



Enhancing engagement, enjoyment and learning experiences through gamification on an English course for health care students

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Abstract

Student engagement in traditional learning environments has been in decline, leading to decreased learning results. Gamification offers one option to trigger interest and enhance engagement in learning activities. The aim of this study was to investigate the potential of gamified course design in language learning from students' perspectives. Particularly, we explored how students experience engagement, enjoyability and language learning. The theoretical framework comprises processes of interest and engagement, and gamification in language learning. Language learning is understood through socio-cultural and ecological approaches.

The research was conducted during a three-credit, field-specific English course. The participants (N = 23) were first-year health care students conducting their studies with a blended-learning approach. The applications Seppo, Kahoot, Padlet and Quizlet were used. The collected data included students' learning diaries and a post-course online questionnaire. Content analysis was used to examine the diaries and the answers to the questionnaire's open questions.

The results suggest that gamified course design and related applications can enhance student engagement, foster language learning and offer positive learning experiences. However, there are differences among gamified applications. Supporting collaboration and creating a positive atmosphere are important to cultivating the gamified learning process. Implications for teachers also are discussed.

Keywords: *Gamification, Language learning, Student Interest and Engagement, Higher education, Blended learning*

Introduction

Student engagement in traditional learning environments has been in decline, leading to substandard learning results and lack of engagement. Teachers and educators try to motivate and engage students in learning activities (e.g., Hidi & Harackiewicz, 2000; Kangas, Siklander, Randolph & Ruokamo, 2017). When students are described as disengaged, it signals that educational experiences do not trigger their interest. Triggering interest can enhance students' learning and increase the joy of learning, fuelling motivation and engagement (Hidi & Renninger, 2006; Roberts & Ousey, 2004; Renninger & Bachrach, 2015; Siklander, Kangas, Ruhalahti & Korva, 2017). A recent study suggests that one way to help engage disengaged students is to let them make greater use of socio-digital technologies in their studies (Salmela-Aro, Muotka, Alho, Hakkarainen & Lonka, 2016).

Active learning methods promote positive learning experiences and achievement, compared with lectures and other more traditional methods (Freeman, Eddy, McDonough, Smith, Okoroafor, Jordt & Wenderoth, 2014). When learning online, successful interaction and collaboration should be emphasised to trigger students positively. Interaction and collaboration are manifested as feelings of belonging, cooperation and joint knowledge construction (Siklander, Kangas, Ruhalahti & Korva, 2017). Negative learning experiences typically are prominent in less-ideal learning environments, and by improving the learning environment, students are likely to become enthusiastic and engaged with learning activities (Shernoff, Csikszentmihalyi, Schneider & Shernoff, 2003; Freeman et al., 2014). Other reasons for disengagement include boredom, alienation and disconnection from real-life expertise and learning activities (Shernoff et al., 2003).

Gamification has been used in education beneficially (Caponetto, Earp & Ott, 2014; de Sousa Borges, Durelli, Reis & Isotani, 2014; Dicheva, Dichev, Agre & Angelova, 2015; Hamari, Koivisto & Sarsa, 2014). The reason for implementing gamification in learning is its ability to elicit engagement the same way digital video games do. Besides engagement, gamification can increase students' satisfaction, effectiveness and efficiency in a blended-learning course in higher education (Urh, Vukovic, Jereb & Pintar, 2015).

Sociocultural theory (Vygotsky, 1978; Lantolf & Thorne, 2006) approaches language learning as an interaction in which learners mediate and internalise physical and cultural tools and practices. In the ecological language-learning approach, learners' social activity, interaction with others and the environment, and how they perceive and use learning opportunities are central (Hyvönen, 2008; Lantolf & Thorne, 2006; van Lier, 2010).

This research adds to the discussion on gamification in language learning in higher education and especially its engaging characteristics. The aim of this research is to investigate the potential of gamified course design in language learning from students' perspectives. Particularly, we explore how students experience engagement, enjoyability and language learning.

Theoretical framework

As theoretical background, we consider *gamification* to be a *trigger* for *engagement, enjoyment and learning*.

Triggering interest and enhancing engagement

Interest, motivation and engagement form a process in which triggers play a key role because they can awaken and maintain students' interest. The process is not straightforward and can even change directions. A trigger can be an object, event, person, task or idea. It can be something that is novel for students, as well as a problem or challenge (Järvelä & Renninger, 2015; Renninger & Bachrach, 2015; Robers & Oysey, 2004). In addition, technologies and games can trigger students' interest and increase motivation, e.g., to learn a language (Zarzyska-Piskorz, 2016). In this study, gamification is viewed as a *context* that can trigger students' interest toward engagement, enjoyment and learning.

Triggers can be categorised many ways, e.g., they can be cognitive, emotional, social or playful. In addition, reflective triggers (Veerporten, Westera & Specht, 2012; Verhagen, Feldberg, Van den Hoof, Meents & Merikivi, 2012), individual progress, group progress and contextual triggers (Määttä, Järvenoja & Järvelä, 2012) have been identified. Recent studies in higher education reveal that collaboration in online learning contexts is an effective trigger that creates a positive emotional, cognitive and social cycle that, in turn, can keep students motivated and engaged (Siklander et al., 2017).

The four-phase model of interest and engagement introduced by Hidi and Renninger (2006) sheds light on understanding the entire process, from interest to engagement. First, students feel triggered by situational interest, which, in this case, can be the course design or gamification elements. The second phase refers to maintained situational interest, in which students focus their attention and persistence over time. In our study context, students, for instance, find the course design and related activities to be meaningful. In the third phase, individual interest emerges. Students feel positive, and their curiosity is generated, i.e., emergent individual interest typically is self-generated, but also supported by other students or teachers. The fourth condition is well-developed individual interest. Each phase is characterised as a psychological state of interest that may or may not elicit the next motivation and engagement level.

Students' engagement is manifested in various ways. *Behavioural engagement* can be observed easily, in which students are active and persistent, looking for knowledge and seeking help when needed. However, behavioural engagement does not reveal whether students are really learning. *Emotional engagement*, particularly the activation of positive feelings, is connected to engagement. For instance, joy can increase vigilance and engagement. However, some feelings, such as relief, can decrease engagement (Sinatra, Heddy & Lombardi, 2015). Therefore, it is important to consider students' emotions and expectations toward course design and tasks. *Cognitive engagement* tells us how much effort and time students are investing in understanding tasks at hand, how eagerly they exceed their limits, and how they adapt as they choose and solve

problems. Cognitive engagement increases motivation and predicts successful learning results. An additional form of engagement is *agentic engagement*, in which students are proactive in their learning. They take part in and help shape course design, teaching, learning environments and interaction because they want to understand more deeply. They enrich, personalise, modify and request instructions for better learning (Montenegro, 2017; Sinatra et al., 2015). For best results, all four forms of engagement should be reached.

Gamification in language learning

The notion of gamification commonly refers to the use of game elements and game-design techniques in non-game contexts to engage and motivate people to achieve their goals (Deterding, Dixon, Khaled & Nacke, 2011; Kapp, 2012). The difference between educational games and gamified learning is that educational games refer to proper, full-fledged games for non-entertainment purposes, whereas in gamification, certain aspects are used in a non-game context. In education, gamification is a didactic method, especially regarding its ability to engage students in learning activities (Kapp, 2012). Gamification is a process that incorporates engaging aspects of games into a traditional teaching environment, adding extra value or new experiences to existing ones. It modifies a task, providing a variety of experiences to participants and offering them more tempting opportunities to participate, collaborate and interact (Kapp, 2012). Interaction, especially oral interaction, is a vital aspect of contemporary language learning in higher education (Juurakko-Paavola, 2005).

Recent studies (Kiili, de Freitas, Arnab & Lainema, 2012; Kapp, 2012; Perry, 2015; Francisco & Flores, 2015; Urh et al., 2015; Martí-Parreño, Seguí-Mas & Seguí-Mas, 2016) provide teachers with suggestions for designing gamified learning. The first basic aspect is *feedback*. Instant feedback benefits students since the more frequent and targeted the feedback, the more effective the learning. Positive and personalised feedback makes an impact on students' emotions, and it motivates and engages students to proceed and complete more assignments. By being immediately rewarded upon completing tasks, students gain a feeling of performing well, which, in turn, empowers them to continue playing and studying (Kiili et al., 2015). Furthermore, *narrative* is an essential aspect in gamified tasks, as it tends to make a positive impact on learning through engagement (Kapp, 2012). The narrative enables learning tasks in authentic settings, which increases student engagement. Clear goals, immediate feedback, a sense of control and appropriate cognitive load contribute to a successful gamified assignment or a whole course.

Methodology

Aim and research questions

The aim of this research is to investigate the potential of gamified course design in language learning from students' perspectives. Particularly, we explore how students experience engagement, enjoyability and language learning during the English language course.

The following research questions were addressed:

How do health care students evaluate and value the use of gamified applications:

1. for triggering interest and enhancing *engagement*?
2. for enhancing *enjoyment*?
3. for enhancing language *learning*?

Participants

Health care students (n=23) at a university of applied sciences who were following a blended-learning study programme took part in this research. The students' ages ranged from 19 to 51, and their educational background was heterogeneous. The students possessed or exceeded skill level B1 in the European framework, which equals the level of an independent language learner. At this stage, student autonomy and self-regulation in learning emerge.

Description of the study context

The context of the study is a three-credit, field-specific English course for first-year health care students at a university of applied sciences. The course's duration was 10 weeks, including five face-to-face sessions. The course aims to teach students how to communicate in multi-professional and intercultural situations within the health care sector.

The learning platform Fronter was used for sharing information and students' projects by embedding each student pair's Padlet with it. In Fronter, the study model was divided according to the topics: 1) activity environments in the health care sector; 2) typical health care cases; 3) instructing the patient, nursing procedures and self-care instructions; 4) first aid and anatomy; and 5) patient interviews.

For the whole course, a working life-simulation background story was created in a hospital setting. The principal gamified platform was an application called Seppo. The incorporated assignments were pair tasks conducted in class with the teacher in control. Other applications used were Kahoot, Padlet and Quizlet.

Seppo is a learning platform for creating educational games in which the teacher designs assignments and grades creative tasks, while answers to multiple-choice questions are graded automatically. Students can submit content in the form of photos, videos, text or links. There is also a scoreboard showing the game's progress in real time.

Padlet is an interactive, virtual wall on which links, photos, videos, documents and PowerPoint presentations can be shared. Padlet, as such, is not a gamified tool, but during this course, its purpose was to create social pressure when student pairs uploaded and shared their own material on it. The students' created material formed part of the course material; the idea was to exploit students' own experiences and knowledge.

Quizlet lets students create vocabulary study sets and offers multiple exercises

and games for practicing vocabulary. During the course, students created bilingual (English-Finnish) vocabularies on their chosen topics and shared them on their Padlets.

Kahoot is a game-based platform in which quizzes can be created. The platform displays a leader board after each question and the final score after each game.

The course's gamified tasks were as follows:

1. The students formed working pairs (except for one group that comprised three students). For the first Seppo assignment, student pairs were instructed to find suitable terminology for the presented hospital setting and name other health-sector workplaces in English. With the topic of the first lesson being activity environments in the health care sector, the student pairs chose their own environments and created PowerPoint presentations on their topics with a Quizlet vocabulary, embedded in the pairs' Padlets.
2. The second lesson began with a Kahoot quiz based on the vocabulary that the student pairs created on their Quizlets. The students wrote about their chosen typical health care cases and uploaded their texts onto their Padlet with Quizlet vocabularies. The students then used Seppo to present their content by recording videos for the supervisor during their practical training.
3. The third lesson began with a Kahoot quiz that revised the previous lesson's vocabulary. Two further tasks were conducted on Seppo: a task using online dictionaries to gather information and a task to find solutions to health care cases using evidence-based searches on databases.
4. Kahoot was used to learn new vocabulary on one topic (first aid and anatomy), and the lesson was devoted to conducting three assignments with Seppo.
5. Anatomy vocabulary was practiced with Kahoot.

Data

The study's data consisted of students' reflective journals and responses to a post-course questionnaire. The data-collection method, quantity and time are shown in Table 1.

Table 1. Data collection

Data collection	Time frame	Size of corpus
Students' reflective diaries	During the entire time of investigation	23 diaries (29.234words)
Post-questionnaire	End of the course	23 filled-in questionnaires

The students kept reflective learning diaries during the course, in which they

elaborated and reflected on the learning content that, in turn, led to them revising the learning material and learning more in the process. Learning diaries can facilitate and improve students' self-regulation (Zimmermann & Paulsen, 1995).

GoogleForms was used to create the questionnaire (see Appendix I), which was sent to the students after the course. The questionnaire included 30 questions on students' experiences concerning the benefits of the applications used. A Likert scale from 1 to 5 (from strongly disagree [1] to strongly agree [5]) was used. The participants filled in the online questionnaire either before or after the written and oral exams.

Analysis

The learning diaries were analysed qualitatively through inductive content analysis (Kyngäs & Vanhanen, 1994), which uses stages: simplifying the data, categorising and abstraction. Content analysis also utilises the following steps: 1. reading the learning diaries, 2. searching for simplified expressions and highlighting them, 3. listing simplified expressions, 4. searching for similarities and differences in the simplified expressions, 5. combining the simplified expressions to create subcategories, 6. combining the subcategories to create major categories and 7. combining the major categories to create the concept. In our study, the major categories were engagement, enjoyment and learning, which, together with collaboration and course atmosphere, formed the concept for a fruitful and balanced learning environment. The learning diaries were analysed anonymously, with students' names coded according to their gender: F1, F2 and so forth for female students and M1, M2, etc., for male students.

Results

The effects of the gamified learning activities were evaluated according to three dimensions: engagement, enjoyment and learning language skills. For each dimension, participants indicated their agreement or disagreement on a five-point Likert scale. The applications used were assessed separately. Furthermore, the course atmosphere and pair work were estimated. The data indicated that the students were engaged in the English course and that the used applications and learning methods fostered students' communication. In addition, the students found that gamification made their learning experiences more fun. The results will be described in accordance with Figure (1) below.

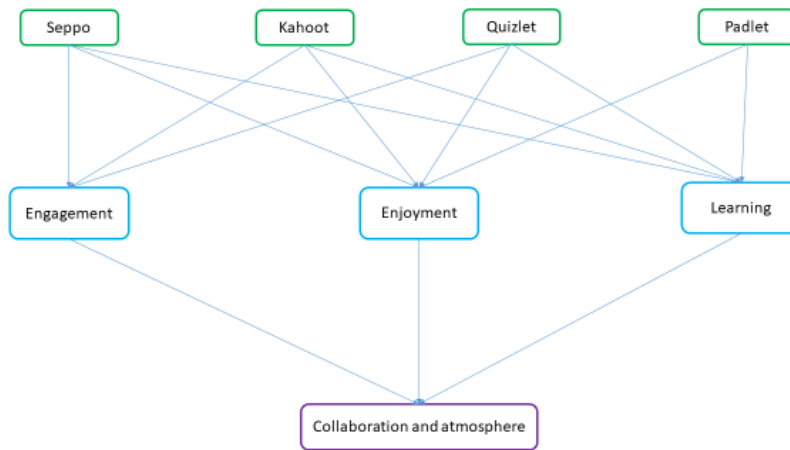


Figure 1. Categories used in this study.

Figure 1 illustrates how the four applications used impacted engagement, enjoyment and learning. Furthermore, the course design emphasised collaboration and a positive, tolerant and emotionally safe atmosphere (Eteläpelto & Lahti, 2008) that, in turn, fosters engagement, enjoyment and learning. All these factors are connected with each other, offering students opportunities to be active learners in a meaningful and fruitful learning environment.

How do health care students evaluate and value the use of gamified applications for triggering interest and enhancing engagement?

The application that the students considered the most useful for fostering engagement was the game platform Seppo.

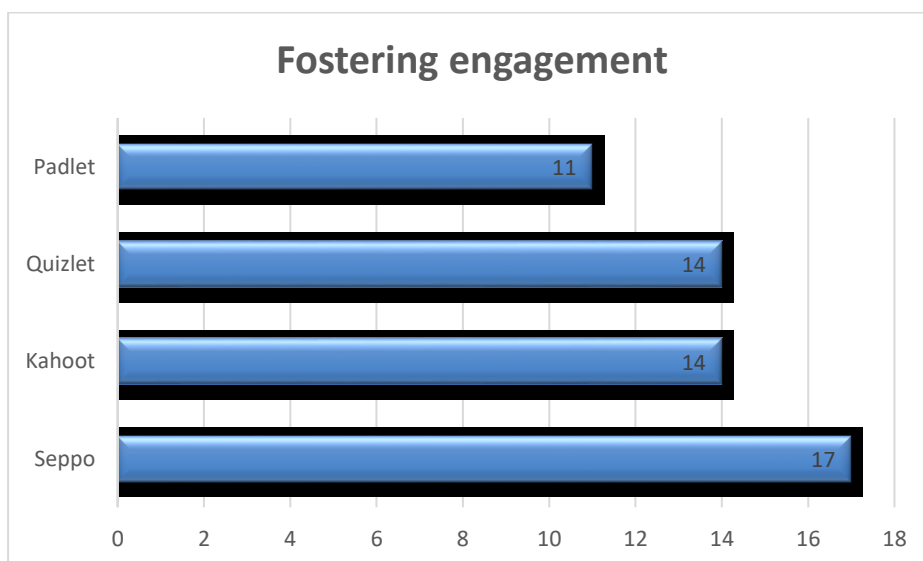


Figure 2. Applications fostering engagement

As shown in Figure 2, 17 participants (n=23) agreed or strongly agreed with the statement 'Seppo fostered my engagement to the course'. The application's *easiness* of use raised interest initially, with interest maintained as students valued the *multiple ways* in which assignments could be conducted. The following excerpts reveal that students inherently found *learning opportunities* to be engaging: Only writing can improve writing, and transferable connections between study materials and working tasks are important.

'The assignments in Seppo were educational because we had to write in English again'.

'It is nice that the assignments in Seppo are related to the study material we had just studied'.

Other factors that stimulated interest and enhanced engagement include *individual, collaborative and flexible work methods*, which Seppo enables. Students can concentrate better when they find a peaceful place to discuss and complete assignments while working within their pairs. Contextualised assignments were considered essential since the aim of the course was to improve students' professional language skills.

The second-best applications, from an engagement perspective, were Kahoot and Quizlet. Kahoot's engaging elements were praised, along with its ability to create a positive, relaxing atmosphere. As seen in Figure 2, 14 students agreed, from moderately to strongly, that Kahoot is engaging. Kahoot enabled students to challenge themselves, visualised their progress and offered positive reinforcement.

'Kahoot was a fun and engaging game! It created a relaxed atmosphere in the class'.

'We could have played Kahoot every time!'

The same number of students (14) estimated that Quizlet enhanced engagement (agreed moderately, agreed or strongly agreed).

Padlet received controversial feedback: Over half the students said it had only a minor effect on engagement (disagreed or strongly disagreed), but the other half considered it engaging (Figure 2). Nevertheless, Padlet was viewed as beneficial, as it allowed students to learn from each other.

How do health care students evaluate and value the use of gamified applications for enhancing enjoyment?

Gamification should create a game-like feel within the study material and learning activities, which have a tendency to increase time spent on studying and improve actual learning.

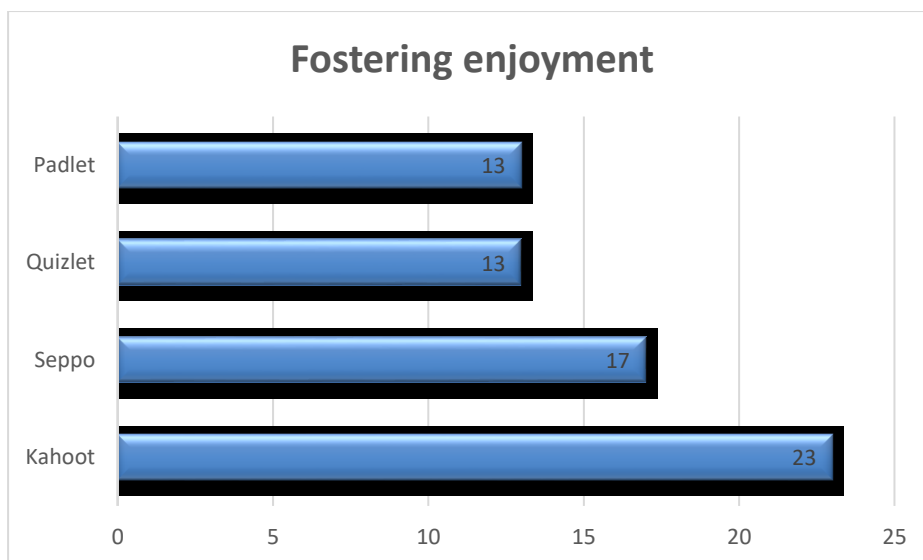


Figure 3. Applications that foster enjoyment

Learning with the application Seppo was viewed as fun by 17 out of 23 students (see Figure 3). The following excerpts describe how enjoying the task is connected with learnability and collaboration.

‘Our task was to describe a room and work tasks there; it was fun and developed my vocabulary’.

‘It was great that we could work independently with the pair; we could concentrate better and manage our own time consumption’.

Learning with Padlet was viewed as fun by 13 students (n= 23), whereas the rest felt that the virtual wall did not offer enjoyable learning experiences. Students were discouraged and frustrated by the errors and typos they discovered in other students’ projects that were embedded in the Padlets. Furthermore, Padlet was considered complicated to use.

‘At first, I was thrilled by Padlet, but as I realised others’ material consisted of typos and grammatical mistakes, I was frustrated’.

As illustrated in Figure 3, all the students rated Kahoot as a fun learning tool. Even if they made mistakes, they found Kahoot to be fun and educational. Kahoot sessions enhanced feelings of togetherness and offered opportunities to laugh together.

‘The Kahoot game was great fun, an easy way to learn words, and you could claim you made a mistake because you wanted to be as fast as possible’.

‘Playing Kahoot created a great feeling of belonging; we were all laughing when somebody pushed the wrong button because of over-excitement’.

Only 13 students enjoyed Quizlet (Figure 3). These students appreciated the versatile games Quizlet provides for rehearsing vocabulary.

'I was surprised at how efficient and fun it is to learn new words with Quizlet. I am going to use it after the course as well'.

How do health care students evaluate and value the use of gamified applications for enhancing learning?

For this study, the effect on learning was the most important of the three evaluated dimensions. The participants were asked whether the gamified assignments fostered their oral and written language learning.

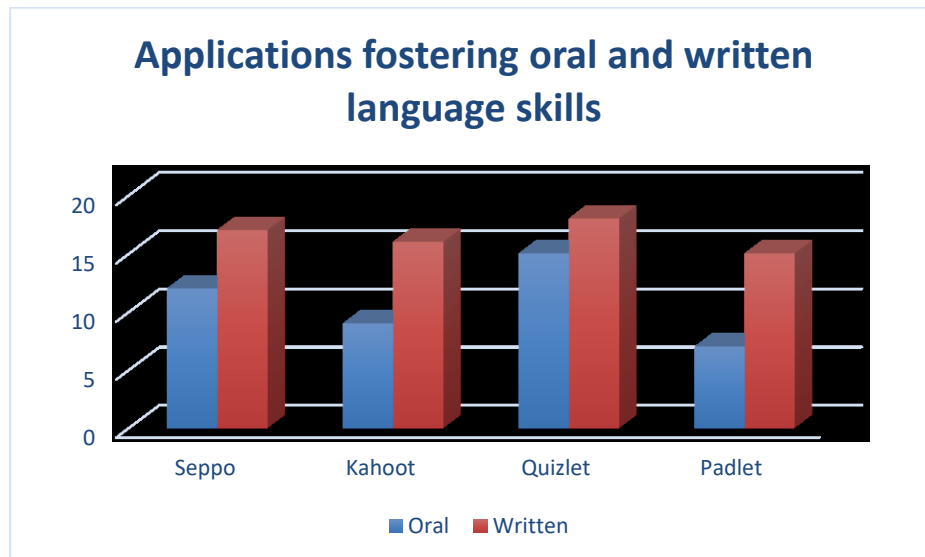


Figure 4. Applications that fostered oral and written language skills

Assignments conducted in Seppo enhanced oral language skills, according to 12 students, and enhanced written skills, according to 16 (n=23) (see Figure 4). The students found the assignments in Seppo to be authentic and strongly contextualised, which increased learning. The tasks were found to be demanding enough so that the students felt challenged, improving their input. Furthermore, autonomy and authenticity were viewed as catalysts for students' efforts and academic achievement.

'Seppo was the best application in this course; the assignments were relevant, and they were easy to implement'.

Kahoot seemed to foster oral skills, according to nine students, but as many as 15 said it improved written language skills as well (see Figure 4). Students can see the word only written in the quiz; thus, it is recommended that the teacher say the word in question aloud to offer a model for students' pronunciation.

'An awesome tool to revise vocabulary. It was nice that the teacher pronounced the words aloud, and I could repeat them after her'.

Students said Quizlet fostered both oral and written language skills. The students appreciated the opportunity to create their own study sets and practice vocabulary that their peers had collected. Autonomous and authentic learning was promoted by the real-life-driven study sets.

'It is nice that I can collect (relevant) vocabulary at the same place, but I did not use it as much as I should have'.

'I did not use other students' Quizlets at all, since I prefer to look up the words myself. Anyway, I was not sure if the words were spelled correctly in Quizlets, or if the words were in relevant context'.

Most students said they did not find that Padlet fostered oral language skills; 12 students rated its ability to enhance oral skills as poor, but 15 said it improved written skills.

Collaboration and atmosphere

Based on empirical data analysis, we have shown the meaning of gamified applications for engagement, enjoyment and learning. Furthermore, our aim was to explore other factors that are crucial for engaging students in the course. An important effect of gamification is that it engages students, which can lead to improved learning.

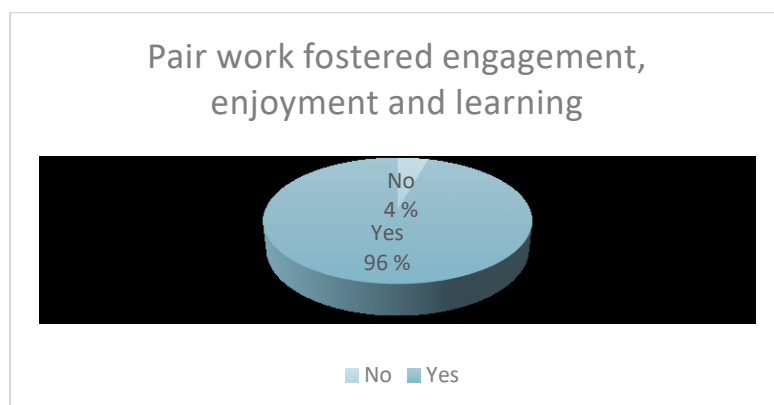


Figure 5. Pair work fostered engagement, enjoyment and learning

As visualised in Figure 5, when it comes to engagement, the most beneficial element in the course was pair work; 96% of participants consider pair work to be fostering engagement. The students said pair work enhanced engagement since they were responsible for themselves and for their pairs, which also is the case with real-life workplace teams. Furthermore, the working method was viewed as educational because the pairs supported each other, eliciting better achievement.

Collaborative work with a pair enhanced oral and written skills. To create an ideal learning environment in pair work, it is essential for students to be at the same skill level, and in this case, pair work created a fruitful basis for the whole course. The fact that the students were grouped in the same pairs throughout the whole course fostered learning in general, and their collaborations were creative and enjoyable.

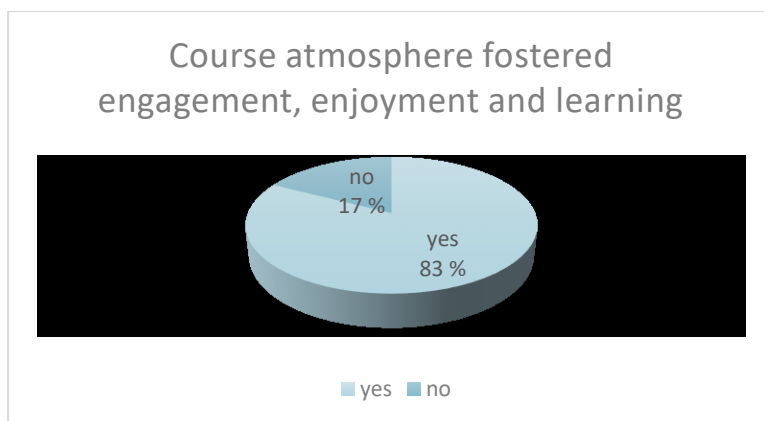


Figure 6. Course atmosphere fostered engagement, enjoyment and learning

In addition, 83% of the students considered the course's overall atmosphere to be fruitful, engaging and enjoyable from a learning perspective; thus, they appreciated the course's tolerant and positive atmosphere (see Figure 6).

Discussion

Our data indicate that gamification added extra value to the course, fostering engagement, enjoyment and learning. The application Seppo was seen as a versatile tool to foster engagement and learning and was widely viewed as fun. The students found it fruitful to concentrate on given field-specific topics in pairs and receive immediate feedback. In addition, they appreciated when their achievements were shown and discussed in class afterward. Seppo also was seen as helpful for practicing oral and written language skills.

Kahoot's engaging and fun elements were praised, as well as its ability to create a positive, relaxing atmosphere. Furthermore, it especially fostered learning of written language skills. Kahoot provided successful vocabulary tasks and made learning fun among the pairs. The participants seemed to be excited and eager to learn, and performing well was desirable after each question enhanced competition. However, network failure caused frustration for some students, and they wanted to stop playing because they noticed that they could not have won. Nevertheless, immediate feedback in the form of correct answers in the game was appreciated. Kahoot was suitable as a vocabulary test, as well as for revising.

Padlet was not viewed as engaging, but it enabled practicing of written skills. The students appreciated the creative work shared by fellow students and the opportunity to re-watch each other's videos, texts, links and vocabulary study sets, regardless of place or time.

With Quizlet, the students created study sets and played others' sets. It was beneficial to search for terms on the chosen field-specific topic and chart keywords independently, which contributed to both self-regulated and self-paced learning, as well as collaboration. Quizlet was viewed as fun and engaging to some extent, and it fostered learning both written and oral skills.

When it comes to general feedback, the gamified elements were considered positive and fun, and versatile methods brought diversity to learning. Some participants viewed the gamified elements as non-academic, while others changed their minds when they reflected upon learning. The new ways to learn languages surprised and challenged a few adult learners, as the learning environment differed from their prior experiences with language learning. The use of educational technology challenged some students when too many new tools distracted them from learning the language. Otherwise, the new digital skills learned during the study module were appreciated, and the students were provided with technological and collaborative tools and learning skills to be applied in other studies and later in their work lives.

When designing gamified elements for learning processes, teachers' competencies are important to note. Teachers should have knowledge of both gamified applications and applicable knowledge about interest and engagement. In addition, they need pedagogical knowledge about learning, particularly how to foster collaborative learning in the gamified learning process and create an atmosphere that cultivates successful learning experiences.

Based on the results, raising interest and enhancing engagement play an essential role in course design. In terms of the four phases of interest (Hidi & Renninger, 2006; Montenegro, 2017, the first three -- 1) triggering through situational interest, 2) maintaining situational interest and 3) emerging individual interest -- were apparent. However, perceiving the fourth phase, well-developed interest, was not possible. The students assessed their engagement, but their understanding of engagement remains unclear. Based on their responses, we could perceive behavioural, emotional and cognitive engagement to some degree, but agentic engagement did not show up (Sinatra et al., 2015). Future research should focus more precisely on describing and analysing the entire process of interest development and, simultaneously, the four forms of engagement in the context of gamified teaching and learning.

Not only students' engagement, but also teachers' engagement is crucial when predicting students' satisfaction and enjoyment in learning. If the teacher is not engaged and inspired, the students are not expected to be satisfied and inspired either (Kangas et al., 2017). For the teacher, gamification provides tools to consider the instructions from the engaging aspects, and for students, it offers engaging learning experiences. Furthermore, the learner can view learning objectives as challenges to be accomplished to progress in the gamified activity. The student learns while moving from one stage to another; thus, playing becomes part of learning outcomes (Francisco & Flores, 2015).

This study confirms the earlier notion of the effectiveness of collaboration as a trigger in online learning (Siklander et al., 2017). Learning is a social, interactive process, although individual learning is also necessary. Collaborative learning involves cognitive-linguistic processes of co-elaborating the issues at hand. By collaboratively elaborating on the problems, students interact and produce their learning outcomes (Baker, 2015). Language learning, particularly the benefits of linguistic ability, e.g., applications and designs, should afford and encourage students to work together. Fostering collaborative learning requires demanding-enough tasks and learning goals for students to gain from

interactions with each other. Then students invest less cognitive effort, compared with working alone, because they can divide information processing across a larger reservoir of capacity (Kirschner, Kirschner & Janssen, 2014). As seen from the results, gamified elements afforded alternative conditions, situations and practices for students to distribute and use knowledge (e.g., Hyvönen, 2008; Lantolf & Thorne, 2006; van Lier, 2010). Working collaboratively increased interest, which is situated to and connected with engagement (Levine & Resnick, 1993).

Every dimension highlighted the importance of atmosphere, which is in line with earlier studies (Eteläpelto & Lahti, 2008; Siklander et al., 2017). When designing gamified courses, teachers should find ways to create emotionally safe, equal and supportive atmospheres where students feel free to express themselves. Supportive atmospheres nurture creativity, spur curiosity and encourage giving, as well as tolerating mistakes and failures. Teachers are expected to allocate time for the course's orientation phase, when factors such as a supportive atmosphere can be discussed with students.

Conclusion

This research enabled focusing on promoting educational technological and pedagogical possibilities to support efficient blended learning and to experiment on the use of gamified tools that suit language learning in higher education. Gamified elements support student interaction, enabling integration of field-specific topics in language teaching. The course design used contributed to versatility in assignments, and in accordance, it supported contextualised professional language learning, collaboration, authenticity and self-regulated learning.

The aspects that need to be developed further include intensifying peer and self-assessment, as well as teacher feedback degree in quantity and quality. The gamified elements could be deepened by allowing students to be responsible for time consumption and offering extra levels or mystery tasks for students who perform well.

There are some limitations to this study that should be noted. The main limitation is that results are based on self-reported data. When exploring experiences, self-reporting is important, but in further studies, we will focus on other types of data.

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Appendix I

The post-course questionnaire in [GoogleForms](#)