Framework to operationalize seamless language learning with the use of social media. A case of seamless language learning environment design known as MyCLOUD will be described to illustrate the practicality of the SMILLA Framework.

RESUMEN

Este artículo describe un modelo de aprendizaje de lenguas que se sirve de las redes sociales para promover un aprendizaje contextualizado y conectado en comunidades. El modelo propone la interconexión entre diferentes tipos de actividades de aprendizaje en contextos diversos con el objetivo de lograr un aprendizaje discontinuo. Promueve las interacciones sociales a través de los medios compartiendo aspectos de la vida cotidiana en la lengua meta. Este trabajo identifica en primer lugar aspectos clave del enfoque de aprendizaje tales como la autenticidad, la contextualización y la socialización, al tiempo que explica cómo se relacionan estos aspectos con el enfoque comunicativo en el aprendizaje de lenguas. A continuación se presenta una discusión acerca de cómo la noción de aprendizaje discontinuo puede orientar a los creadores de materiales, docentes y aprendientes en la sinergia de todas las características del aprendizaje de lenguas. Para concluir, se propone el modelo SMILLA (Redes sociales como instrumentos para el aprendizaje de lenguas) para poner en práctica la noción de aprendizaje discontinuo con la ayuda de las redes sociales. Los resultados de su aplicación sugieren un potencial efecto sobre los aprendientes, generando usuarios más activos en contextos socialmente significativos, preparados para la autorreflexión sobre el uso que hacen de esa lengua, y con una menor necesidad de intervención del docente.

KEYWORDS | PALABRAS CLAVE

Social media, second language instruction, on-line learning, ecological perspective of language learning, communicative language teaching.
Redes sociales, enseñanza de segundas lenguas, aprendizaje en línea, perspectiva ecológica del aprendizaje de idiomas, enfoque comunicativo.

1. Introduction

This conceptual paper aims to explain a model that applies social media in fostering contextualized and connected second language (L2) or foreign language learning communities. Seamless Language Learning (SLL) (Kukulska-Hulme, 2015; Wong, Chai, & Aw, 2015) is an emerging model that emphasizes connecting language learning activities that occur in different learning spaces. The learning spaces that SLL connects typically encompass formal and informal learning spaces, individual and social spaces, as well as physical and digital spaces. The model seeks to facilitate social interactions in authentic learning contexts with social media in order to foster meaning making and idea sharing with the target language. The model can be applied to most L2 or foreign language learning contexts, including language learners who are not living in the authentic environments that offer adequate opportunities for them to apply the target languages for communication purpose (e.g., English learners in remote areas of China).

Recurrent criticisms on the current elementary and high school language classroom practices typically highlighted the dominance of the behaviorist PPP procedure (presentation, practice, production), over-relying on decontextualized materials, and unbalanced foci (e.g., direct teaching of language knowledge over communicative skills, language input over output activities, etc.) (Liu & Zhao, 2008; Tedick & Walker, 2009). Underlying these classroom practices is the structuralist movement which views language as a rigorous structure that is made up of grammatical elements and vocabulary (Canagarajah & Wurr, 2011). Hence, language knowledge is compartmentalized into prepackaged teaching materials that fail to address the contextualized nature of communication.

The key pedagogical challenge is to transform the target language into a 'living' language for learners. We have to consider other modalities of communication and make sense of how to leverage the authentic contexts to facilitate communication. In the rest of this manuscript, we will first explain the key features of the language learning approach that we envisage, namely, authenticity, contextualization and socialization, and relate it to the communicative approach of language learning. This is illustrated by previous research on how social media could be employed to mediate such language learning endeavours (although not without limitations); and how the notion of SLL could inform instructors and learners in synergizing all these desired characteristics of language learning. Eventually, we will propose the SMILLA (Social MedIa as Language Learning Artifacts) framework to elaborate a holistic strategy of appropriating social media to mediate a pervasive seamless language journey.

2. Literature review
2.2. The ecological perspective and communicative language teaching

In recent decades, there has been a rise of the ecological perspective in linguistics and language learning. The new perspective regards language environments as sociocultural complex adaptive systems. Thus, the stated field is about "the study of the relations between language use and the world within which language is used". Lafford (2009: 674-675) distilled a list of salient characteristics from the literature on ecological approach to language learning. The three characteristics that are most relevant to this study are,

• Language is a context-bound phenomenon. Language learning should arise from a learning community where learners perform learning activities by drawing on the learning context.

• The role of language is to mediate relationships between people and the world. Thus, the aim of language learning is to develop the ability to relate more effectively to other people. This can be achieved through joining a language learning community and carry out dialogical interaction.

• Language use is subject to the communicative needs of the people involved in specific authentic situations. Thus, in language learning situations, what should be evaluated and given feedback on is the learners' linguistic outputs (i.e., their writing texts, dialogues, and other modalities of language).

The ecological perspective could retrospectively serve as the theoretical basis of the communicative language teaching (CLT) that flags up interaction as both the objective and the means of language learning. The key is to encourage learners to partake in and reflect on linguistic interactions in multiple contexts (Thompson, 1996). The key characteristics of CLT include the incorporation of authentic material into the learning activity, the learner's personal experiences as learning resources, and the connection of in-class and out-of-class language tasks. Furthermore, form-focused activities (e.g., to correct linguistic errors) should occur not before but during or after learners' focus-on-meaning communicative tasks (i.e., to communicate meaning in the target language without worrying about the linguistic accuracy) (Widdowson, 1998).

Such a meaning-before-form perspective of language learning can be seen as "informalization of formal lear-

ning" (Boström, 2002). It advocates that teachers should facilitate the learning tasks without imposing a rigid structure on the tasks or intervene in students' learning from the beginning. According to Barron (2006), learners are more willing to tinker and experiment with things when external (e.g., teacher's) control is relaxed. Through such a process of tinkering, meanings are made. The learners may then (self-)organize learning into more structured inquiry. Thus, it is advisable to transform learning practice into the way that the students could be involved in social settings and consequently acquire tacit knowledge (Hung, Lee, & Lim, 2012).

Nevertheless, a common misconception among CLT practitioners is the over-focus on communicative practice, and that the mastery of form will take care of itself following these practices (Thompson, 1996). Meaning-before-form does not imply that form focus is irrelevant. Instead, a retrospective learning of the form triggered by learners' communicative outputs in language use should ensue. The discussion of the form should be explicit, but it should be the learners who are doing most of the discussing and peer coaching – with teachers' guidance.

2.2. Social media and (language) learning

Social media, the online communities designed with Web 2.0/3.0 technologies, emerge as a new social space in the past decade. They are increasingly used for supporting students' communicative and creative endeavours (Greenhow & Robelia, 2009). They support process-oriented learning by promoting interactions among learners, or among learners and their teacher. Learners and teacher can involve others in their thinking through the posted "information pieces" and thoughts (Ebner, Lienhardt, Rohs, & Meyer, 2010).

> Seamless Language Learning (SLL) (Kukulska-Hulme, 2015; Wong, Chai, & Aw, 2015) is an emerging model that emphasizes connecting language learning activities that occur in different learning spaces. The learning spaces that SLL connects typically encompass formal and informal learning spaces, individual and social spaces, as well as physical and digital spaces. The model seeks to facilitate social interactions in authentic learning contexts with social media in order to foster meaning making and idea sharing with the target language.

Social media afford situating of language learning in authentic community/social contexts beyond classroom. This is critical for authentic language learning where language is learned via socialization and utilization (Gee, 2004). Such learner content generation activities can be regarded as a cultural citizenship practice, where learners appropriate their daily encounters and into engaging learning experiences (Kukulska-Hulme, Traxler, & Pettit, 2007). Henceforth, we envisage that social media spaces could be used to design for a seamless integration between classroom-based teacher-facilitated learning and autonomous, socialized learning in the learners' daily life.

In the perspective of the social network-based learning community, the social media generated by the learners can be appropriated as artifacts for learning. The posting of a social media item does not necessarily mark the end of the artifact generation process (Wong & Looi, 2010). Instead, utilising the reply feature, the social media can be transformed into a (social) mediator for subsequent cycles of collective reflection and (re-)production (Lewis, Pea, & Rosen, 2010) or social meaning making (Wong, Chin, Tan, & Liu, 2010). Thus, the online artifacts should be open to scrutiny, critique or recontextualization, as different perspectives or personal experiences are put forward and as new ideas are emerged (Lewis & al., 2010).

Thus, in addressing the need of authentic, contextualized and socialized language learning, students' acts of social media creation can be seen as self-initiated learning tasks with the use of the target language that aims to share (on their everyday encounters or thoughts, etc.) with their peers– at this stage, meanings are privileged. This is followed by social interactions not only to enrich or challenge the 'meaning' of the artifact, but also for peer reviews/supports in improving the linguistic accuracy (form). In short, the age of social media offers unprecedented opportunities

for language educators to create learning environments for the pervasive trajectory of authentic, cross-contextual and socialized language learning.

2.3. Seamless learning and seamless language learning

With academia's growing frustration over decontextualized and "controlled" formal curricula in schools, there is rich literature arguing for transforming the general learning practice from compartmentalized to seamless (Hung & al., 2012). The argument for seamless learning is congruent to similar arguments made in the field of language learning (Levy & Kennedy, 2005).

Whereas earlier literature tended to dichotomize decontextualization and contextualization in characterizing formal and informal learning respectively (Edwards & Miller, 2007; Lave & Wenger, 1991), the seamless learning community offers an alternative perspective of "recontextualization" of skills, knowledge or meaning through the cross-spatial and cross-temporal learning trajectories (Wong, Chai, Aw, & King, 2015). For example, skills learned through a meaning incubated in-class are objectified as social artifacts. It may be reused in authentic settings, and later be dissected, enriched, repurposed and/or 'remixed' within the social learning spaces. Through such a cross-contextual trajectory, both the knowledge/skill/meaning to be learned and the learning process itself are constantly "recontextualized", leading to deep learning.

In turn, seamless learning may inform the redesign of language learning practice with the intention of foregrounding contextualization/authenticity, "tinkering" and socialization. Specifically, Little's (2007) trajectory of learning-application-reflection bridging and recontextualizations across time and contexts could be updated through social media. For example, language "learning" could take place in classroom, "application" could ensue in real-life contexts, and "reflection" could be carried out online. The resultant SLL learning journey is pervasive and open-ended, consisting of intertwined learning tasks/pathways, which could either be learner-initiated or teacher-facilitated.

2.4. Related works (and their limitations)

There are two emerging directions of employing social media/networks in language learning in recent years. The first direction concentrates on developing L2 communities of learners within social networks (Wei, 2012; Yunus, Salehi, & Chen, 2012). Such social spaces typically involve minimal teacher guidance or teacher-imposed structure, to promote greater learner autonomy and social authenticity. The common intention is to build environments where L2 learners dare to "tinker" with self-expressions and communication in the target language without teachers' excessive correction acts that often result in demotivating learners in language use (Freeman & Freeman, 2001). However, such approaches may suffer from the lack of experts' linguistic guidance and quality peer reviews which might result in learners not being able to accomplish linguistic accuracy (form) beyond fluency (meaning).

Meanwhile, studies in the other direction seek to leverage social media to mediate relatively structured, task-oriented language learning activities. Such activities are more formal learning-oriented despite extending the learning processes beyond classroom. Examples are learning projects where learners collaboratively perform knowledge management or create/revise contents in the target language with multi-user editors such as wiki (Felea & Stanca, 2010; Zou, 2016), or the applications of social media tools in process-oriented writing (e.g., Ansarimoghaddam, Tan, Yong, & Kasim, 2012; Wong, Chen, Chai, Chin, & Gao, 2011). Such writing approaches typically require learners to recurringly contemplate the theme, language, purpose for writing, and particularly with the readers in mind (Boas, 2011).

Notwithstanding, the learning activities in the second direction may give students a sense of producing "formal" linguistic artifacts despite a greater emphasis on the writing process. Such an approach of "informalizing formal writing (of FULL compositions/reports)" may not be conducive for L2 learners who are subject to "language threshold", i.e., they may not possess adequate L2 proficiency for their first language writing skills to be transferred to L2 writing (Williams, 2005). Instead, they often put in greater efforts in dealing with writing micro-skills such as grammar and vocabulary, and yet neglect the meaning-focused tasks including outlining and reviewing (Silva, 1993). This might undermine the power of authentic socialization and denying students' willingness in tinkering.

3. The SMILLA Model: "Social media as language learning artifacts"

To address the limitations of most of the existing social-media-mediated L2 learning strategies, we advocate for balanced (formal/informal learning, individual/social learning, meaning/form, language input/output activities, etc.) approaches in appropriating social media for developing L2 learners' communicative competencies. Informed by the

notion of SLL, we propose SMILLA (Social Media as Language Learning Artifacts) Framework as a guide for constructing a social media space with multiple learning pathways for L2 learners (figure 1). Specifically, SMILLA uses microblogs with reply feature (such as status updates on Facebook, tweets on twitters, etc.) to facilitate activities where language learning and application are interwoven.
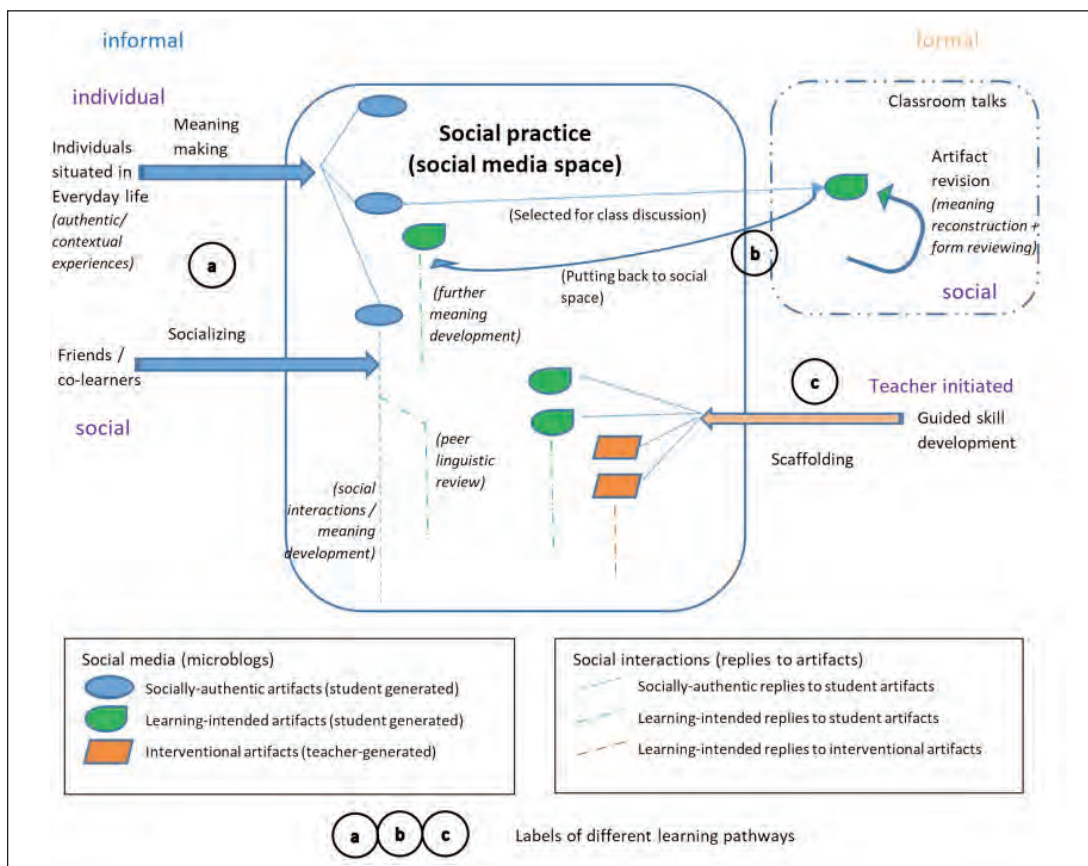

Figure 1. The SMILLA framework.

In the framework, we distinguish social media (learner artifacts) into three types: "socially-authentic artifacts", "learning-intended artifacts", and "interventional artifacts". Socially-authentic artifacts are artifacts created by learners in a self-initiated manner – microblog items reflecting their everyday life or thoughts, not triggered by any specific teacher instruction. Such artifacts are "socially-authentic" because they are created with authors' personal "authentic" desires to share their lives and socialize within the community. These artifacts may trigger "socially-authentic replies", ensuing a trajectory of individual-to-social meaning making (i.e., learning pathway (a) in figure 1). However, these artifacts may also trigger peer feedback on its linguistic form (i.e., a form of "learning-intended replies").

In contrast, learning-intended artifacts are either created by learners as per teachers' instructions for specific learning purposes (pathway (c) in figure 1). In addition, some socially-authentic artifacts may later be appropriated by the teachers and transformed into learning-intended artifacts (pathway (b)). For example, a teacher may select a set of socially-authentic artifacts for classroom talks or small-group discussions to solicit peer feedback on each artifact. Based on the feedback, the author of an artifact will be encouraged to edit/revise/extend his/her work, which will then be 'put back' to the social space for further meaning development. It is important to note that such in-class artifact review activities should be conducted in a non-threatening manner in order not to jeopardize the lower stakes "atmosphere" of the social media space.

Finally, interventional artifacts are teacher-created microblog items to initiate specific learning activities that require online social participation (pathway c). Similar to 'learning-intended artifacts', such artifacts are meant for

enactment of strategies to assist the learners in building specific skills. The learners' replies to these types of artifacts are all categorized under "learning-intended replies".

Under the SLL perspective, all the artifact creation and socializing activities as depicted in the framework are neither totally formal- nor completely informal-oriented. They constitute an intertwining of both types of learning with some artifacts leaning towards being informal and others more towards the formal aspect. We envisage that a SMILLA-style social media space would consist of all three types of student artifacts. Henceforth, the social media space becomes a mediator for connecting formal and informal learning, while social media items become mediators for individual and social learning (i.e., individual application of the target language through self-creation of social media, and subsequent online peer interactions and linguistic reviews). An ideal situation is that a majority of the social media are socially-authentic artifacts as they are supposedly the products of self-directed learning and perhaps an indicator of the learners' enthusiasm in social networking with the target language. Furthermore, such artifacts may become rich resources for follow-up learning activities and a means of formative assessment.

4. A case to illustrate the SMILLA framework: MyCLOUD
4.1. The intervention design

MyCLOUD is a mobile-assisted learning environment targeting for primary school Chinese L2 students in Singapore. A cloud-based platform with both web and mobile app interfaces was developed for the purpose. The platform connects in-class language learning with out-of-class language application and reflection processes. The platform consists of the following key modules:

• My e-Textbook: This is a digitized version of the Chinese Language textbook. Within the e-Textbook, students may select and store unfamiliar words that they encounter in the Mictionary (see below).

• Mictionary: This is a personalized mobile dictionary for students to store unfamiliar words that they have learned from the e-textbook or incidentally (i.e., in their daily life), and check their pronunciations and meanings. Furthermore, Mictionary requires the students to self-create additional content in the form of social media (i.e., learning-intended artifacts) that utilize the target words. The social media uploaded to Mictionary will automatically be replicated in MyCLOUDNet (see below), thus connecting individual and social learning efforts, as well as bridging formal and informal learning spaces.

• MyCLOUDNet: This is a social media space where students may autonomously create and share social media (i.e., the socially-authentic artifacts) in Chinese, apart from the social media duplicated from Mictionary. Peer casual interactions (socially-authentic replies) or linguistic reviews (learning-intended replies) may then be carried out; the former for enriching the meaning and the latter for assisting the students in correcting their linguistic errors.

A 13-month empirical study was conducted in a neighbourhood elementary school and involved 37 students from a 3rd grade (9-year-old) class. Each student was equipped with a tablet, 3G broadband subscription and a MyCLOUD platform account to support one's SLL journey. During the intervention period, the researchers met with
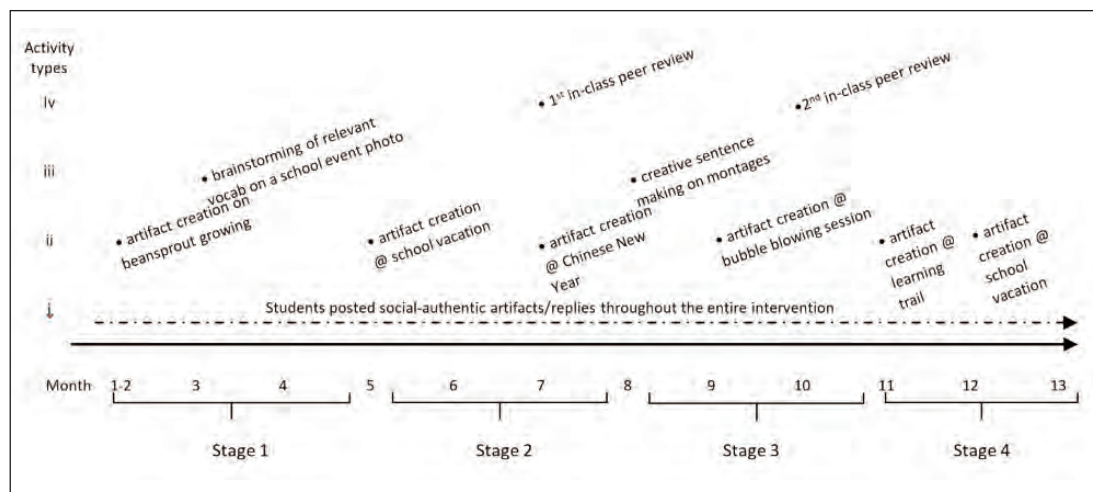

Figure 2. The timeline of the MyCLOUD intervention.

the Chinese teacher of the class, Sharon (a pseudonym), on a fortnightly basis to review lessons conducted and students' learning progress, as well as to co-design subsequent lessons. In this way, the core elements of the SMILLA framework were gradually and systematically enacted in the Chinese class throughout the 13-month period as four major types of activities (figure 2):

• Type I: Promotion of creating socially-authentic artifacts and making socially-authentic replies (attuning to pathway a in figure 1): Throughout the entire intervention period, Sharon encouraged the students to post social media about their everyday life experiences at their own convenience, and reply to peers' postings as though they were carrying out authentic social networking. Nevertheless, Sharon did not make such after-school artifact creation activities mandatory. Neither did she use the artifacts for formal assessments, in order not to overly formalize the informal-oriented learning tasks. To cultivate such a habit-of-mind among the students in the early stage, instead Sharon employed 'softer' strategies as described in the next paragraph.

• Type II: Tapping on authentic occasions or designing contexts to elicit learning-intended artifacts (pathway c): Sharon had opportunistically engineered special occasions in order to encourage students to create social media. These included two month-long school vacations in the 5th and the 11th month and the Chinese New Year holiday in the 7th month – the students were recommended to use contextually relevant vocabulary beforehand and at the same time they were open to share their personal holiday experiences in their social media with or without using the target words. In addition, Sharon designed contexts such as encouraging the students to plant beansprouts at home and share the progress by social media (the 2nd month), facilitating an in-class bubble blowing session and instructing the students to take photos and write a paragraph that utilized some recently learned complex sentence patterns with connectors (the 9th month), and an outdoor learning trail at a historical site with relevant social media being created on-site or afterward (the 10th month).

• Type III: Teacher-created learning-intended artifacts as the mediators of strategies to nurture specific skills (pathway c): For example, understanding that most students tended to compose literal and simple text descriptions to the photos they took for social media creation, Sharon designed activities to elevate their creative ie. making abilities. In the 3rd month, Sharon posted a context-rich photo taken during the school's sports' day and invited the students to brainstorm and propose words/idioms relevant to the context. In the 8th month, Sharon posted montages of two photos with supposedly unrelated contexts onto MyCLOUDNet and invited the students to compose sentences (with the reply feature) that connect the photo contexts (figure 3). After one student had composed a sentence on a photomontage, her/his peers may rephrase, expand or even re-contextualize the same sentence.

Student A: 小明和小丽把报纸收拾好，然后放进货车。 (Melvin and Li are tidying up the newspaper and then putting it into the van.)
Student B: 妈妈和弟弟在帮忙收拾报纸。他们收拾好了，就把报纸放在车子里。 (Mum and little brother are tidying up the newspaper. After that, they put the newspaper into the van.) *(rephrasing Student A's sentence)*
Student C: 这个家庭因为被坏人给骗了，没有钱，所以每天去捡旧报纸，放进货车里。 (This family was conned and is now penniless. Therefore, they have to tidy up the newspaper every day and put it into the van.) *(expanding the meaning of earlier sentences)*
Student D: 这辆货车不小心撞倒了草地上的一堆报纸。好心的妈妈和儿子在帮忙收拾报纸。 (The van accidentally knocked down a stack of newspaper on the grass field. The kind-hearted mother and son helped to tidy up the newspaper.) *(re-contextualizing)*

Figure 3. A teacher-created learning-intended artifact to facilitate "sentence composing relay" activity.

Type IV: Selection of socially-authentic artifacts for small-group peer reviews (pathway b): Such teacher-facilitated activities were conducted twice to nurture the students' abilities in performing peer reviews in MyCLOUDNet

after school. The first activity took place in the 7th month where Sharon picked several socially-authentic artifacts and instructed the students to correct errors in vocabulary usage and grammar within small-groups. The second activity was carried out in the 10th month with a set of longer artifacts being assigned to student groups. The students were required to review the artifacts not only in the aspects of vocabulary and grammar, but also richness of the context as depicted in the text, and the contextual alignment between the text and the photo. Apart from building the students' peer-review skills, the activities were also for promoting their awareness in reviewing artifacts in these criteria in the future. In both activities, the selected socially-authentic artifacts were transformed into learning-intended artifacts. The authors of these artifacts were then encouraged to revise the texts with respect to the peer comments.

4.2. Data analysis and findings

As this paper is submitted as a conceptual paper and due to the space constraint, we will not explain the full research method and empirical findings but only essential outcomes to demonstrate the effectiveness of the model. Essentially, we split the entire 13-month intervention into four stages (three months per stage, except for stage 1 with four months) and performed analysis on the social media created across the stages to find out the trend of the students' activities on MyCloud. Consequently, we determined the following statistical measurements as the indicators of the learning effects:

• Mean artifact score: All student-generated artifacts were scored by two researchers in the scale of 1-5 with a rubric co-developed by Sharon and the researchers to assess the students in task completion, expression and linguistic accuracy (Liu, Wong, Toh, & Li, 2015). The mean scores of all the student artifacts were computed stage-by-stage to gauge their general artifact qualities.

• Mean length of utterances (MLU): MLU is calculated by dividing the number of words by the number of utterances (i.e., the accumulated number of full sentences in the student artifacts). It is deemed as an appropriate indicator of linguistic maturation (Bennett-Kastor, 1988). Like mean artifact score, MLU is another indicator of the students' artifact qualities (and also an indicator of the general length of their works).

• Numbers of socially-authentic artifacts and learning intended artifacts: We classified the student artifacts into the two stated categories. This enabled us to trace the changes in the amounts of the two categories of artifacts across the four stages, which were then cross-checked with the new intervention elements being introduced at different time points. Thus, the statistics can be treated as indicators of the effects of such intervention elements (see below for more details).

• Number of socially-authentic replies and learning-intended replies: Similarly, we classified the student replies into the two stated categories and analyzed the code-and-count statistics in the same way as described in the previous bullet point.

Table 1. The statistics of student activities in MyCloud across four stages					
	Stage 1	Stage 2	Stage 3	Stage 4	Total / Overall
Number of socially-authentic artifacts (type I) in bracket –number of socially–authentic artifacts being selected as learning-intended artifacts (type IV)	33 (0)	105 (6)	362 (16)	307 (0)	807 (24)
Number of student-created learning-intended artifacts (type II)	44	46	81	65	236
Total number of student-created artifacts	77	151	443	372	1043
Mean length of utterances	7.1	13.0	13.2	17.8	14.7
Mean artifact score	3.11	3.01	3.20	3.60	3.28
Number of artifacts with replies (in bracket: % of all artifacts)	4 (0.05%)	14 (0.09%)	215 (48.5%)	290 (78.0%)	523 (50.1%)
Number of socially-authentic replies	7	30	956	645	1638
Number of learning-intended replies (mostly peer reviews – related to type IV)	0	3	79	128	210
Total number of replies	7	33	1035	773	1848

Table 1 depicts the descriptive statistics of the stage-by-stage SMILLA activities. Indeed, there were significant improvements in all the tabulated aspects in table 1 in the last two stages as compared to the first two stages. There were slight depletions in number of artifacts and replies in stage 4 as compared to stage 3, mainly due to the month-long school holiday in the 11th month. However, the growths in the artefact quality (in terms of mean artefact score), the students' willingness in participating in the interactions triggered by the artifacts (in terms of the number and percentage of artifacts with replies) and peer reviews (in terms of number of learning-intended replies) in stage 4 as compared to stage 3 are prominent.

Figure 4. Four socially-authentic artifacts created by the same students in different stages (with English translations).

Figure 4 features exemplifying socially-authentic artifacts created by the same student across four stages, which may provide some clues on the development in the dynamics of the social media space. At the early stages, the students were new to social media and typically treated the artifact creation activities as a multimodal form of sentence making exercises. Thus, they tended to post artifacts in simple sentences and with dull contexts (with the mean length of utterances of 7.1 in stage 1; e.g., the Stage 1 artifact in figure 4). Furthermore, they did not bother to reply to their peers' postings (only 40 replies to 18 out of the 228 artifacts in the first two stages) – thus, the level of social interactions was very low. However, Sharon did not rush them for producing quality and rich artifacts. Instead, she promoted informal, low-stakes participation and let the students "tinker" with the use of Chinese without "fear" (i.e., meaning focus type-ii activities; e.g., the beansprout growing activity at home which resulted in most of the 44 learning-intended artifacts being created in stage 1).

Over the time, more students developed interest in sharing their real-life encounters out-of-school, resulting in a significant increase in the number of socially-authentic artifacts (i.e., 362 and 307 of such artifacts in stages 3 and 4 respectively). As time went by, the student artifacts were accumulating, and Sharon began to introduce type III and type IV activities to elevate the students' linguistic, peer review and meaning extending skills (foci on both meaning and form). These had resulted in better quality, longer and contextually-richer artifacts being created (with the mean artifact score of 3.6 and mean length of utterances of 17.8 in stage 4 –e.g., the Stage 4 artifact in figure 4), as well as active socially-authentic interactions and peer reviews in the last two stages (with 1631 socially-authentic replies, and 181 peer reviews out of 207 learning-intended replies). Figure 5 features an example of student interaction triggered by a socially-authentic artifact posted in the 9th month (stage 3), with an interplay of socially-authentic replies and learning-intended replies.

这是红茶。我随然没有喝过，可是闻起来很香，如果我有机会尝尝，我就会很高兴。
(This is black tea. *Through* I have never had it before, it smells good. If I have the chance to taste it, I will be very happy.) *[SA artifact]*

Student A: 写的很完整。 (What you have written is quite comprehensive.) *[LI reply – peer review]*
Student B: 如果你要尝的话，我可以给你我的茶包。 (If you want to taste it, I can give you my tea bag.) *[SA reply]*
Author: 不可以。我的妈妈说我不可以喝茶。因为如果我喝，我不可以睡觉。因为茶有 caffeine (No. My mom said I can't drink tea. If I drink it, I can't sleep. This is because tea contains *caffeine*.) *[SA reply]*
Student C: Caffeine 华文叫"咖啡因"。 ("Caffeine" is 咖啡因 in Chinese.) *[LI reply – translation]*
Student D: 不是"随然"，是"虽然"。 (It's not "through", but "though".) *[LI reply – correcting the word used in the original SA artifact]*
Student B: 茶没有咖啡因，咖啡才有咖啡因。 (Tea does not have caffeine. Only coffee has.) *[SA reply]*
Student E: 我也有红茶。 (I have black tea too.) *[SA reply]*
Student B: 当然啦！你是我的姐姐，怎么会没有呢？ (Of course! [Because] You are my sister.) *[SA reply – Student B and Student E are twin sisters.]*

Figure 5. An example of student interaction in the 8th month (SA = socially-authentic; LI = learning-intended).

The two in-class peer review activities carried out in the 7th and 10th months (type IV) had also resulted in more peer review-type learning-intended replies being posted. After the first activity, the students began to perform peer reviews (as seen in Stage 2 and 3), albeit limited to low-level amendments of punctuation marks and vocabulary, and translations from scattered English words to Chinese. During the second activity (took place in the last month of Stage 3), Sharon placed a greater emphasis on fostering the students' abilities in peer-reviewing grammar, rephrasing and expanding the contexts. Thus, online reviews on these aspects began to emerge in Stage 4, as 34 out of the 128 learning-intended replies in this stage belong to these categories. We argue that such peer review activities have rendered positive influence on the students' future artifact creation activities, as they would have become more aware of, and tried to avoid, these potential shortfalls in composing new texts.

5. Conclusion

In the past three decades, we have been witnessing paradigm shifts of language learning approaches from behaviorism and content mastery to contextualization and communication, and the more recent trend of hybridizing content, context and socialization where language learning and language application are interwoven, particularly in socially authentic settings. We see that the emerging paradigm of seamless language learning may constitute an overarching design principle to weave content, context and socialization, and the learning, application and reflection tasks together to form a holistic, cross-temporal and cross-contextual journey of L2 development for every learner. Social media, particularly microblogging, are appropriate mediators to bridge such multi-faceted learning efforts. Thus, in this paper, we proposed the SMILLA framework as a set of interweaving design/learning strategies for facilitation of multiple language learning pathways. The relationship between language learning and language use is no longer causal; instead, it is cyclical and reciprocal. We presented the design of MyCLOUD as a demonstration of how SMILLA can be operationalized. The results suggest the potential effectiveness of SMILLA-informed learning design in gradually enculturating L2 learners to become active L2 users in day-to-day socially-authentic settings, as well as learners who are able to self-reflect the forms and meaning of their language use with little teacher support.

Nevertheless, we acknowledge the limitation of the MyCLOUD study which was specifically applied to Chinese L2 primary school students in Singapore with a proprietary platform. Another caveat of implementing MyCLOUD is lying in the teachers' understanding in the notion of seamless language learning and ability in systematically designing and enacting such multifaceted learning activities over a long period of time. As such, to prove the generalizability of the SMILLA framework, more studies should be carried out with learners of other languages of different age groups, under different socio-cultural conditions, and perhaps with the use of more generally accessible platforms such as Facebook or Twitter. There is also a need to develop a corresponding teachers' professional development program to ensure their efficacious implementation of SMILLA-informed language learning.

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