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How to cite:

Sampurna, Jessica; Kukulska-Hulme, Agnes and Stickler, Ursula (2018). Exploring Learners' and Teacher's Participation in Online Non-Formal Project-Based Language Learning. *International Journal of Computer-Assisted Language Learning and Teaching (IJCALLT)*, 8(3) pp. 73–90.

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Version: Version of Record

Link(s) to article on publisher's website:

<http://dx.doi.org/doi:10.4018/ijcallt.2018070104>

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Exploring Learners' and Teacher's Participation in Online Non-Formal Project-Based Language Learning

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ABSTRACT

This article reports on the implementation of online project-based language learning in a non-formal educational context. Project-based learning may enable additional out-of-class language practice and digital technologies can support this activity, but little is known about whether learners will participate. Twenty-one tertiary learners from across Indonesia used multiple Web 2.0 tools to collaboratively create English learning materials for children as a project over the course of four weeks. Online data, learners' reflections, and interviews were analysed using content analysis. The study explores participation levels among learners and their teacher. Findings suggest that while learners' participation varied considerably, the teacher's participation was consistently the highest in all platforms except Google Docs. Learners had different attitudes towards their own and their peers' contribution, but generally valued the teacher's participation.

KEYWORDS

Language Learning, Non-Formal Learning, Participation, Project-Based Learning, Web 2.0 Tools

INTRODUCTION

A well-known problem in classroom-based language education is the limited amount of time available for practice using the target language. This can be compensated by various non-formal activities outside of class. Online project-based learning (PBL) facilitated by digital technologies is one such option. PBL has been widely explored in second language education. It allows students to practise and develop language skills (Dooly & Masats, 2011). It has also been shown to promote the development of non-linguistic skills, such as collaborative skills (Elam & Nesbit, 2012) and technology skills (Chang, 2014).

The study reported in this paper was conducted among EFL (English as a Foreign Language) learners in Indonesia. Compared to ESL (English as a Second Language) learners elsewhere, Indonesian learners have fewer opportunities to use the English language meaningfully. Furthermore, cultural influences mean that learners who are keen to use English may be worried that their peers would accuse them of 'showing off or trying to be a westerner' (Lamb, 2011:11). At schools, teachers often teach to the test as they feel responsible to help students pass high-stakes national exams presented in a predominantly multiple-choice format (Furaidah, Saukah, & Widiati, 2015). This leaves little room for interactions, which are considered crucial for language learning (Ellis, 2012).

DOI: 10.4018/IJCALLT.2018070104

Indonesians' enthusiasm for the internet may provide an opportunity to alleviate some of the aforementioned problems. In 2017, Indonesia had 143.2 million Internet users, amounting to 54.7% of its total population (APJII, 2017). The most popular Internet-supported activity in Indonesia is the use of social media, with Facebook having the greatest number of users (APJII, 2016). Facebook has been used to create communities for language learning worldwide (Adi Kasuma & Wray, 2015; Leier, 2017; Lin, Kang, Liu, & Lin, 2016). The current project originally set out to examine the use of Facebook to facilitate the development of a non-formal English learning community in Indonesia. During the study, additional Web 2.0 tools were introduced, as will be explained later in *Project Implementation*.

Web 2.0 tools offer affordances applicable in educational settings (Koehler, Newby, & Ertmer, 2017); however, to ensure learners successfully engage in online interactions it is of central importance that appropriate learning tasks are implemented (Hampel, 2006). Project-based learning (PBL), defined as 'tasks and activities that segue into a main output and which help the students work on different competences simultaneously' (Barba, 2016, p. 60) is a promising pedagogy. It is a student-centred, collaborative form of learning in which all students are expected to contribute to the shared outcome, while the teacher's roles are to provide scaffolding, motivation, support and guidance (Kokotsaki, Menzies, & Wiggins, 2016).

In PBL, students' work during the project (process) is more important than their final product (Debski, 2006). Process can be assessed by examining students' participation, which is also an indicator of their ability to handle independent learning (Clark, 2017). Clark (2017) assessed participation through teacher observation, class observation and asking students to rate their own and peers' participation, which then made up the students' participation grade. Such a system may be subjective; for example, ratings could be affected by students' friendships. Nevertheless, Clark found that assigning grades to participation accounted for higher levels of participation in her PBL class.

PBL has mainly been incorporated in formal contexts. However, not much is known about its implementation in non-formal contexts, i.e. "...education which takes place outside the sphere of compulsory schooling, but where there is educational intent and planning of teaching/learning activities..." (Lafraya, 2011, p. 8). Few studies have investigated the level of participation of both learners and teachers involved in an online PBL, and little is known about the reasons why some online learners might not participate despite being encouraged to do so. Insights from the learners' perspective can shed light on whether pedagogical modifications are needed to encourage active participation in online learning environments.

A preliminary feasibility survey study (Sampurna, 2016) suggested that many Indonesian learners are good candidates for online PBL as they are avid Web 2.0 tool users and show attributes such as autonomy, motivation, and positive attitude towards collaboration, with a caveat that they are anxious about making mistakes when using English.

The present study attempts to fill gaps in the literature and the following questions guided the enquiry into participation in online, non-formal PBL:

1. How is participation distributed among learners and the teacher across different Web 2.0 tools?
2. What are learners' views on their own and peer's participation levels in the project?
3. What are learners' views on the teacher's participation level in the project?

LITERATURE REVIEW

Project-Based Learning (PBL)

The basic idea of PBL is derived from John Dewey's belief that learners construct their own knowledge. It shifts education from the traditional teacher-centred approach to a student-centred approach. PBL is also rooted in social constructivism as it advocates learner interaction and collaboration to achieve a shared goal (Peterson, 2008).

There is no one universal model of PBL and the literature shows variation in its design and implementation. For example, it can be framed by a challenging problem or question as suggested by the Buck Institute of Education (2016), but many published PBL studies are not framed in this way (Barba, 2016; Dooly & Sadler, 2015). Despite these variations, a central characteristic of PBL is the creation of a concrete artefact (Kokotsaki et al., 2016), such as reports, presentations, videos, and many others, which distinguishes PBL from other forms of collaborative learning such as task based or problem-based learning.

PBL and Web 2.0 Tools

Second language teachers have been integrating an assortment of Web 2.0 tools in their PBL classrooms with mixed results. In Chang's study (2014), six Applied English students in Taiwan were required to use Facebook to discuss and produce a contract, a thesis, and a presentation in English. Additionally, the students had weekly face-to-face meetings with their instructor. Chang concluded that Facebook enabled students to support each other in solving problems and complete the project successfully. However, all students communicated in Mandarin unless it was necessary to use English, so Chang was uncertain whether PBL was useful for improving English. In Korea, Elam & Nesbit (2012) asked 21 Tourism students in a blended-course to use Ning, VoiceThread, Jing, and Scribd to discuss, share blog posts for reflection, and collaboratively create presentations. Students felt they improved their collaborative skills and showed a high interest in the technological aspects of the project. Elam & Nesbit also argued that "...the combinations of using Web 2.0 tools in PBL certainly shows promise..." (p. 125). Yet, they questioned whether PBL itself or the large portion of grades assigned to the project assignment motivated the students. Although these studies have examined how Web 2.0 tools were used in PBL in blended courses, none of them investigated participation levels in the project.

Web 2.0 tools allow PBL to be implemented fully online, connecting learners to new people beyond their existing social circle, and in non-formal education contexts with no grades awarded for participation. In non-formal contexts, the teacher's role is not well defined: the teacher may be completely absent, or may be less involved than when teaching in a formal setting. The question remains unanswered whether in such circumstances learners will participate.

Students' Participation

Students' participation is often viewed as engagement with what is being taught (Granger, 2012). Research on students' online participation has used different measuring methods and showed varying participation levels. In an LMS site with more than 600 pre-service teachers working in groups of 20, Park (2015) identified five levels of participation, from non-active to active participants, but found that many students did not recognise themselves as 'active' despite finishing their group assignments. Also, students were discouraged by the lack of peer engagement and teacher intervention. Park's study did not cross check students' perceptions with their actual participation activity recorded in the LMS, making it difficult to ascertain whether students' opinions on their participation level matched their actual participation.

Adi Kasuma (2017) and Adi Kasuma & Wray (2015) measured students' participation in an informal Facebook group (with no collaborative task) created to support Malaysian university students in learning English. The number of participants rose from approximately 300 in the first week to 600 in the sixth (final) week. Students' participation was calculated by allocating points for their posts, e.g. multimedia posts (5 points), text-based posts (4 points). With the total points, students were divided into four categories: active, average, passive, and very passive. The increase in number of participants may indicate students' interest in the Facebook group; however, participation rates were actually low, with only about 20% of students' participation visible and only 5% students were considered active members.

Kessler, Bikowski, & Boggs (2012) looked at contributions to group work as one indicator of student participation. Investigating how L2 students working in triads engage in collaborative writing processes using Google Docs (GD), they found that across all groups, the percentage of participation by individual team members fell into three levels: one that assumed 45-50% of the workload; one who was responsible for 30-40%; and a final member who contributed 15-25%. Kessler et al. (2012) were uncertain why participation level varied among individual students and suggested that future research should investigate this further.

In online learning, participation may not be observable because students may be learning passively by reading instead of writing (Hrastinski, 2006). Even so, active participation, such as by writing discussion posts, is found to correlate with higher exam scores (Wei, Peng, & Chou, 2015). The quantity of student participation is an important element in online learning and merits investigation.

Teacher Participation

Online teaching and learning settings have changed the nature of teachers' roles as they need to be visible online to compensate for the lack of face-to-face interactions. This so-called teaching presence (Anderson, Rourke, Garrison, & Archer, 2001) consists of three elements: instructional design and organisation (e.g. setting curriculum, deadlines); facilitation of discourse (e.g. prompting discussions, encouraging, acknowledging, or reinforcing student contribution); and direct instructional activities (e.g. giving feedback, assessing student understanding). Armellini and De Stefani (2016) suggest that teaching presence can also link to social dimensions; for example, when a tutor explicitly shares personal experience to trigger responses from students.

Teachers' online participation is not always seen as positive. It could negatively affect students' participation, resulting in the reduction of turns or posts (Zhao & Sullivan, 2017). However, Parks-Stamm, Zafonte, and Palenque (2017) found that teachers' participation positively predicts student participation in smaller classes. Teaching presence is also positively related to higher perceived levels of learning and sense of community (Shea, Li, & Pickett, 2006) as well as student satisfaction and learning outcomes measured by course final grades (Abdous & Yen, 2010). According to Park (2015) students viewed teacher intervention as crucial, and the lack of it led to some students' disengagement or non-participation.

As there does not seem to be sufficient research into student and teacher participation in online non-formal PBL, the current study attempts to fill this gap.

METHODOLOGY

This study is concerned with the implementation of online PBL in a non-formal education context. Considering the paucity of research on this subject, this research was exploratory in nature, and the first author had a dual role of teacher-researcher. To increase credibility, two rounds of investigation were carried out, henceforth called Study A and Study B.

Participants

The participants of this study were volunteers recruited from among 360 Indonesian tertiary students who responded to a preceding feasibility online survey and expressed their interest to participate in the present study (Sampurna, 2016). Although the use of volunteers may result in volunteer bias, this sampling strategy is sometimes unavoidable in a research study (Brownell, Kloser, Fukami, & Shavelson, 2013). Since the present study aimed to create a non-formal English learning community and non-formal education entails voluntary learning (Lafraja, 2011), the use of volunteers was considered appropriate.

Initially, 26 learners took part in the study; however, at the end of Study A and B, five were considered as drop-outs¹. Of the remaining 21 learners, 17 were females and 4 males, ranging from 19 to 23 years in age. They came from 13 different universities located in eight cities. Participants

majored in various subjects, from English-related degrees, i.e. TESOL and English literature, to degrees such as mathematics and business. Prior to the study, the majority of the participants did not know each other. The researcher had little information about the participants, but for their names and email addresses.

Project Design

The project was intended to support non-formal learning. It was not attached to an educational institution, but it was structured in terms of learning support (European Commission, 2001, p. 33). In order to be inclusive of all learners regardless of their educational backgrounds, the researcher decided that the main task for the learners was to create the content of a website aimed at children wanting to learn English. To maximise language practice opportunities, and also taking into account the lack of L2 use in other PBL research (Chang, 2014), participants were encouraged to use English although the use of Indonesian was not prohibited. The designated platform for communication was Facebook, because it had been used to provide discussion and collaboration spaces similar to a Learning Management System (Mahmud & Ching, 2012) and Sampurna's (2016) survey study revealed it was the most popular social media platform in the research context with 94% respondents already using Facebook.

Prior to the project commencement, the researcher created a basic project plan, which consisted of weekly objectives and tasks for participants.

Project Implementation

The progression of the projects in both Study A and B largely followed the plan. Learners tended to work on the project in the evenings after they came back from university. In the first three weeks, learners were encouraged to focus on content development, followed by both content and language from week four onwards.

Initially, in line with student-centred learning associated with PBL, the teacher had planned to take a back seat, aiming to only set the tasks, let learners follow through, and intervene only when absolutely needed. Nevertheless, from early on it was evident that more teacher-led prompts were needed to trigger responses from learners, so she ended up participating actively in most of each group's on- and off-task interactions, at the same time encouraging collaboration amongst learners. Essentially, she managed participation, interactions, tasks, and Web 2.0 tools at the same time. If one or more learners in one or more groups were online (either on or off-task) at the same time, she would usually show her presence (for example, by saying hello, or taking part in the interactions) to all of them by opening Facebook, multiple chat platforms, and/or GD simultaneously on her laptop and mobile phone. The teacher also tried to encourage inactive learners to participate more by mentioning names and including them in group interactions (e.g. by asking questions). Occasionally she contacted them privately on chat tools to enquire about their well-being, give updates on their group's progress, and set tasks to encourage participation, whilst at the same time showing understanding that learners had other responsibilities going on in their life.

Group Formation

By the end of week 1, Learners were asked to group themselves into threes or fours, resulting in 3 triads (Group A1, B2, B3) and 3 quartets (Group A2, B1, B4) as can be seen in Table 2.

Modification to Plan: Introduction of Additional Web 2.0 Tools

As the project developed, it became necessary to amend the original plan by the addition of three Web 2.0 tools: WhatsApp, GD, and LINE. This was not only in line with participants' explicit wishes, but also reflects the necessity to adapt tool use according to learners' preferences (Stickler & Hampel, 2010).

Table 1. Project plan

| Timeline | Objectives & Activities |
|--|--|
| Week 1 (day 1-7) | <i>Creating a Facebook group:</i> Learners are invited to join a closed Facebook Group. |
| | <i>Getting to know each other:</i> Learners do ice breaker activity. |
| | <i>Getting input:</i> Learners: a. look up examples of available English learning websites for children; b. choose one and share the link on Facebook; c. discuss with others what features of the chosen website they like/dislike and why. |
| | <i>Preparing for collaboration:</i> Learners put themselves into groups. |
| | <i>Deciding on project artefact:</i> Learners discuss and agree on what artefact to create for the project. |
| | <i>Reflecting on Week 1 experience:</i> Learners reflect on their Week 1 experience. |
| Week 2 (day 8-14) | <i>Producing output:</i> Learners start collaborating on their chosen artefact. |
| | <i>Reflecting on Week 2 experience:</i> Learners reflect on their Week 2 experience. |
| Week 3 (day 15-21) | <i>Producing output:</i> Learners continue working on their chosen artefact. |
| | <i>Reflecting on Week 3 experience:</i> Learners reflect on their Week 3 experience. |
| Week 4 (day 22-28) | <i>Giving and receiving inter-group feedback:</i> Learners give peer feedback to other groups. |
| | <i>Revising, editing, finalising output:</i> Learners do final round of editing before submission. |
| | <i>Reflecting on Week 4 experience:</i> Learners reflect on their Week 4 experience. |
| Week 5 (day 29-31) | <i>Receiving final teacher feedback:</i> Learners are asked whether they would like to receive corrective feedback. If so, they receive corrective feedback. |
| | <i>Scheduling interviews:</i> Learners choose an interview slot. |
| Within 2 weeks after the project ended | <i>Conducting interviews:</i> Learners participate in an interview. |

WhatsApp

Firstly, in Study A, concerned by the lack of learners' replies when the teacher attempted to engage them in a conversation on Facebook, she decided to conduct a poll to find out whether learners would have preferred to use another tool for communication. Since the majority of learners chose WhatsApp, on Day 8, she created two separate WhatsApp groups (Groups A1, A2) hoping that by using their preferred medium of communication they would be more responsive to the teacher's prompts and tasks. Given the many learners in Study A who expressed a preference for WhatsApp over Facebook, WhatsApp was also used in Study B from Day 6 onwards.

Table 2. Group formation (names are pseudonyms)

| | Study A | Study B |
|--------|---|---|
| Groups | A1 (Ann; Vera; Pete) A2 (Heidi; Hector; Ivy; Rita) | B1 (Roy; Bob; Naomi; Macy) B2 (Nada; Wina; Ava) B3 (Kerri; Prue; Devi) B4 (Amy, Daisy, Zoe, Rei) |

One of the suggestions given by learners at the end of Study A was that in addition to the smaller separate WhatsApp groups, a bigger WhatsApp chat comprising of all participants should also be created so that they could communicate more easily with peers outside their own group. Thus, in Study B, there were five WhatsApp groups: one for each group (Group B1, B2, B3, B4), and one for all participants (Mixed Group).

GD and GD Chat

The second tool was introduced after both groups in Study A agreed on writing a story for their artefact. Learners discussed their story ideas on WhatsApp, but the teacher felt that the discussion kept going round in circles. Thus, she checked if learners in both groups thought it would be useful to use GD as their writing platform. Both groups thought GD was more suitable for writing hence on Day 12, the teacher created two separate GD documents so that they had a more private writing space. This meant they would not be influenced by what the other group was writing, and their draft would be a surprise when shown to the other group during an upcoming intergroup feedback session. For the intergroup feedback session, the teacher created one additional GD document in each study, which contained a compilation of all groups' drafts. This way learners could read what other group(s) had created and give their feedback. In Study B, the teacher created each group's GD on different days (Day 7 for Group B2 and B3; Day 11 for Group B1 and B4) because she waited until each group had decided on what artefact they wanted to produce.

The GD chat feature was used by Group A1 from Day 16 onwards for synchronous interactions in a sidebar whilst simultaneously working on their GD. The teacher also encouraged the other groups in both studies to use this feature whilst working on their output. However, only Group B1 followed the teacher's suggestion. They only tried it for one day and reverted back to WhatsApp as their chat platform.

LINE

On Day 11, LINE was added to Group B4 to accommodate Rei who was unable to install WhatsApp on her mobile phone due to insufficient storage. The rest of Group B4 were already users of both WhatsApp and LINE. Although LINE was Group B4's main chat platform, the teacher kept their WhatsApp group chat opened as she was not sure which chat app was preferred by each learner in Group B4. LINE data showed that Group B4 members last used LINE on Day 20, but the teacher's entries posted until the end of the project continued to be read by all Group B4 learners².

Alongside the new tool(s) which matched learners' preference and needs, Facebook continued to be used by the teacher to provide updates on the project and to announce tasks as she felt it gave a sense of permanency in case learners missed what was happening on WhatsApp or GD. Hence the teacher sometimes repeated what she considered an important announcement across Facebook, WhatsApp, and LINE.

In sum, Facebook played little part in the actual collaborative process when learners worked on their artefact. Facebook posts consisted of preparatory activities (e.g. ice breaker activity, group formation), reflection prompts, and project tasks and updates. Collaborative efforts began after groups

Table 3. Web 2.0 tools used by different groups in two studies

| Use of Web 2.0 tools | | Facebook | WhatsApp | Google Docs (GD) | GD chat | LINE |
|-----------------------|--------------------------|----------|----------|-----------------------|---------|------|
| One big group | All Study A participants | ✓ | | Intergroup feedback | ✓ | |
| | All Study B participants | ✓ | ✓ | | ✓ | |
| Small separate groups | A1 | | ✓ | Drafting and revising | ✓ | ✓ |
| | A2 | | ✓ | | ✓ | |
| | B1 | | ✓ | | ✓ | ✓ |
| | B2 | | ✓ | | ✓ | |
| | B3 | | ✓ | | ✓ | |
| | B4 | | ✓ | | ✓ | ✓ |

were formed and took place on chat tools (WhatsApp, GD chat, LINE) and GD as their writing platform. Table 3 summarises the different Web 2.0 tools used in both studies.

DATA COLLECTION AND ANALYSIS

Data were obtained from online records of learners’ posts on Web 2.0 tools during the entire study period, post-project one-to-one interviews with all learners, and learners’ reflections. Only eight learners submitted their reflections: one learner provided weekly reflections, one learner did it twice, and the rest did it once.

Counting Participation

Learners’ and teacher’s participation was analysed by tallying output visible online. For Facebook data, the researcher counted the number of postings, which included initiating/starting posts and comments/reply posts, made by the learners and the teacher. Posts containing only emojis or a single word without much meaning, e.g. Hi, K, were not tallied (Lai, 2016). Facebook ‘likes’ were not regarded as postings (Kamarudin, 2015). As for chat data (WhatsApp, GD Chat, LINE), the researcher counted the number of chat entries, which were identified when participants pressed the enter key and published a message (Cho, 2017). GD data was analysed in two ways. Firstly, revision history showing colour-coded words written by each participant were counted at the end of each writing/editing session (Zheng, Lawrence, Warschauer, & Lin, 2015). The teacher’s GD word count excluded teacher correction given on the last day of the project. Since numerous language errors made it difficult for the teacher to comment on each and every correction, the teacher decided to rewrite some or all parts of the story so learners could see how their artefact could be improved. This meant if the final teacher correction was included in the GD word count, the teacher’s figure would have been very high, hence distorting actual participation during the creation of the learners’ artefact. Secondly, GD comments, consisting of initiating comments and replies, were tallied.

Determining Participation Levels in Facebook

The number of Facebook posts was used to categorise learners’ and teacher’s participation into three levels. The scale was determined based on the average percentage of posts assuming equal participation per member. Given that in Study A’s Facebook group there were a total of 8 participants (7 learners and the teacher), if each individual participated equally, they were expected to make 12.5% of the total Facebook posts. This figure was rounded to the nearest whole number, i.e. 13%.

Table 4. Determining Facebook participation levels

| Participation level (Facebook) | Study A (7 learners + 1 teacher) | Study B (14 learners + 1 teacher) |
|--------------------------------|----------------------------------|-----------------------------------|
| High | ≥26% of total Facebook posts | ≥14% |
| Moderate | 13-25% | 7-13% |
| Low | <13% | <7% |

Less than average was labeled *Low*. Twice the average or more was labeled *High* because the data showed that other than the teacher, only one learner from the two studies could be placed in this category, indicating that reaching this percentage of Facebook posts was a noteworthy achievement for this particular learner. Percentages in between the average and double (or more) were considered *Moderate*. The same principles were applied to determine participation levels in Study B as shown in Table 4, as well as in other Web 2.0 tools.

Determining Participation Levels in Chat Tools (WhatsApp, GD Chat, LINE) and GD Document

Since the teacher played an important part in each group’s interaction and sometimes even acted as a co-collaborator of learners’ artefacts, she was regarded as a team member in each group. Therefore, a triad actually had a total of four participants (three learners and the teacher) and a quartet had a total of five participants (four learners and the teacher). After learners’ and teacher’s entries were counted, their participation was categorised into five levels instead of three as in Facebook to show more variations in the amount of individuals’ entries. Since many learners did not reach the expected average percentage of chat entries, it was necessary to highlight the different degrees of Low participation by splitting it into three categories as can be seen in Table 5.

Analysing Learners’ Views on Participation Levels

Interview data (12 in Indonesian and 9 in English, ranging from 37 to 73 minutes with an average of 50 minutes) were translated and transcribed verbatim. Interview transcripts and learners’ reflections were analysed using qualitative content analysis (Elo & Kyngäs, 2008). They were then triangulated with the data regarding participation.

RESULTS AND DISCUSSION

Research Question 1: Participation Levels

Online data revealed marked differences in participation levels amongst learners and the teacher.

Participation in Facebook

Besides the teacher, only one learner showed a high participation level on Facebook. Four learners showed moderate participation and 16 rarely made Facebook posts. Learners’ lack of Facebook participation was in line with Adi Kasuma and Wray’s (2015) findings. Nevertheless, in this study all (100%) learners made visible contribution on Facebook, while Adi Kasuma and Wray found about 80% of their participants did not demonstrate their presence at all.

One possible reason for the lack of learners’ participation was the fact that Facebook was mostly used to establish infrastructure, such as doing ice breaker activity, making announcements and giving updates, all of which were initiated by the teacher and attracted few comments from learners (except for the ice breaker activity). Learners’ Facebook posts peaked in the first week when they got to know each other, but steadily declined after smaller private group chats were created.

Table 5. Determining chat tools and GD participation levels

| Participation Level (chat entries*, GD word counts and comments) | Triads (3 learners + 1 teacher): Group A1, B2, B3 | Quartets (4 learners + 1 teacher): Group A2, B1, B4 |
|---|--|---|
| High | ≥50% (of total chat entries, and of total GD word counts and comments ** in a particular group) | ≥40% |
| Moderate | 25-49% | 20-39% |
| Low | 12-24% | 10-19% |
| Very low | <12% | <10% |
| None | 0 | 0 |

*As there were three types of chat entries, an individual's percentage was calculated by averaging that person's chat entries across all chat tool(s) used by their group. For example, Group A1 (triad) chatted on WhatsApp and GD chat. Thus, a team member who made 24% of Group A1's total WhatsApp chat entries and 16% of GD chat entries had an average of 20%, which would then be categorised as 'Low' participation level in chat entries.

** GD word count participation levels were determined in the same way as chat entries participation. GD comments participation levels were determined by taking an average of comments percentage initiated by each participant in their own group (during the drafting and revising sessions) and comments made in other groups (during the intergroup feedback session).

Although the teacher's dominance at the beginning of a Facebook group is common (Adi Kasuma, 2017; Leier, 2017), the Facebook groups reported in this paper never developed into a more learner-driven learning environment. The teacher socially facilitated learner participation (Lin et al., 2016). Meanwhile, learners followed her instruction and responded to her prompts with little interactions with their peers, except for a few who responded to peer comments.

Participation in Chat Tools

The teacher was the only individual showing a high participation level across the chat tools used in each group. Four learners showed a moderate participation level, suggesting their participation was equal to or higher than average in a particular group. Chat tools, especially those available on mobile phones such as WhatsApp and LINE, were perhaps practical to use and hence encouraged learners to maintain communication with team members and the teacher (Deng, Li, & Lu, 2017). Nevertheless, the fact that 17 learners only showed low or very low participation levels suggest that neither the practicality of chat tools nor the teacher's frequent prompts to initiate interaction was enough to encourage participation. Other factors could have impacted their participation, such as readiness to 'live the second language in a social environment' and group dynamics (Lai, 2016, p. 287).

Participation in GD

Learners showed more varied participation levels in GD. With regards to word count, fifteen learners contributed in some way, showing high to very low participation, but six never wrote anything at all on GD. Although previous studies using GD as a collaborative writing platform have identified

Table 6. Participation in Facebook

| Participation level | Facebook | | |
|---------------------|----------|----------|-----|
| | High | Moderate | Low |
| Learners | 1* | 4 | 16 |
| Teacher** | 2 | 0 | 0 |

*The figure denotes the number of individuals categorised into a specific Facebook participation level across both studies.

**The teacher was treated as a separate individual in each study and thus counted twice.

Table 7. Participation across chat tools

| Participation level | Chat entries (WhatsApp, GD chat, LINE) | | | | |
|---------------------|--|----------|-----|----------|------|
| | High | Moderate | Low | Very low | None |
| Learners | 0 | 4 | 7 | 10 | 0 |
| Teacher* | 4 | 2 | 0 | 0 | 0 |

*The teacher was treated as a separate individual in each group and thus counted six times.

unequal participation amongst learners (Kessler, Bikowski, & Boggs, 2012), all of their participants contributed in some way, however little. The existence of learners with zero GD participation in this study could perhaps be attributed to various factors. First, the non-formal nature of their involvement with the project – i.e. the lack of consequence (e.g. low grades, teacher’s irritation) and/or learners’ other responsibilities outside the project (e.g. university assignments, extra-curricular activities) – could have negatively affected learners’ participation. Second, learners may not be familiar with GD, or at least less confident in using it compared to chat tools in their daily life. Deng et al. (2017) recommended to accommodate students’ habits, preferences and educate them about the reasons for using digital collaborative tools to ensure their acceptance.

Ten learners gave comments either in their own group or others’, but eleven learners did not. Not surprisingly, learners who never made any comments were the same learners who showed low, very low, or no participation in GD word count. Nonetheless, it would be inaccurate to say that learners who had zero participation in GD, be it in word count or comments, did not in any way contribute to their group’s artefact. They could have joined artefact-related discussion on one or more of the chat tools, thereby contributing ideas albeit with making no visible contribution on GD. This could not be ascertained without analysing the content or quality of participation.

The teacher’s GD word count ranged from low to none, indicating seemingly little involvement in learners’ creation of the artefact. However, GD comments data revealed the teacher’s high participation rate, which means she actually played an important role during the drafting and revising stages because she gave numerous comments to help learners improve their artefact. She provided guidance, feedback, and when necessary, intervention to help learners reach their learning goals in PBL (Mergendoller, Markham, Larmer, & Ravitz, 2006). The teacher only showed low GD comments participation in one group (B3); this particular triad was quite active in WhatsApp, with two learners showing moderate and one learner showing very low participation level. Observing this, the teacher wrote the majority of her feedback on Group B3’s WhatsApp instead of GD.

Past studies on collaborative writing on GD mostly focused on learners in formal contexts and paid little attention to the teacher. Findings from this study suggest that in an online non-formal PBL, the teacher was the driving force behind the construction of the learners’ artefact. It is worth noting, however, that in the present study the teacher’s high participation level might also be attributed to the dual teacher-researcher role.

Table 8. Participation in GD

| Participation Level | GD Word Count | | | | | GD Comments | | | | |
|---------------------|---------------|----------|-----|----------|------|-------------|----------|-----|----------|------|
| | High | Moderate | Low | Very low | None | High | Moderate | Low | Very low | None |
| Learners | 5 | 4 | 3 | 3 | 6 | 2 | 2 | 3 | 3 | 11 |
| Teacher | 0 | 0 | 1 | 4 | 1 | 5 | 0 | 1 | 0 | 0 |

Research Question 2: Learners' Views on Their Own and Peers' Participation Levels

Learners' views on their own and peers' participation level corresponded to the online data. That is to say, passive learners identified by the analysis of participation in research question 1 recognised their lack of participation. They were often apologetic about it and attributed their lack of participation to external private reasons beyond the project:

I didn't think my schedule was going to be this packed, so I was rarely active. (Devi).

Four learners stated that participation in this project was not a priority either for themselves or their peers:

... I wait when I can contribute to the group because I should prioritise my work [at university] first then the group project. (Roy).

... because each team member were busy with their own things so they focused on their own assignment, so the project was not a priority. (Prue).

Two learners revealed they avoided being asked to participate by deliberately not telling the teacher that they had issues with GD. For example, Daisy mentioned she had difficulty downloading GD, but when asked why she did not inform the teacher, who often checked whether all learners had access to the Web 2.0 tools used, her reply indicated concerns over being asked to participate:

I wanted to tell you, but I was worried I couldn't keep my promise to do or edit team's work, because I was busy preparing my [university] research. (Daisy).

This finding suggests the project or tasks could have been deemed too taxing by learners, to the extent that they refused to tell the teacher about issues they had with GD in order to avoid being asked to participate. It might also be an attempt to save face, as not having access to a Web 2.0 tool can be seen as legitimate excuse for not participating.

Many learners, sometimes including those who considered themselves inactive participants, felt there was not enough participation from their peers. This resulted in learners feeling demotivated or reluctant to initiate interactions.

The group itself was not very active. Actually if I were to start a chat, I was shy, I was afraid that nobody would respond. (Rei).

Similarly, Park (2015) found that the lack of peer engagement may discourage participation in collaborative tasks and further impede more frequent communication with peers.

Learners who believed they had made a contribution had different feelings towards non-contributors. In line with Zhang, Peng, & Hung's (2009) observation that active learners resent their peer's inactivity, five learners had negative perceptions of inactive participants:

Actually I'm disappointed because I look forward to work together with them. (Bob).

Nevertheless, others did not harbour resentment and rationalised the passive learners' lack of participation:

For me, it's ok. I don't really mind it (laughed), yeah, I don't really mind at all...They all have a choice, so I don't really find it annoying. (Pete).

Learners' acceptance of unequal participation could be attributed to their previous group work experience at school/university, which was often plagued with the same issue:

It happens all the time when there is a group assignment I would be the one who did it, who did the project. (Nada).

They often chose not to report non-participants in order to maintain good relationship with their peers. Some learners also stated that their teachers' lax attitudes towards equal participation exacerbated the problem:

Actually my teacher didn't really care about the process they only care about the result what can we give to the teacher. Usually they ask who in the group that didn't do the work, but usually... I felt uncomfortable reporting that a friend had not done any work to the lecturer. (Roy).

Research Question 3: Learners' Views on the Teacher's Participation Level

Learners generally valued the teacher's continuous effort to facilitate the project despite occasionally being ignored by learners:

We often did not respond to your messages in group chat, but luckily you're patient and keep encouraging us to do this project. (Vera).

Social discourse included in the teacher's participation (Armellini & De Stefani, 2016) helped to build relationships with learners:

I also appreciate when you give comment on FB like we just give a Like and then you directly give a comment for us. Like you really pay attention for each participant. (Zoe).

Teacher intervention also encouraged learners' participations, corroborating past research findings (Park, 2015; Parks-Stamm et al., 2017):

Warms up the situation... Like "Hi this is Sunday, are you doing something nice?" Makes the situation better because without that nobody said anything. (Wina).

Although most learners viewed the high level of teacher participation favourably, two learners in Study B had some reservations:

That's good but it's kind of hunted... It's like you really encourage us but you give it every day I think you have to give like one or two days off to the participant so they can have a time off from the project. But I think it's also good because you also remind us what should we do. (Zoe).

There was no evidence to suggest that teacher participation had a negative effect on Zoe's participation, but her reservation highlights the complexity in setting the appropriate level of teacher participation. On the one hand, learners value teacher participation (Leier, 2017; Park, 2015), but on the other hand, it could be perceived as suffocating. Perhaps in non-formal contexts learners could do with less teacher intervention to make their learning experience more enjoyable; however as mentioned before, without teacher's prompts and guidance, most learners in this study hardly participated.

CONCLUSION

The results of this study gave insight into participation levels on multiple Web 2.0 tools in online non-formal PBL. The lack of learners' participation observed early on in the study forced the teacher to intervene extensively, which resulted in high teacher participation rate in all Web 2.0 tools except for GD word count. This means that although GD history showed learners as the creators of their artefact, the process through which the artefacts were created was in fact teacher-centred rather than learner-centred. The teacher shaped learners' artefacts with her prompts, guidance, and feedback and largely determined what and how learners used Web 2.0 tools. Teacher participation led to engagement from some, but not all learners as evidenced by the generally low learner participation.

This non-formal, voluntary project failed to engage the majority of participants in active production of the project output. Some learners were keen and participated actively, but the rest often cited high-stake university assignments as the main barrier for contributing to their group artefact. Bearing in mind that all learners, active and inactive, had other commitments outside the project, it seems that individual factors, such as motivation, willingness to interact with relatively unknown peers and teacher, English proficiency, confidence in using English, or familiarity with GD, could have affected learners' participation level. Perhaps, for many learners external motivators (e.g. grades) are more attractive than intrinsic motivators (e.g. being able to practise using English, or knowing that their artefact would be published and viewed publicly). Considering the purpose of conducting the research was to create an English learning community outside school, the low student participation in this study casts doubt on the sustainability of such community.

Learners had an accurate view of their own and peers' level of participation. The differing attitudes of active learners towards their inactive peers may be influenced by the context of this study. Although some learners were understandably upset, many expressed understanding and empathy. This could be due to the collectivist culture of Indonesia or even general acceptance of unequal contribution as the norm of group work because of previous collaborative experiences. Although teacher participation was largely viewed positively, online teachers need to fine tune their participation level depending on the teaching context, learners' responses and preferences. This can be challenging when dealing with a group of learners with different views and needs of teacher participation.

The study has several limitations. First, generalisation of the results is limited due to the small sample size. A larger group of participants may have led to more varied participation levels. Second, the dual teacher-researcher role could have affected the teacher's participation level. In addition, learners may have had a desire to please the teacher-researcher; however, their generally low participation levels in the project as well as some negative views and constructive criticism given in the interviews indicated that a desire to please did not play a significant part in the results.

The study highlights several possibilities for future research. Measuring learners' participation can help PBL teachers assess learners' engagement in a project, but it does not give a complete picture of the collaboration amongst students. The present results suggest that learners may be more inclined to participate in Facebook and chat tools than GD. Future research might focus on the content of participation, which may enable teachers to investigate why GD participation was particularly low and devise strategies to encourage more learners' participation in GD. Insights into the content of participation may also allow teachers to provide better support for learners throughout the different PBL stages and tools used in the project.

Future research needs to consider how to increase learners' motivation so that their participation level could be improved, and the project could be more sustainable. This study used writing as the only mode of communication. In the interviews, some learners in the present study expressed their desire to practise and improve their speaking. Thus, future research may want to include speaking activities, which can easily be facilitated by WA and LINE. As other research has shown the difficulty in maintaining students' interest in non-graded learning activities (cf. Adi Kasuma & Wray, 2015), it may also be necessary to provide small tokens to be distributed upon the completion of the project.

For example, one of the learners in the current study suggested that a certificate of participation would be highly valued as it could be added to their curriculum vitae.

Finally, it may be useful to conduct a longitudinal study of similar projects. The present study lasted for a month, with only the first week allocated for getting to know unfamiliar peers and teacher. A longer study would allow for more social interaction to build rapport, which could help build a sense of community and enhance participation. A longer study may also reduce the pressure of collaborating as effectively as possible so that artefacts can be finished within a tight deadline. This may result in a project that is more enjoyable and better suited to the non-formal aspect of learning, whereby learners tend to work on their artefact in the evenings after taking care of their other responsibilities. Furthermore, participants in the present study were all new to online PBL, and this could have affected their participation levels and contributed to the reliance on teacher's hand-holding. Interview data indicates that experience gained from this project could help them participate better in future projects. For example, Ivy stated "...this was my first time participating. I see oh this is how it works. If I get other offers, I can try harder to help if I join future projects." Since Ivy was one of the passive students, it would be interesting to conduct a follow-up study that can reveal whether familiarity with the online tools and PBL modifies participation level.

ACKNOWLEDGMENT

This research was supported by the Leverhulme Trust [grant number DS-2014-077].

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ENDNOTES

- ¹ Reasons for drop-out: two learners never participated in any way; two learners stopped participating and did not respond to queries about their involvement in the project; and one withdrew because of a heavy university workload.
- ² LINE application automatically shows the number of people who have read each post.

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