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Wired Together: Collaborative Problem-Based Language Learning In an Online Forum

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Abstract

A descriptive study was conducted on the use of a collaborative Problem-Based Learning activity in an undergraduate ESL course on language and Information Technology in a Malaysian university. An asynchronous online conferencing forum was set up as the medium of interaction for the students to engage in the activity over a period of three weeks. The findings show that the PBL activity offered both linguistic and affective benefits in the ESL class. It stimulated communication and generated substantial discussion on a variety of topics, resulting in the use of English for academic and social interaction. It raised the students' awareness of a real audience for the language task they were working on and provided a meaningful context within which language learning, including the exploration of grammatical rules, took place. The PBL activity also promoted self-directed learning and a sense of ownership of the learning activities which are important to the development of learner autonomy. The online domain was found to enhance both the PBL process itself and the benefits it offered to language learning. The accessibility and asynchronicity of the forum encouraged and eased interaction, and provided a space for the maintenance of group spirit and participation of more timid students. The challenges faced by ESL teachers in using such a PBL approach include the need to be facilitators more than instructors, and to ensure that the interaction among the students is in English.

Introduction

Research on second language acquisition has long recognized that language is best learnt through natural, contextualised use, that is, when it is utilised to perform authentic tasks. This belief has led to the development of a variety of task-based, project-based and content-based approaches in which students are given the opportunity to learn the target language by using it, rather than being presented with predetermined language structures and then practicing them (e.g., Alan & Stoller, 2005; Ellis, 2003; Garner & Borg, 2005; Lee, 2002; Rodgers, 2006; Short, Harste & Burke, 1996; Skehan, 1998; Willis, 1996). These approaches align with earlier seminal works by Brown, Collins & Duguid (1989) and Lave and Wenger (1991) which provided a strong rationale for language instruction to be *anchored* or 'situated' in the context of *authentic* problems or tasks that allow learners to make use of the kinds of strategies they would use in real life.

One approach that can allow learners to explore and assess issues while working on authentic, real-life tasks is Problem-Based Learning (PBL). In the early 1970s, PBL was created as an alternative instructional method to prepare medical students for the real-world problems of medicine by giving them authentic medical problems to solve rather than making them learn through traditional lectures on the basic sciences and on the different organ systems which were taught out of context. These problems were based on real-life medical cases and, therefore, were more clinically applicable and immediate. The students were divided into teams and presented with authentic medical problems to solve. They were not left to work completely alone, but rather they were assigned a medical practitioner who would act as facilitator. It was argued that this method of having the students tackle puzzling situations would better encourage them to become more independent and creative in their own learning (Barrows, 1986). This follows John Dewey's (1938) argument that schooling should be an active endeavour that has as its goal creating independent, life-long learners.

Duffy and Cunningham (1997, p. 190) believe that since PBL is an approach "founded on the goal of engaging and supporting the learner in activities that reflect the demands of professional practice" by promoting critical thinking in the content domain, it need not be restricted to medical education. Rather, PBL can and should be used in other domains, including language learning. By getting learners to work on authentic, real-life problems, the language activity in the classroom simulates language activity in real-life. PBL thus situates language learning in the real world, encouraging the transfer of skills learned in the classroom to life outside of the classroom (James, 2006), and addressing the need to bridge the gap between language use in the real world and the "fake" world of school (Dyson, 1993).

Problem-Based Approach to Language Learning

PBL is very much aligned with the constructivist view of learning. Constructivist theorists emphasise a need to change the language learning and instruction process from one in which a teacher transmits knowledge to learners, to an approach in which learners

become actively involved in the construction of knowledge (e.g., Scardamalia and Bereiter, 1996; Brooks and Brooks, 1993) and develop into more autonomous learners (James, 2006). A basic assumption of the constructivist position is that learners cannot learn to engage in effective knowledge construction activities simply by being told new information, but by being given repeated opportunities to engage in in-depth exploration, assessment and revision of their ideas over extended periods of time.

Constructivism further assumes that the construction of knowledge is a social activity. This assumption suggests that language development in individual learners takes place when they interact with other language users in the target language, particularly when learners interact within contexts that involve negotiation of meaning (Moss & Ross-Feldman, 2003; Nakahama, Tyler, & Van Lier, 2001). The collaborative nature of problem-solving in PBL supports this social view of learning. According to Englander (2002), 'real-life' problem-solving activities give students the opportunity to collaborate and generate dialogue. She argues that students need to talk in order to get information they want, reach a decision or solve a problem. By engaging in real-life communication, students forge a connection between whatever they are doing in class and what goes on outside, thus minimizing students' anxiety and maximizing students' motivation and interest. Hence, a constructivist approach challenges teachers to design activities in which language learners can engage in collaborative problem solving.

The electronic medium can be of great value in meeting these basic conditions for a language learning approach that involves interaction and negotiation. An online forum that enables synchronous or asynchronous conferencing can be easily designed for a class – or a section of a class – to enable frequent and borderless communication among learners, at least in written form. Many sites offer the facilities to set up such online environments free of charge, and with some technical assistance, language teachers can set up online forums that can support student interaction as the students work on authentic tasks.

One such forum was set up for the students of an ESL undergraduate course on language and Information Technology in a Malaysian university. The asynchronous online conferencing environment was designed specifically for a PBL unit that was being incorporated into the course for the first time. Over a period of three weeks, the students would engage in collaborative problem-solving and use the online forum as the medium of interaction. The PBL activity was included in the course to (i) simulate for the learners the experience of collaborating online with others in geographically distant locations, and (ii) anchor the students' language use in an authentic task.

Although PBL has been widely touted as an approach that can promote interaction among students, most PBL activity is carried out in face-to-face (FTF) settings. The exploratory unit in this undergraduate course had the added dimension of the online environment in which the activity would take place. Thus, in addition to gaining greater insights into the value of PBL activity to language learning, the researchers, one of whom was also the course instructor, also hoped to see how the online conferencing facility might support the learning activity. A study was thus conducted on the interactions and experiences of

the ESL learners participating in the online activity. The study focused on examining and describing

- (i) how the collaborative PBL activity promoted language use and learning for ESL learners, and
- (ii) how the online environment supported the activity.

This paper presents the findings of the descriptive study.

Set-up of the PBL Activity

The exploratory attempt at using a PBL approach was carried out with 78 undergraduates enrolled in a Bachelor's programme in English Language Studies in a Malaysian university. A three-week unit based on the PBL method constituted part of the course on language and Information Technology.

The activity was designed to meet the need for learners to acquire cognitive flexibility in language learning. It had to support the learning conditions necessary to bring about (i) reasoning, critical thinking and active involvement, and (ii) contextualized use of language which emphasizes the process rather than merely the product of language learning. These conditions include:

- Setting up complex, ill-structured or open-ended tasks that do not have clear-cut, absolute answers (Spiro et al., 1991; Perkins, 1991) or fixed solutions (Ertmer, et al., 2003).
- Setting up authentic tasks, that is, tasks which incorporate authentic cognitive activity (Duffy & Savery, 1994) and communication with actual audiences (Dyson, 1993) and practitioners.
- Encouraging reflective behavior (Cunningham, 1987) through the use of running records such as writing journals.
- Providing opportunities for social negotiation (Dyson, 1993; Short & Burke, 1991; Short, Harste and Burke, 1996) so that learners can test the viability of their answers.
- Allowing assessment of language performance through the use of multiple sign systems and modes of presentation, such as exhibitions, demonstrations, or coherent pieces of discourse, instead of restricting assessment to paper-and-pencil testing of decontextualized answers (Mabry, 1992; Archbald & Newmann, 1992; Wiggins, 1993).

The Problems

To meet these conditions, the teacher formulated three authentic and ill-structured problems, as follows:

The university has imposed a dress code on students. Many among you have expressed dissatisfaction with some of the rules, finding them impractical and unnecessary. What can you do?

In an effort to curb the rising number of accidents involving motorcyclists within the campus, the university is considering a tight restriction on the use of cars and motorcycles by students. Many of you see this proposal as a potential problem. How can you resolve it?

The Faculty is considering turning the Student Concourse into lecture rooms to meet the shortage of rooms. That action would pose a problem since the Concourse is where many of you meet to discuss, read and wait in between classes. How would you address this problem?

The given problems are considered authentic and ill-structured for two reasons. First, they were problems that learners perceived as real and personally relevant (Savery & Duffy, 1996), that is, they related directly to the students' current concerns and perturbations. The problems stated above were in fact based on developments that were taking place in the university at the time of the activity. Hence, the participants could establish the credibility of the problem and claim ownership of it as well as of the problem-solving process. They could also see the need and the context for using problem-solving and collaboration, and for purposeful communication with actual audiences. Second, the problems were open to multiple alternative 'solutions' or 'resolutions'. Real-life problems are often similarly complex and ill-structured. ESL lessons at primary, secondary and even tertiary levels frequently direct learners to yield a specific product (such as an essay on a specified topic, or a correctly completed grammar exercise), but in this PBL activity, the students were allowed to choose and develop a product that they judged to be reasonable and appropriate. This allowance shifted the focus from an effort to get at 'correct' answers to the inquiry process which involved critical thinking and substantial use of language in articulating opinions, doubts, queries, opinions, arguments and suggestions, and in negotiating possible viable solutions.

The PBL Setting and Process

The students were divided into small groups comprising four members per group. The small group setting fosters the development of a sense of a "learning community" (Collins, 1992) among participants who need to learn to work in a problem-solving capacity. The small group process also makes it easier for the facilitator to focus on individual participants, to allow for more opportunity for idea contributions, and to draw the more timid learners out in discussion.

To facilitate and document the learning and problem-solving process, a web-based discussion forum was set up which allowed the teacher and students to access the online forum at any time and engage in asynchronous (written) communication. There was a common space on the forum where the teacher could post general notices and instructions. In addition, each small group was given its own online space on the forum in

which to conduct discussions. This private space was accessible only to the group members and the teacher.

The students were told from the start that *all* discussion on these problems had to be done via the forum and not in FTF meetings. At the end of the activity, the students were found to have adhered well to this instruction because they knew that the teacher would be monitoring the whole process and would be aware of lapses in the development of the solutions or resolutions to the problems.)

Once the forum had been set up, prior to the start of the three-week unit, the students were given a one-hour hands-on tutorial on accessing and using the forum. At the start of the three-week activity, each group was assigned one of the ill-structured problems and asked to work on developing a viable solution. The groups were reminded that there did not need to be one 'correct' solution but possible viable solutions. The teacher posted the problem in the individual group spaces so that each group was not aware of what other groups were working on or how they were approaching the problem. At the end of the unit, the groups had to post their solutions, or possible means of reaching a solution, in a common space in the forum where they could then view each other's ideas.

The PBL process was initiated following guidelines for presenting problems and ground rules for discussions in the PBL process (Mardziah H. Abdullah, 2003). Each problem was presented and "brought home" to the participants so that they saw the relevance of the issue. For example, the teacher directed the students' attention to posters describing the required dress code for male and female students found at various places in the university. The teacher (who acted as a facilitator) also prompted discussion through questions such as: *What assumptions do you think administrators make about attire and behaviour that prompted the dress code? Do you agree with these assumptions? What impact do these rules have on your movements as a student? What other aspects of student life could the rules impact?* One of the ground rules established for discussion was that participants had to take responsibility for learning and ask questions if something was not understood.

Teacher as Facilitator

In this PBL setting, the teacher decentred his or her role as the source of knowledge and became instead a facilitator and cognitive coach who aided and provided scaffolding for the learners. As a cognitive coach, the teacher becomes more of a model who supports the students' learning process (Duffy & Cunningham, 1997). This role is twofold in purpose: (a) to model higher order thinking skills by asking the students probing questions, and (b) to challenge their thinking (Barrows, 1992) at the same time, so that the learners eventually think through problems themselves. As suggested by Duffy & Savery (1994, p.12), the teacher asked the students occasional questions that made them reflect on the learning process itself, such as: "Why?", "What do you mean?", and "How do you know that is true?" Instead of posing content-laden questions focused only on the product, the process-focused questions challenged the students' reasoning and helped

them to consider very carefully each step they were taking in their inquiry. Eventually, the learners took over the process of asking themselves the same kind of questions.

In short, the teacher acted as a mediator whose role was to help students achieve a satisfying group result (Wiersema, 2000). Very occasional linguistic or technical assistance was given or asked, and throughout the activity, the teacher was careful to refrain from controlling or directing the group's efforts to address the problem.

Written Interaction as Data

Data for the descriptive study were obtained from the discussions of the 78 students enrolled in the course. The online forum made it possible for the researcher to capture and document all the interactions that took place over three weeks. It is important to note that the students were not aware that their interactions would be studied until after the activity had ended, so that their interactions were not affected by that knowledge. In addition, the text of the interactions was used as data only after obtaining the students' agreement and their anonymity had been assured. All 78 consented to their interactions being analysed. Thus, the discussions from 19 groups were used as data.

Some of the students had exchanged email with university personnel and friends outside the university on matters related to the PBL activity (the purpose of these exchanges is explained in the following section). These email messages were electronically carbon-copied to the teacher and were thus available as data.

Language Learning and Development in a PBL Activity

An examination of the text of the interactions shows that the ESL learners were fully involved in the PBL activity, apparently without being conscious that the activity was designed partly for the purpose of developing their language skills. The PBL activity promoted language learning and development by

- (i) providing opportunities for authentic and near-authentic communication, and
- (ii) creating context, ownership and interest in language learning and development

Opportunities for authentic communication

Second language acquisition researchers and practitioners recognize and believe that the more learners interact in the target language, the more they will develop in that language. In that respect, a PBL activity can contribute a great deal to language development.

In this study, the PBL activity generated authentic, purposeful interaction among the members of each of the 19 groups. During the three weeks of discussions, the members of each group logged into the forum to post messages at various times of the day (and even at night) from their own homes, computer labs or cyber cafes. The students did not log in every day, but at the end of the unit, each group had made an average of 256

message postings (the highest number of postings being 288 and the lowest 197). This total meant that the average number of messages posted per student over the three weeks was 64, and each group had posted 12 to 13 messages per day on the average. The length of each message posting ranged from as few as 5 words (at the initial stages of the activity where the students were trying out the forum) to as many as 1,206 words (when the groups were constructing their proposed solutions to the problems).

In the first week of the online activity, most of the students spent the first one to two days exploring the forum space and posting functions. Despite having already been assigned their problem, their initial interactions were centred on social talk such and topics unrelated to the problems such as when and where group members would be spending their mid-semester breaks and their sentiments about collaborating online (“*This is cool!*”) Despite the light tone of their online conversations then at this early stage, group dynamics and a collaborative spirit could already be seen to form as they navigated through the forum. Questions, pointers and comments such as “*Click which button?*”, “*Bottom – under [the] messages*” and “*Eh, don’t start so many new topics, use this one enough*” were commonplace.

After the initial exploration of the forum, the groups quickly directed their interactions towards the problem-based task. Following the model proposed by Savery and Duffy (1994), the teacher/facilitator guided the students to begin the PBL process by (i) generating working hypotheses or ideas (*What can we do?*) that would later be evaluated for their viability and feasibility, (ii) identifying factual knowledge (*What do we know?*), that is, learners’ prior knowledge that may be applied to help evaluate the ideas generated, and (iii) learning issues (*What do we need to know?*), which refer to topics or issues that need further investigation. A consideration of these issues led to a great deal of discussion. At this stage of the activity, two groups demonstrated rather sluggish interaction and the teacher had to prompt them with questions to generate more active discussion.

One of the reasons for the substantial amount of interaction that went on within the working groups was that the participants began the problem ‘cold’, that is, they did not know what the problem would be until it was presented; thus, they did not have the chance to bring in the expertise of authorities into the problem-solving process. As stated earlier, the teacher, too, refrained from being an ‘expert’. Consequently, the group members were thoroughly engaged in discussing, developing ideas, challenging each other’s thinking and reasoning, testing their own understandings of learning issues against those of their peers, and in short, thinking through the problem rather than attempting to come up with a quick solution to the problem posed.

Because of the ill-structured, open-ended nature of the problems, the groups explored, evaluated and finally proposed a variety of solutions to the problems that they thought to be viable. For example, two groups that worked on the potential restriction on the use of cars and motorcycles by students proposed (i) a partial ban imposed only on first and second-year undergraduates and (ii) an improved bus service that would ply the campus routes more frequently. Three groups that were assigned the dress code problem proposed

alternative dress code requirements that would be less uncomfortable and what they saw to be more practical for both male and female students. In some cases, what the groups eventually produced were not solutions *per se*, but means of achieving possible resolutions. (In these latter situations, the groups were assured that their 'products' were acceptable as far as the course requirements were concerned because it was their participation and contribution during the PBL process that was important.) These groups developed, in response to the problems (i) letters of appeal or complaint, and petitions meant to be forwarded to relevant authorities, and (ii) questionnaires and interview questions to be administered as part of a survey to obtain public (student) opinion on the various issues, the responses from which would be used as supporting evidence for the appeals, complaints or petitions. One group designed and developed an electronic poll which, if it had had been allowed, could have been uploaded for the purpose of garnering public opinion against the closing down of the Student Concourse. The students were told that they were not required to send out the actual documents if they did not wish to, but two groups did carry out a survey with the questionnaires they had developed and reported the results in their online spaces.

The process of developing all the proposed solutions or strategies required substantial language activity in the form of discussion, negotiation and research. The students' ideas required them to engage in authentic – or near-authentic – communication with each other as well as university personnel as they sought information on whom they should consult or write to. University personnel included staff of the Registrar, Students' Affairs Division and Faculty management. Aside from making email enquiries within the university, three groups also gathered information on policies practised by other local universities. Such information was obtained from acquaintances in those universities or from the university websites.

The communication with university personnel and other acquaintances outside the group is considered *near*-authentic rather than truly so for this reason: although the students interacted with each other in English in the online forum, their communication with university personnel would have been, under usual circumstances, in Malay. To keep the communication in English as far as possible, students were asked to make their enquiries in English via email instead of via telephone (since the university personnel staff are required to respond to all enquiries in both languages), and the teacher received an electronic carbon copy of all such email enquiries sent by students. As communication in English is encouraged within the university setting, the students did not see this as a big problem. Copies of the email communication show that the replies and information sent in response to the students' queries in English were also composed in English (with a sprinkling of Malay words), but the students themselves always wrote in English.

The online interactions showed that the PBL activity had managed to generate discussions among the group members on an array of issues directly related to the problems, ranging from academic aspects such as the appropriateness of content in a petition to practical matters such as the number of photocopies the group should make. The discussions in one group raised the ethical issue of whether the group would be considered to have plagiarised items from a questionnaire found on the Internet in one

case. Four other groups touched on religious matters pertaining to the issue of attire. There were also a few requests for clarification or help with technical problems.

The data also showed that communication had taken place to establish and maintain group dynamics that were so important to the collaborative effort. In all but one of the groups, the members had very early on discussed and chosen a group leader who took on the responsibility of monitoring the group's efforts and progress. For the first few days, most of the groups had struggled with the problem, not knowing how to proceed, but by the end of the first week, the group members were already volunteering to source information. The leaders often prompted further discussion, maintained the momentum of the activity and coordinated the information from individual group members. The one group that did not explicitly appoint a leader seemed to suffer from a lack of cohesion at first, as illustrated by a frustrated "*Who is doing that? I or [name of group member] or everybody?*" posted by one of the members. The teacher stepped in then to remind the group members about the importance of identifying their learning issues and communicating their opinions more clearly. Subsequently, the group managed to share ideas and information in a more organized way and put together a letter of appeal as well.

In summary, the collaborative PBL activity had successfully generated much interaction among the ESL learners, albeit to varying degrees. The ill-structured problems served as stimuli for critical thinking and discussion by opening up possibilities for alternative resolutions and requiring the participants to assess their ideas and propositions. From the perspective of the language teacher, the outcome of the activity was not only the documents or solutions that the groups proposed, but also the amount of communication in English that took place in a purposeful and contextualised manner.

Context, Ownership and Interest in Language Learning and Development

In addition to generating communication in English, the PBL activity was found to have provided a context within which the ESL students were – consciously or unconsciously – developing their knowledge and use of English, particularly with respect to reading and writing.

The ill-structured problems provided the context for the students to exercise their reading skills as they sourced, gathered and assessed information from a variety of sources to develop solutions. The sources included Web-based references, books and other printed material, all of which were in English. As the groups considered solutions such as writing letters of appeal or complaint, drawing up petitions and constructing questionnaires, they began to ask questions about the format and language they should use. They set out to look for samples and guidelines that would be helpful to them, and in doing so, they had to skim through information from a variety of sources and assess it. For example, one student reported to the group that upon browsing the Internet for guidelines on how to write petitions, he had found hundreds, but he had then chosen twenty sites that looked most user-friendly and that offered the most readable guidelines. In his words, the guidelines were ones which "*if you read them... [you] won't get [a] headache.*" The student copied the links, along with some sample guidelines, and posted them in a message to his group members so that they could all decide on the format and content of

their own petition. Another group referred to a book on research methods in order to construct their questionnaire, and discussed some of the guidelines in their online space.

The PBL activity contextualised *writing* for the students in a similar way. They wrote substantially in English throughout the activity as they communicated their ideas and opinions, and composed their proposed letters, petitions and questionnaires. As they did with reading, the students, not the teacher, determined what they were going to write and how best to write it, based on guidelines they themselves assessed and selected. For instance, ten groups addressed their letters of appeal or complaint to the university authorities, but three other groups wrote additional ones for publication in newspapers. These three groups decided that the writing *style*, if not the content, had to be different for letters to the newspapers. This decision led them to study previously published letters, thereby determining their choice of reading texts.

These reading and writing exercises were different from many others in an important way, namely, it was the *students* who chose what to read and write, and how to do so, based on their proposed solutions to the problems. Just as in real-life reading and writing situations, there was no prescribed or required list of materials, nor was there an instructional sequence to follow. The context and the decisions they made within that context, not the teacher, guided the students' choices. The PBL activity thus allowed the students to be very much the *owners* of the reading and writing activities. A sense of ownership is important to language learners because it will motivate them to invest interest in the learning process, take charge of it and feel pride in what they do.

The PBL context also promoted the students' awareness of their language use. The students were reading and writing for a purpose other than to answer questions as part of a language test or exercise, which made the activity more meaningful. As the students worked on their solutions and strategies, they were writing as if they would for a *real* audience. They were conscious of their 'voice' and the intended effect of the written product. This awareness of audience was demonstrated in every group discussion as the students posed questions and comments such as the following:

"Do you think they will understand? [Is it] clear enough or not? Remember some are only first-year students, you know..."

"This is not very persuasive. We need to use stronger terms, not... what's that word... like not saying something direct[ly]. They must know we mean business!"

"NOBODY is going to read [such a] long letter. The newspaper column is very small, so it shouldn[']t be so long. Maybe we can cut something from the third paragraph, we don't have to talk about other countries."

"I don't think we can translate 'Yang Berusaha' into English. But if we don't use it, is it wrong?"

In addition to promoting awareness of audience, the PBL activity also provided the context for the learning of grammar. During the initial exploration of the forum, and throughout the dialogue on social and personal matters, the students paid little or no

attention to grammatical accuracy. The Malay particle 'lah' could occasionally be found in the interactions. However, once the 'products' were being proposed and developed, the students began discussing the use of grammatical items in the 'products', namely, their letters, petitions and questionnaires. Again, there was no pre-planned instruction on specific grammatical items by the teacher. Instead, the students decided on the items that needed to be checked as the need arose, and they learned the answers from each other or from online dictionaries and websites on grammar. Thus, the learning of grammar was both contextualised and student-directed.

Attention to grammar was more apparent in some groups than others. For 12 of the groups, the number of messages containing some reference to grammar ranged from 25 to 29. For five other groups, discussions related to grammar were found in 10 to 18 of their messages. The remaining two groups paid relatively little emphasis to grammar, as less than 10 messages made any reference to grammatical correctness in their documents.

The top three aspects of grammar discussed were tenses, word choice and sentence structure. An example of an exchange centred on the use of tenses is as follows (pseudonyms used):

- Laila : Okay, why do we [say] 'buses are always late' in the second para [paragraph] but 'were' after that? Is it a mistake? Which one is correct?
 Ling : No...not a mistake, I think. Because the second one uses 'If'. I [don't] know how to explain [it], but I think it's right. [Prema], can you explain?
 Laila : I'm confused. 'If'... so what if?
 Prema : [Ling] is right. It's like 'If I were late'. Same with 'if buses were not late'.
 Laila : ohhh. Are you sure?
 Prema : Ya, you can see [it] in Online Grammar. I already checked.
 Laila : Okay, good, thanks...

No other group discussed the use of the Past Tense with the conditional *If*, but this particular group did because they needed to use structure in their letter. Such exchanges provided evidence of contextualised language learning, where students developed their knowledge of grammatical rules within a context that made sense, and because their own interest was piqued. Laila in fact continued to ask related questions even after the immediate concern over the use of the Past Tense in their group letter had been settled, as follows:

- Laila : ...so does that mean we must use were all the time if we use 'if'? Orrrr[sic]... if we USED if... which one? lo l[acronym for 'laughing out loud'], i'm confused!
 Ling : I dun[sic] know. Must we use 'were' for everything?
 Prema: No it depends. But I'm not so sure, we can check...

If the teacher could capitalise on such discussions, they could serve as take-off points for further language exploration and instruction.

Despite the attention that the students paid to the grammar used in their proposed documents, it must be noted that the grammatical inaccuracies in the interactions themselves continued to be ignored. One student raised the question of whether they were expected to “use proper grammar” even in their conversations, but her group members did not even respond to the query. In general, the students obviously placed more importance on grammatical correctness in the final product than in the discussions leading to the construction of that product. From the teacher’s point of view, this priority exercised by the students was to be expected as they are used to being assessed on the product rather than the process of learning. However, what was important was that the grammar-related discussions that did take place were not random and in isolation, but were couched in a particular context.

The online discussions showed that in addition to learning grammatical rules from each other, the students also gained some new expressions, though such learning was not prevalent and not always directly related to the task at hand. One interesting example was seen in the exchange between a particularly articulate student and his group members, as follows:

Jules: ...I’m wired! You guys wired too?

Bakar: Wired? Whazzat?

Ann : Wire? You mean electrif[ied]? Electrocuted?

Jules: Wired, man! Hooked up, hyped up, alive. Better be, we’ve got lots of work to do here.

Ann : Lol!

Bakar: OK, no sweat, we’re all wired together.

The text of the interactions showed that the PBL task provided a context for learning and exploring language, and the collaborative aspect of the activity promotes communication that can be both academic and creative.

Role of the online conferencing facility

The study shows that while the PBL activity in the undergraduate course was inherently able to promote interaction among the students because of the open-endedness of the problems, the interaction was likely to have been boosted and enhanced to no small degree by the online environment itself.

First, where FTF group discussion among the students might have taken place once or twice a week, the online domain allowed more prolonged contact and frequent dialogue between the learners since they could access the forum at any time and from anywhere, thus reducing temporal and physical barriers to communication to almost none. Thus, the *amount* of interaction was likely to have been boosted by the online facility.

Second, because a record of previous dialogue was always available to the students, they could comfortably resume the discussion and refer to prior decisions or points of contention with confidence. Therefore, the continuing discussion progressed seamlessly as if there was no lapse of time between one posting and the next, unless a participant chose to remind the others that they had discussed something “last week” or “before the break”. The smooth transition from older ideas, information and opinions to newer ones aided the interaction and problem-solving process. The online forum also made it easier for group leaders to keep track of individual group members’ tasks and contributions, and to coordinate the information.

The online set-up also contributed to the enhancement and maintenance of group spirit that is critical to the success of working relationships even in real life. Even after the first few days of the activity, the members of all 19 groups continued to discuss matters of a non-academic and social nature. Some matters were directly pertinent to the task at hand, such as negotiations on when they could all be available to meet again online, complaints or compliments about specific group members. Other discussions were completely unrelated to the activity and of a more personal nature, including ailments, financial woes, and even grouses about family members or housemates, which always received responses of sympathy. These online disclosures of personal information, whenever they occurred, are noteworthy for two reasons. First, they suggest that some students had become comfortable enough with each other to entrust the other group members with personal information. This apparent demonstration of confidence in each other seemed to then pervade the academic discussions so that the arguments proceeded in an amicable manner. Second, the disclosures of personal information also suggest that some students, at times, seemed almost oblivious to the fact that an outsider (teacher) had access to their discussions. In more than one instance, a group member could be seen reminding another to be more discreet (“...wow, your sister is really terrible but keep secret lah! [The teacher] can read you know, she will laugh”). Such lack of guardedness on the students’ part indicated a developing sense of ownership of the online space and the problem-solving process, and was most likely due to the teacher’s conscious decision to allow the students relative freedom of communication. The text of the interactions showed that the teacher had inserted her prompts, comments or reminders only an average of twice a week per group where necessary (general instructions and responses to general queries not included).

Since interactions play an important role in collaborative language-learning activity, the teacher/facilitator sometimes needs to maintain a dynamic two-way communication between the students in each group, particularly in face-to-face situations where more dominant students can end up controlling the discussions and the direction of the group effort. However, no such problem was encountered here, and it is likely due to what the online conference environment affords. Since the communication was asynchronous and no immediate responses from individual students were required during the discussions, even the more timid students had the opportunity to voice their ideas and views after having had time to plan their messages, and with what was likely to have been much less fear than in FTF settings.

From the language teacher / facilitator's perspective, the online forum was also a very welcome facility because it allowed her to monitor the PBL process in case the students needed her guidance. Participation on the forum also meant that the students' discussions, whether they were on academic or non-academic matters, were largely conducted in English. As noted by Mathews-Aydinli (2007, p.5), one challenge faced in carrying out group problem-solving in a language class is that "students who share a common first language may use that language rather than English when working in groups on the assigned problem." Contrary to what she suggests, it is not always possible to address this difficulty by placing students of different language backgrounds in the same group, as was the case with this Malaysian class of students. The online forum thus provided a platform where the teacher could ensure that the language learners benefitted from the substantial amount of interaction generated by the PBL activity, by requiring that the interaction went on in English. This requirement did detract a little from the 'authenticity' of the communication, but it was a small price to pay for the benefits reaped from the contextualised use of the target language.

The limitation of the online forum was, of course, was that it could only support written interaction. However, this aspect of the forum did not pose a problem to this particular class because one of the purposes of the PBL unit was to let the students experience working with others online, a situation they might encounter in real life as online collaboration becomes a more pervasive feature of global communication. In other PBL situations, such a forum could be better utilised as an alternative means of interaction to complement FTF discussions.

Conclusion

The exploratory use of collaborative PBL in an online forum showed that such the approach can offer both linguistic and affective benefits in the ESL classroom. It can stimulate communication and generate much discussion among ESL learners, resulting in the purposeful and contextualised use of English. It raises awareness of other language users with whom the learners interact. The PBL activities can also promote self-directed learning, a sense of ownership of the learning activities and, consequently, learner autonomy.

The online domain can be utilised to enhance both the PBL process itself and the benefits it offers to language learning. Online conference boards can serve as easily accessible spaces for interaction, either on their own or as a supporting channel of communication when face-to-face meetings are not possible.

The language teachers who set up the PBL activity play an important role both during and after the problem-solving process. To be effective, their role as facilitator during the activity should go beyond monitoring and guiding. As language teachers, they also need to observe and take note of the difficulties that students are experiencing with particular aspects of language, such as grammar and vocabulary or pragmatic structures. These

difficulties should then provide the content for supplemental and more focused instruction after the PBL process has been completed.

If well planned and executed, Problem-Based Language Learning (PBLL) activities can be developed for language learners at all levels and will enrich our repertoire of pedagogical approaches.

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