Gamification: Increasing engagement in an English as a Second Language (ESL) elementary classroom

Olyvier Larochelle

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By: Olyvier Larochelle

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Signed by the final examining committee:

_____ Chair

_____ Examiner

_____ Examiner

_____ Examiner

_____ Supervisor

Approved by :

_____

Dr., Walcir Cardoso, Graduate Program Director

_____

Dr., Pascale Sicotte, Dean of Faculty

Date _____

ABSTRACT

Gamification: Increasing engagement in an English as a Second Language (ESL) elementary classroom

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This study explores the effect of gamification on behavioural engagement and looks at the practicality of implementing game elements into classrooms from the teacher's perspective. The aim of this study was to explore if two game elements, narrative and choice, could be used in a classroom environment without increasing teachers' load while also behaviourally engaging students.

The two main research questions were: a) What impact do specific game elements (narrative and choice) have on the behavioural engagement of elementary school students in an ESL classroom setting? and b) What are the practical challenges and benefits of integrating game elements into elementary school teachers' instructional strategies?

The teacher used gamified activities and scenarios to teach her regular classroom while the students participated in the activities. The activities were integrated into each class to be as inclusive of the material as possible, with a minimal amount of disruption. The participants were observed throughout each class and completed a questionnaire. Students and teachers had different questions, each targeting a different research question.

The students generally liked the activities, but the results were inconclusive regarding a change in their behavioural engagement. The biggest indicator of changes in the students' behavioural engagement was switching from structured to non-structured activities.

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Chapter 1: Introduction

Background and setting

In education, gamification has gained traction as a tool to promote student engagement, which Deterding et al. (2011) define as the usage of game elements in non-game contexts. Currently, the practical applications of gamification have outpaced research, and informed research on the impact of gamification in classroom settings is lacking (Dichev & Dicheva, 2017; Kasurinen & Knutas, 2018). Researchers and teachers still do not know the most effective approach to developing and integrating gamified activities; there is a gap between theory and practice.

To create effective gamified activities for the classroom, they must be informed by motivational and engagement theories. A significant gap in a previous study was found by Hiver et al., 2021, in that only 35% of the 112 studies on language learning that they analyzed define engagement. Since high motivation and engagement with the learning material seem to influence learning outcomes positively (Fredricks, Blumenfeld, & Paris, 2004; Axelson & Flick, 2010; Saeed & Zyngier, 2012; Hiver et al., 2021), having a clearer understanding of the relationship between gamification and engagement is necessary to understand how to integrate gamified activities in the classroom appropriately.

A second gap observed in previous studies is the lack of research in the k-6 sectors. Most studies are done in high schools or universities (Al-Dosakee & Ozdamli, 2021; Kim & Castelli, 2021; Nadi-Ravandi & Batooli, 2022). To show two examples that are representative of most literature reviews and meta-analyses, Kim and Castelli's 2021 meta-

analysis had 146 k-12 participants and 12 455 adults, and Dichev and Dicheva's 2017 literature review had three papers out of 51 in the k-6 sectors.

As this study was done in Quebec, a term that might require clarification is English proficiency. For this study's sake, English proficiency follows ESL competencies directed by the QEP (Quebec Education Program) (MELS, n.d). Ergo, a student with low proficiency, is a student that is low proficiency for a 5th grader in Quebec. One last term that needs to be clearly defined for this study is the word technology. When explaining that this study does not use technology, it refers to web-based applications like ClassDojo or other apps. The technology used in this study is one that students have used since entering the school system (PowerPoint and Whiteboard), and it could be replaced with non-technological systems if needed.

The present study

This study follows the current trend of studies on using gamification in education to promote higher student engagement. However, this study focuses on areas that most studies have mostly ignored. The target demographic is the k-6 sector; technology is not used to attract students to a new form, and the gamified activities were done in collaboration with the teacher to maximize their practicality. Researchers have suggested that gamification can work to promote engagement; however, the results are mixed, and there is a need for more studies to show the link between gamification and engagement (Dichev & Dicheva, 2017). This study tries to fill this gap by identifying and examining multiple theories on motivation and engagement to have a clearer view of the study's results and the effect of gamification on engagement. The research questions related to the present

study are as follows: a) What impact do specific game elements (narrative and choice) have on the behavioural engagement of elementary school students in an ESL classroom setting? and b) What are the practical challenges and benefits of integrating game elements into elementary school teachers' instructional strategies?

A qualitative-observational approach was adopted to observe students' behavioural engagement in their natural environment. The study used three different viewpoints to collect data from the observer, the teacher, and the students. Using data from all points of view gave a more comprehensive understanding of how to read the data. Using a qualitative approach is appropriate for this study because it gives it flexibility, which can be necessary when doing research in a non-controlled environment.

Students' behavioural engagement was assessed by measuring their interactions with the teacher and other students. Notes were also taken when students were commenting orally to no one when these comments were about the gamified activities. The direct observations were separated into structured observations and unstructured observations. Structured observations were used to count the number of interactions and attitudes toward the game elements. In contrast, unstructured observations were used to look at other participants' attitudes and comments in the class. Additionally, a questionnaire examined participants' perceptions of the game elements. The students' questionnaire looked at how integrating the game element was for people participating. In contrast, the teacher's questionnaire examined how teachers could integrate them into their instructions. To interpret the results obtained from the observations, Self-Determination Theory and Cognitive Load Theory serve as frameworks for the analysis by examining how the game

elements affect motivation and cognitive load, influencing engagement. This theoretical lens will help link the observations to established constructs.

The thesis will be organized as follows: Chapter 2 provides an overview of the literature on gamification, classroom research, and motivation and engagement theories. It ends with the research questions that were important for the study. Chapter 3 describes the methodology, examining the components used for this qualitative-observational study. Furthermore, the methodology also describes the analysis of observations and questionnaires, helping to answer the research questions. Chapter 4 reports the findings from the observations, the questionnaires, and the teacher's survey. Chapter 5 provides a discussion of the findings and the impacts of the different game elements for each student and delves more into the research questions. Finally, Chapter 6 provides the conclusions, suggestions for future research, and study limitations. The current study aims to explore if two game elements, narrative and choice, could be used in a classroom environment without increasing teachers' load while also behaviourally engaging students.

Chapter 2: Review of literature

Introduction

The exploration of gamification in educational settings has produced an array of findings, usually showing positive results on student engagement in short-term interventions and negative results in long-term interventions (Kim & Castelli, 2021). However, significant gaps remain in the research, particularly in the practical application and impact of gamified scenarios in K-6 classrooms(Kasurinen & Knutas, 2018).

Understanding the foundational theories of motivation, engagement, and cognitive load is crucial before revealing the previous study on gamification. Laying the groundwork before delving into gamification will help identify which element of gamification affects students' engagement, providing a conceptual foundation upon which the rest of the study will be based. The key theories that will be examined are the self-determination theory (SDT) (Deci & Ryan, 2000), engagement theory (Fredricks et al., 2004), and cognitive load theory (CLT)(Sweller, Van Merrienboer, & Paas, 1988).

Next, this review aims to synthesize the existing research on gamification, focusing on two game elements: narrative and choice. After unravelling the link between the game elements and the theories, the analysis will examine studies that have looked at how gamification in the classroom affects students' engagement. Furthermore, current instructional strategies, teacher constraints, and classroom realities must be examined to fill the gap in previous studies on practical applications. This chapter will conclude with the goals for the study and the research questions that guide the present study.

Conceptual Foundation

Educational research has shown for a long time that more motivated students tend to have more substantial learning outcomes (Deci & Ryan, 2000). Highly motivated students tend to have more substantial learning gains because they demonstrate more effort and persistence when engaging in learning activities (Richter, Raban, & Rafaeli, 2015). To effectively motivate students, teachers must create experiences that meet their needs. Once students are motivated, engaging them in the task at hand becomes substantially more straightforward. Researchers are exploring ways to increase students' motivation and engagement by utilizing gamification to enhance learning activities. However, to understand the relationship between motivation, engagement, and gamification, a review of the different theories can help build a conceptual foundation upon which this study will examine the causal forces behind gamified learning experiences. These theories are the Self-Determination Theory (SDT), Goal-Setting Theory, Social Comparison Theory, multidimensional model of student engagement, and Cognitive Load Theory (CLT).

Self-determination theory offers a key explanation for the different levels of motivation among learners, theorizing that fulfilling three psychological needs, autonomy, competence, and relatedness, is necessary for increasing motivation (Decy & Ryan, 2012). First, the need for autonomy refers to an individual's sense of being in control over their learning, which is nurtured by the ability to make choices. Second, the need for competence involves mastering skills and challenges and succeeding in their achievable goals. Third, the need for relatedness pertains to the emotional connections individuals have with one another and the feeling of being respected within their social environment (Decy & Ryan, 2000). A supporting social context, such as a positive classroom environment that addresses

those three needs, can enhance intrinsic motivation. It can also facilitate internalizing external motivators, increasing autonomous motivation.

Moreover, Deci and Ryan (2012) discuss a more nuanced view of intrinsic and extrinsic motivation, an approach that looks more closely at how people internalize behaviours. This approach introduces the concepts of autonomous and controlled motivation. These concepts come from the idea that the different forms of extrinsic motivation are influenced by the degree of internalization of the learner's behaviour. When a behaviour is more internalized, it gravitates toward becoming autonomous; however, the more externalized a behaviour is, the more it lends itself to be controlling.

SDT defines autonomous motivation as engaging in a behaviour because it aligns with one's self-image. Autonomously motivated students are more likely to be engaged with the learning task, regardless of whether the task is easy, complicated, or tedious (Saeed & Zyngier, 2012). Additionally, autonomously regulated students have better self-control and have a reduced cortisol response to the task, decreasing stress (Steel, Bishop, and Taylor, 2021). This form of motivation regroups intrinsic regulation- doing something because we enjoy it, integrated extrinsic regulation- doing an action without expecting anything in return and identified external regulation- having a behaviour because it is personally important (Deci & Ryan, 2012).

In contrast, SDT defines controlled motivation as engaging in a behaviour to receive a reward or to avoid a punishment. Controlled motivation regroups external regulation- a learner motivated by external rewards or punishments, and introjected regulation, behaviours students do to boost their self-esteem or avoid shame. While SDT indicates that any amount of controlled motivation undermines autonomous motivation,

many studies have shown that controlled motivation can also help motivate unmotivated students. Controlled regulators can increase task performance in the short term (Steel, Bishop, and Taylor, 2021). However, controlled regulation increases cortisol responses in students, leading to a stress increase. It can also push learners to form new habits, eventually leading to autonomy (Liu et al., 2017; Alsawaeir, 2018).

Additionally, goal-setting theory is conceptualized and added to the conceptual foundation used for the study. Goal-setting theory can help explain the loss of motivation and engagement when students do not create intermediary goals during long projects (Richter et al.,2015). According to the goal-setting theory, creating specific, context-appropriate intermediary goals can help enhance students' motivation. When students do not have these smaller tasks, they can become disengaged, cognitively overloaded, and lost with the task. Students who create these manageable tasks will see increased task completion, giving them the confidence to continue the task and increasing their likelihood of completing the overall project.

Another motivational theory used in many gamified scenarios is the social comparison theory. According to Krath, Schürmann, and Von Korflesch (2021), gamification can help facilitate social comparison through different game elements that focus on groups. Additionally, since classroom learning is a social experience, especially in second language acquisition, confirming the impact of social comparison on students' engagement would add further knowledge and help explain why participants perform over or under expectations in group activities. Social comparison theory examines how social elements affect a participant's perception of themselves and others (Richter et al., 2015). According to this theory, participants can make four types of comparisons between their

beliefs and abilities and those of others. There is a positive and a negative way to look upwards and downwards. When looking upwards, participants could either be jealous or feel motivated by people who are more skilled than them. For example, in a classroom, this can result in weaker students utilizing stronger students to learn more or knowing that the stronger student will do all the work, lowering learning. When looking downwards, participants could either feel scorn or gratitude. In a classroom, a stronger student could either help their colleague and themselves at the same time by teaching them the material, or it could hurt the stronger student if they do not work effectively with the weaker students because they feel superior. How each participant's self-esteem and motivation are affected by social comparison is dependent on them.

SDT, Goal-Setting, and Social Comparison theory are three motivational theories that lay the foundation for understanding how engagement can occur in students. Students' engagement is directly proportional to their motivation level (Saeed & Zyngier, 2012). Saeed and Zyingier (2012) also showed that engaged grade 5-6 students are more creative, work better in groups, are more curious, and have better problem-solving skills. Student engagement has been shown to have a positive relationship with learning outcomes, positively influencing dropout rate because engaged students are more likely to stay in school even with poor academic performance (Fredricks et al., 2004; Hiver et al., 2021).

The multidimensional model of student engagement was theorized (Fredricks et al., 2004) to give a clearer view of engagement. These dimensions are behavioural, emotional, and cognitive engagement. Behavioural engagement is the more straightforward dimension to observe, as it does not require students to self-report, and its facets can be observed in how students behave (Hospel, Galand, & Janosz, 2016). It affects how students interact

with their peers, teachers, and learning material. Emotional engagement is more challenging to study as it is an internal process that takes time to observe. It is about student's attitudes, interests, and values. Emotionally engaged students create ties with the person they are learning with, increasing their willingness to participate and to attend the learning environment. Finally, cognitive engagement is challenging to study because it is an internal process; it represents how a student connects ideas, reason, and thinks. Cognitively engaged students are active learners, monitoring their learning and pushing to learn more (Hospel et al., 2016). In this study, engagement will always refer to behavioural engagement, as it is the only one being observed.

Finally, while not a motivational theory, incorporating the cognitive load theory into the conceptual foundation would help explain how students allocate their limited cognitive resources (Sweller et al., 1988). CLT divides the mental effort required for learning into three types: intrinsic load, extraneous load, and germane load. First, the intrinsic load is related to a task's inherent complexity. Drawing on the board is inherently less complex than learning about aerodynamics, so a learner's intrinsic load is affected by their learning material. Second, extraneous load is the additional load on students imposed by how the learning material is presented. A teacher aims to reduce extraneous load as much as possible by having clear and concise instructions and reducing unnecessary distractions. Third, germane load is the cognitive resource devoted to processing and integrating new information with previous learning. Teachers aim to maximize germane load by giving well-structured explicit information, helping students integrate the material into their long-term memory. By maximizing germane load and reducing extraneous load, teachers can

keep the total cognitive load associated with the instructional design within their students' maximum working memory (Sweller et al., 1988).

To summarize the integrated framework exploration, the three motivational theories reviewed in the chapter explore how and what affects students' motivation. Since engagement cannot occur without motivation, establishing the link between both before pursuing was necessary (Saeed & Zyngier, 2012). Understanding the effect behind what engages learners makes engaging them in their learning tasks possible. Considering a student's cognitive load can help create instructional strategies that engage them in their task. CLT helps to inform teachers not to overwhelm students and to think about the three types of cognitive activities that learners do every time they learn something (Sweller et al., 1988). Creating explicit, effective instructional strategies can be the first step to engaging students. Highly engaged learners are more likely to avoid distractions, thus reducing extraneous load even without the teacher's help. They are also more likely to accept using more cognitive resources to learn and integrate new material, thus increasing germane load. To help create effective instructional strategies that can enhance motivation and engagement, the use of gamification has been proposed by many researchers in the field (Sailer & Homner, 2020; Kim & Castelli, 2021).

Gamification in Education

Several studies have examined the use of gamification and the incorporation of game elements into non-game contexts in education (Deterding et al., 2011). Gamification aims to use diverse game elements to target motivation and engagement. Gamification recognizes that students are diverse and are not motivated by the same things. It promotes

itself as being able to target the student's various needs and challenges, thus motivating them to engage in their task (Manzano-León et al., 2021). Most studies have examined its effect on high school and university students, with little attention paid to K-6 students. Most studies have found that gamification can increase students' engagement when appropriately used (Manzano-León et al., 2021). However, many studies have also shown that gamification does not impact students' engagement or can even lower their engagement and grades (Kim & Castelli, 2021). Lowering engagement is sometimes caused by the overuse of certain game elements, creating satiation in students (Leclercq et al., 2020). Many authors also agree that there is a lack of research in gamification using theories to justify their findings or that the findings are impractical for education (Alsawaier,2018). Because of these gaps in the research, 64% of the 41 studies they reviewed yielded inconclusive results regarding affective, behavioural, and cognitive outcomes (Dichev & Dicheva, 2017).

Most studies on gamification use technology-based implementations, such as software that tracks progress and web-based applications like ClassDojo (Hitchens & Tulloch, 2018; Tan, 2018; Hamari et al., 2014). Software are presumed to engage students more because they can give instant feedback, they are a new medium, and students can usually make infinite attempts to accomplish their activities. Homer et al. (2016) did a comparative study with four classes (control groups) that were using the regular school token point system and four classes (experimental groups) that were using ClassDojo. They found that the experimental groups at all grade levels behaved better and were generally more positive. The teachers found ClassDojo to be a very effective tool for classroom management. Grades 3-4 students significantly improved *oral* post-tests, and there was no

difference in reading post-tests for Grades 1-2. However, using software can also cause issues like technological frustrations and access inequality (Maican et al., 2016). Restricting gamification to using technology can exacerbate learners' socioeconomic factors since not every learner might have access to that software when they leave the class. Two game elements are reviewed for the proposed study: narrative and choice.

Narrative as a Game Element

In gamification, narrative is the structure of how a story is delivered (Toda et al., 2019). It refers to the order of events in a game. In the case of using narrative in gamification, it is the sequence of events in the story that students go through during a course. As an example, the story can be as simple as telling the students that they are in a maze, and every time they complete an activity, they get to advance in it. The teacher controls the narration and chooses when the students can make choices or progress the story. A class using narrative to frame their instructions would provide order and coherence, facilitating students' understanding (Jarrah et al., 2024). In their quantitative study, Jarrah et al. (2024) collected data from 500 students from the primary sector through graduate programs in Saudi Arabia. In their survey, student answers reported a mean of 4.56 on a scale from 1 to 5 on the influence of narrative on skill assessment, showing a positive correlation with skill acquisition.

Studies have shown that narrative experiences work in the classroom to promote autonomous motivation in students (Manzano-León et al., 2021). It does so by increasing student immersion, lowering stress and anxiety, and increasing their feeling of belonging to the group (Edwards, 2022). The narrative story creates this feeling of belonging and immersion by having students go through the action necessary as a group. Narrative game

elements also usually reward effort by giving feedback through activity completion, not just when showing mastery. Narratives do not care if students have understood the activity and answered all the questions correctly; even an incorrect completion is enough to progress the narrative. Because students do not need to have correct answers to complete the activities, they can create goals and increase task engagement. Negating the risk of failure also increases learners' willingness to communicate. Additionally, narratives do not target controlled motivators since they do not reward learners. All these elements make narrative one of the most important game elements in gamification (Edwards, 2022).

Choice as a Game Element

In gamification, choice is the player's decision to advance the game (Toda et al., 2019). Students can make choices about many other game elements, like choosing which avatar they want to use. However, from a purely instructional perspective, students can make choices to progress their learning activities. The main reason choices promote autonomous motivation is because they target the user's need for autonomy (Patall, Cooper, & Robinson, 2008). Choice has such a profound effect on motivational forces because of its relation to personal causation that even choosing negative options might have benefits. Because of its positive effect on motivation, SDT posits that choices are one of the easiest ways to support a person's autonomy needs. Moreover, people are more likely to persist at challenging tasks when their personal choice is involved in how the activity came to be. Choice is a vast and multifaceted concept, and for the analysis of this proposed study, two choice types will be analyzed: instructionally relevant and irrelevant choices.

Instructionally relevant choices are closely linked to instructional outcomes. These choices can modify the type of text a student reads or the format in which they deliver their

final product. These choices can significantly impact student engagement and motivation as they dictate how the activities will be completed (Patall et al., 2008). Students who are given these opportunities feel in control of their learning, which fulfills their need for autonomy and increases engagement. According to SDT, these meaningful choices impact motivation the most, as they give the most control over a situation. Patall et al. (2008) found that instructionally relevant choices positively impact intrinsic motivation at $k = 9$; $d = 0.24$, 95% CI = 0.14, 0.34. However, they also have argued that instructionally relevant choices may have a negative impact on motivation if the choices have instructional consequences, as making those decisions may be more challenging for students, requiring them to spend more of their limited cognitive capacity to make a choice.

In contrast, instructionally irrelevant choices are less tied to core instructional outcomes. They demand less cognitive effort, are less meaningful, and are easier to make. If these choices still offer autonomy, they increase implicit motivation as they do not offer rewards and are usually more forgiving than instructionally relevant choices(Patall et al., 2008). Choices like choosing where to work in the classroom or the colour of the crayons that a student uses to complete an exam still give them some autonomy but do not affect the outcome of the learning activity. Patall et al. (2008) found that instructionally irrelevant choices impact intrinsic motivation most at $k = 8$; $d = 0.59$, 95% CI = 0.43, 0.74. Some reasons why instructionally irrelevant choices affect participants more are that they require the least amount of effort, they may be meaningful ways for learners to express their personal identities, or they cause less pressure from having to make an instructionally relevant choice.

Comparison with Other Game Elements

Research shows that choice and narrative are practical in the educational context; however, many other game elements also exist. The Point-Badge-Level (PBL) framework is the most commonly used in educational research, especially as it is the easiest to implement for teachers and researchers (Nadi-Ravandi & Batooli, 2022). An example of PBL would be students being rewarded points for executing various activities or exhibiting specific behaviours, receiving badges when showing mastery of said activities or behaviours, and having students be able to go up in levels, granting them more liberty in the class for having showed that they can be trusted. PBL works when it is used to promote short-term learning, but as a system that uses rewards, it targets controlled motivators and requires continuous reinforcement (Leclerq et al., 2020).

In addition, game elements like competition and leaderboards can damage students' self-esteem and motivation if misused (Sailer & Homner, 2020). There are two types of competitions: destructive and constructive. Destructive competition happens when tearing others down creates a winning state. For some students, these game elements can cause social comparison issues, especially when they are constantly shown to everyone in the class (Maican et al., 2016). They can become pervasive and increase anxiety by making people feel like they are lesser than others when they are at the bottom of the leaderboard or because they can not beat the competition. Other students at the top might also feel superior and degrade others under them on the leaderboard. On the other hand, constructive competition happens when used as a collaborative activity where cooperation and mutual support are the winning state. The adverse effects can be avoided entirely, promoting

students' engagement and reducing the impact caused by unfavourable social comparison (Sailer & Homner, 2020).

One of the goals of this proposed study is to provide theoretical knowledge that supports the practical applications of gamification in the classroom. For gamification to be used in the classroom, teachers need to be able to use different game elements and justify their usage. The following section will review the importance of tailoring gamified activities to teachers' instructional strategies while also considering their current workload.

Instructional Strategies and Classroom Implementation

When using gamification to modify classroom activities, thinking of the user experience is often overlooked. Designers must understand who will teach the activities and be familiar with the participants (Kim, 2015). When determining which game element to incorporate, researchers need to consider participants' goals and motivations (Maican et al., 2016). To be able to do this, more research needs to be done from inside the classroom. Using classroom-based research would provide researchers with what engages the students they are observing while also providing ecological validity to their study. By understanding the classroom situation, researchers can cooperate with the teacher to create learning tasks incorporating game elements that students would find enjoyable or engaging. A varied and diverse gaming environment can address the broader needs of a wide range of students, as different students react differently to game elements (Manzano-León et al., 2021). Students who lack motivation are more likely to react well to game elements that give rewards, whereas students who are already engaged with the task are more likely to react to more meaningful game elements.

As gamification is new, not only must the activities be correctly designed for the students, but they must also convince the teacher that it will help. The teacher must be enthusiastic about the research project; otherwise, students will feel that their teacher is not authentic. Effectively, if the teacher and the students believe that gamification is not a legitimate teaching method, they will not see the value of correctly using it, lowering its effectiveness (Leclercq et al., 2020).

Narrative and choice are game elements that can contribute to a teacher's instructional design by promoting students' motivation and engagement. A narrative can provide a coherent class framework for students and organize the teacher's flow from activity to activity (Jarrah et al., 2024). Furthermore, narratives have been proven to reduce anxiety by providing context and meaning to scenarios (Edward, 2022). Reducing students' anxiety in language-learning contexts helps them be more open to trial and error when talking. Students feel safer in a class when their anxiety level is low. It also increases their willingness to communicate and promotes student interactions.

In contrast, low-proficiency second-language learners are more susceptible to feeling overwhelmed and failing to develop the skills to engage with the learning material autonomously and competently when no structure supports them in their task (Jang, Reeve, & Deci 2010). An instructional style that supports students by giving them autonomy or structure increases engagement. Jang et al. (2010) also demonstrate that autonomy support and structure shared a common variance of 36%, based on the $r(133) = .60$. Their data show that both instructional styles covaried with each other and that classroom engagement was strongly and positively associated with them. However, when instructions are not structured correctly for the student's level, it increases the student's extraneous cognitive

load, inhibits learning, and lowers engagement (Paas, Renkl, & Sweller 2003). Giving structures to students by creating a narrative around the complex task can let them feel secure and immersed in it (Jarrah et al., 2024). They have an easier time understanding the task because there is a clear step that the teacher integrates into the narrative. Those transitions help learners re-focus on the task and lower off-task behaviours, especially if they are directly called out to interact with the narrative.

As balancing students' cognitive load is an important part of creating instructional strategies, teachers should mix both instructionally irrelevant and relevant choices to maximize students' feeling of autonomy. As making choices is an extraneous load, recognizing its impact on a student's cognitive load can lead to making informed decisions when initially creating activities. Students should also always have the option of not making choices, essentially letting someone else choose for them. Not letting them have an exit strategy where they can do things like they always did before can lower task engagement, as they feel forced to do something they do not want to do (Alsawaier, 2018).

Ramzan, Javaid, and Kamran (2024) interviewed 28 high school teachers and had mixed results for implementing gamification in their classes. The interviewed teacher found that their students were more engaged with the tasks, even those who usually do not participate. Students also improved across several language domains, such as vocabulary acquisition and grammar proficiency, contributing to increased interactions needed to do the gamified activities. Also, the teacher saw the gamified activities “as making learning more fun, interactive, and engaging, which in turn enhanced students’ motivation to participate and learn”(Ramzan et al., 2024, p.7).

Five challenges occurred for 24 teachers. With the activity using technology, teachers felt that they lacked the resources, such as computers or tablets, to implement the gamified activities in the classroom fully. When they had the computers, both students and teachers experienced frustration from connectivity problems and technical glitches. The third major problem was the teachers' time management. Finding a balance between planning these new activities, implementing them and still doing the standard curriculum was demanding. Many teachers echoed that they simply did not have the time to incorporate the gamified activities in a meaningful manner correctly. The fourth major issue was student skill disparity. Some students are many times more experienced in digital tools than others. It becomes difficult for the teacher to create an equal gamified experience for the students in the class. Finally, the last problem relates to both time and expertise. Teachers needed ongoing professional learning to create effective gamification strategies. Teachers simply lack the knowledge and the training to create gamified activities, causing wide disparities in how gamification was approached between different teachers. Both the positive learning outcomes and the teaching challenges have been mirrored in other studies.

While some of the challenges echoed in Ramzan et al. (2024) could be alleviated by not using technology, designing and implementing gamified classroom activities without technology takes even more time to prepare (Edward, 2022). More robust findings must be made in the k-12 sector to support teachers in utilizing gamification. Only after understanding the impact of the specific game elements will instructional methods optimize the use of gamified activities.

Synthesis and Motivation for the Study

When designing instructional strategies, it is important to consider how information is conveyed to students to avoid overwhelming their cognitive load (Sweller et al., 1998). Teachers should maximize students' germane cognitive load and minimize extraneous loads by creating clear, explicit activities. Utilizing CLT to create motivating and engaging tasks can support a key element of SDT, such as the student's need for competence and autonomy, fostering autonomous motivation. Highly motivated or engaged students can also invest more in tasks if they can handle the cognitive demands. Incorporating both the social comparison theory and the goal-setting theory into the integrated framework gives a more comprehensive approach to achieving autonomous motivation, which is vital since it is a key factor in higher learning achievements (Deci & Ryan, 2000). For less motivated students, having activities that act as controlled motivators can also be suitable for creating good habit formation. Whether autonomous or controlled, engaged students demonstrated increased academic success (Fredricks et al., 2004; Hiver et al., 2021).

Multiple studies have demonstrated that gamification can increase student engagement when appropriately used. Proper gamification considers its audience and recognizes that it is not for everyone, allowing the students to participate or opt-out (Alsawaier, 2018). Gamification can make instructional strategies more diverse, lowering satiation and effectively engaging students, whether it relates to them or because they like the novelty (Manzano-León, 2021). Narrative and choice represent ideal game elements to implement in the classroom, as they do not seem to impact students negatively. Narrative game elements promote inclusivity, provide structure, and lower anxiety (Jarrah et al., 2024), while choices fulfill students' need for autonomy (Edward, 2022). Providing structure to the classroom by using narrative elements can secure low-proficiency ESL

learners, lower cognitive load, and make them feel less anxious. Gamification needs more robust findings before teachers can implement them. A workload balance must be maintained for teachers as many lack the resources, knowledge, and time to teach using gamification properly (Ramzan et al., 2024).

Gaps and Goals for the Study

The motivation for this study is that even though, to my knowledge, many studies support the positive effects of choice and narrative on engagement, there is limited evidence of how these elements perform specifically in K-6 ESL classes in Quebec. The goal in defining the theories and creating a robust conceptual foundation was to be able to analyze and interpret the research data through those lenses and to avoid the gap defined by Alsawaier (2018), where "The knowledge base connecting gamification to theoretical principles is thin, and the empirical research on gamification founded on theoretical principles is scarce." Additionally, there is a gap in the practical impact that including these elements would have on teacher workload and the sustainability of gamification in the long term. There is also limited research on the effectiveness of non-technological gamification strategies and how they relate to teachers' current instructional strategies. Finally, there is a need for more studies to investigate these issues in real classroom settings to bridge the gap between theories and practice.

Research Questions

The research questions in this study are exploratory in nature and relate to the ease of implementation and effectiveness of gamification in one Quebec regular ESL classroom. The goal of answering these questions is to advance field knowledge, link theory to

practice, and promote ideas for future research. The two following questions guided the data analysis, interpretation, and activity creation:

1. What impact do specific game elements (narrative and choice) have on the behavioural engagement of elementary school students in an ESL classroom setting?
2. What are the practical challenges and benefits of integrating game elements into elementary school teachers' instructional strategies?

Chapter 3: Methodology

This study used a qualitative-observational research method to explore behavioural engagement in a classroom setting. Three data collection methods were used to understand the topic comprehensively: direct observation, post-study open-ended questionnaires, and pre-study survey questionnaires completed by the teacher. Having three different methods to gather data strengthens reliability as well as internal validity (Creswell & Creswell, 2018). Each method provided different insights and perspectives, contributing to a holistic comprehension of the research topic (Creswell, 2013). A qualitative approach is used for this study as it is more suitable with younger participants (Saeed & Zyngier, 2012), and it matches the goal of finding preliminary data.

First, direct observations were done in the classroom. Those were separated into structured observations for the four students who were the focus of the observations and unstructured for the rest of the class. They were conducted to observe real-time behaviours and interactions within the classroom environment. The structured observations utilized a grid to fill in. In contrast, the unstructured observations were used to write about the other students in the class and their interactions with the game elements. Combining structured and unstructured observation allowed for a complete data collection on students' interaction in the classroom and with gamified elements (Creswell & Creswell, 2018). It enabled the researcher to record information as it was happening, but some students saw the researcher as intrusive.

Second, participants were distributed open-ended questionnaires regarding their experiences and perceptions of the game elements and their integration in the classroom.

This qualitative approach aimed to provide insights into the subjective aspects of engagement that are not observable (Creswell, 2013).

Third, the teacher completes a survey questionnaire before the study begins. The teacher rates her students' behavioural engagement based on her own understanding of engagement. The answers provide a baseline database and a point of comparison with the observational data (Creswell & Creswell, 2018). They also help to see if the observer's presence in the classroom was skewing the data observed.

By integrating these three methods, the study aimed to ensure a comprehensive understanding of behavioural engagement in the classroom. An observational research method was chosen for its flexibility. Being in a natural setting means the study must be flexible and adapt to classroom rules, human behaviours, and ever-changing events that can occur in an elementary classroom (Creswell & Creswell, 2018). Also, adjusting the study based on what is observable would result in more comprehensive data being obtained.

Location

The study occurred in a grade 5 English as a Second Language classroom in the St-Hyacinthe region. The English proficiency of most students is low. However, they are a very chatty group that tries to communicate as much as possible in English. When told that they are in evaluation, most use English. Stronger students can converse fluently, while weaker students have communication breakdowns. They are also able to ask the teacher questions in English. Their work is diverse, and they like to play games like “Guess Who” in class.

Participants

This study used a convenient sampling process. The teacher was someone known to the researcher. They were approached for the study and agreed to lend one of their classes for the study. None of the students in the study were known to the researcher. The grade 5 students were chosen over other students because a) grade 4 students have a Service Center exam just after or during the testing period, b) end-of-year grade 6 students are closer to being high school students than elementary school students, and c) the open-ended questionnaire targeted their age group. The teacher also recommended them as a group that would most likely participate in the activities.

As an actor in the class, the teacher is one of the participants, but their observations and answers are treated separately from the students. Of the 20 available students in the classroom, 10 gave their consent. Of those ten students, four were chosen for in-class observation. Those students were selected based on their proximity to the researchers to facilitate observations. One of the four students had to be switched out because they only whispered, which made listening to what they were saying impossible. Some of the interactions from the other six students were also observed, especially when they were reacting to or mentioning the game elements. The teacher is referred to in the third person for anonymity, while the students are number-coded. The differences observed between the participants are explained in the study's results section. As expected in a Quebec classroom, the participants come from diverse, multicultural backgrounds.

Participants were not informed about the selection process to avoid influencing the teacher. Participants were told multiple times before signing their consent letters that this

study would not impact their grades. The teacher, principal, students, and parents had similar consent forms to sign. The students were informed the class before by the teacher that someone would come into the classroom to explain the study. Because so many students were absent on the day they received the consent forms, the forms for the absentee were presented and given to their homeroom teacher so that they could relay the information to the parents and absent students. With the English classes being one week apart, the homeroom teacher was reached to make sure that everyone would have the chance to participate if they wanted to. These absentees were eventually explained the study before it started.

These grade five students receive 90 minutes of English weekly at their school. To avoid scheduling conflicts, students have one 60-minute period on week one and two 60-minute periods on week two, alternating between. With them having no homework and being in an area where English is not spoken outside the classroom, students can go full weeks without hearing English, especially when the English class falls on a day when students have off. Additionally, this area has many new immigrants, which makes it even harder for them to learn English. “70.5% of immigrants reported having an “other” language as their mother tongue in the 2016 census”(Statistics Canada, 2017). Immigrants who do not speak French or English must learn both languages simultaneously and continue to learn their first language.

Instruments and Data Collection

The study took place from April 10th to May 8th, 2024. The study was conducted throughout seven classes, and the researcher was in the classroom during every period.

There was one class to give the consent sheet and to prototype the observation material, one class to observe students in their typical environment, four courses with gamified material (Presented in Appendix A to D), and one last class for participants to answer their respective questionnaires (The questionnaires are presented in Appendix E-F). Table 1 gives an overview of how the study was administered in the classroom.

Table 1 Data Collection Procedures

Data collection	Pre-study	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Time (min)
Explaining the study	X	X	-	-	-	-	X	30
Prototype	X	-	-	-	-	-	-	30
Normal class	-	X	-	-	-	-	-	60
Narrative	-	-	X	-	X	-	-	≈120
Choice	-	-	-	X	-	X	-	≈120
Students' questionnaire	-	-	-	-	-	-	X	20-25
Survey-questionnaire	X	-	-	-	-	-	-	≈20
Teacher conversation	X	X	X	X	X	X	X	≈90
Teacher questionnaire	-	-	-	-	-	-	X	15 <
Classroom observation	-	X	X	X	X	X	-	300

Questionnaire

Between the first and second classes, the teacher had to answer a survey questionnaire about her students' behavioural engagement before the study. This questionnaire was done to create a baseline for the participants. The teacher would use her judgment to rank her students from 1-5 on both group and teacher-fronted interactions. Creating this list helped to have a varied engagement profile in the students that were picked to be observed, and it would facilitate explaining their in-class behaviours. This same survey questionnaire was also conducted at the end of the study period to observe if changes happened. Unfortunately, the after-study survey questionnaire was completed weeks after the study, which removed its validity. The after-study questionnaire was not kept for the study since it was not done in the correct timeframe for a proper representation.

During the last class, participants had 20 minutes to complete the open-ended questionnaire since this was the amount of time the teacher could give to the research. The teacher completed her questionnaire at the same time as the students. With only six questions, participants should have been able to answer every question, but many participants gave answers that were not useful. A visual image of each game element was presented on the whiteboard while the participants answered the questions to make them remember the different activities. Each question was explained, and the researcher was available in the class to answer more questions if necessary.

Unfortunately, having a big block of time for the students to answer the questions did not work as expected. Some students finished extremely quickly but had barely any text on the paper. Once that happened, other students started to give their sheets even if it

was not completed. However, a better way to do the questionnaire would have been to allocate a smaller time, for example, three minutes per question. This way, students would have had a similar amount of time to complete the questionnaire. Still, it would have been easier to answer questions and clarifications since everyone would have been on the same questions simultaneously. Even students who had not consented had to complete the questionnaire; they were just not told that their questionnaire would not be looked at. This was done to ensure fairness in work and to keep everyone occupied. The students' questionnaire was about what they thought of the game elements and if they would like to see more of them in the future. The teacher's questionnaire questioned her on the feasibility of integrating those game elements in more classrooms. The teacher was also contacted between the first and second classes to complete a survey questionnaire, which was an overview of her students' in-class engagement before the study (See Appendix H). All the materials used for the study were created for the study. The following sections will define the materials used to obtain data and the materials used by the participants to participate in the study.

Observations

The researcher filled the observation grids during five visits. These observation grids were used to collect student behavioural engagement data. More specifically, the grid looked at how often the targeted students spoke in class, the number of words said, and the language used (Presented in Appendix G). The grid also had an extra area for comments, words said by other students, and interactions between students. Four students were chosen to increase information validity since the observations became incomplete when testing to observe more than four. Direct observations were chosen over recordings to get the most

participants to agree to do the study in the class since the participants were minors. Observations were done throughout the period, only separated by the students' activity on the recording sheet. Those demarcations appear on the physical copies to help track when students were more vocal but were not kept for the analysis since each student's data was accumulated to make a total per student. Being directly in the classroom made understanding how the classroom procedures worked easier. It also made receiving informal comments from the teacher and the students easier. However, being in the classroom also negatively affected the study's outcome because the teacher explained that some students did not like being observed and removed their consent.

To observe the students, the observer sat in the front corner of the classroom and recorded the information on the printed grid, using a pad to hide the information from the participants. The students' actions were separated into teacher-fronted interactions and group interactions. Teacher-fronted interactions happened when the teacher was teaching in front of the classroom, and group interactions happened when students worked in groups. Appendix G presents the grid and how students were coded. For example, a student who raised their hands to answer a question asked by the teacher and answered using an English sentence would get coded R2.

In contrast, a student who responded *non*(French for *no)* to a group interaction without raising their hands would get coded 1o. Students who interacted on subjects not related to the work would not get coded. Formulaic chunks and other two-word instances, such as *Yes teacher,* are treated as one-word interactions.

Game Elements

The study focused on two game elements: choice and narrative. Other game elements were also present but were not the focus of the activities. The most common one that reoccurred was *teams.* The game elements are integrated into the everyday activities that the teacher did and did not take away from the teacher's class. The activities either took a minimum amount of time or were created to help manage transitions and time. With the teacher's help, the researcher created each activity for the specific period it would be taught. These activities followed the theme of the students' projects and were made to fit in with the class's standard procedure.

During Day 1 and Day 3, the class explored narrative game elements. During the narrative experience of Day 1, the teacher went through a PowerPoint. The teacher presented PowerPoint slides during the transitions between class activities. The teacher provided a schedule of what would happen during class to ensure there would be enough transitions. The number of PowerPoint pages was based on the number of different transitions the teacher would do during the period. Six slides were created for the five activities, with the two last slides playing together (See Appendix A for slides). The teacher had the freedom of how she would present the slides, but she was given pointers. Those pointers included explaining that each slide of the presentation would have students accumulate one slice of cheese to form a giant cheese wheel and that one student per transition would go to the board to interact with the board physically. The narrative piece presented to the students was that the cheese was missing from the competition because a thief had stolen it and that every time students completed an activity in class, they would find one of the cheese slices. Every time a transition occurred, one student would come to

the front of the class and physically make the PowerPoint progress by touching the whiteboard. Unfortunately, this step was not done during the study; the teacher made the slides advance herself. The image was separated into four slices, with one final page having a GIF of the cheese rolling down a hill. As the students got closer to the end of the period, they would get closer to having a complete wheel. This subject was chosen because students worked on weird sports, focusing on a cheese-rolling competition. Relating the subject to the narrative was a means to increase meaning for students (source). Because the teacher was comfortable improvising, she was not given a strict script.

During Day 3, the teacher went through the second narrative element with her class. Students drew the Olympic flame and five Olympic rings on the whiteboard throughout the class. The Olympic symbols were chosen to provide meaning to the students for three reasons: a) the unit was on sports, b) the summer Olympics were that summer, and c) the school was doing a month-long event on sports. Again, the teacher was not given a strict formula to follow, but there were more guidelines on proceeding with the narrative. She started the drawing to demonstrate what she was expecting of the students and drew the cauldron for the flame (See Appendix C for the final product). First, only one student from each group would come to the front to draw a piece of the sum. Second, students would come in intervals of x amount of time. The amount of time between two drawings would be decided depending on how much time was left in the class for students to work on their projects. Third, when students were called to draw on the board, the teacher would remind everyone of the amount of time they had worked or how much time was left in the period. The use of this narrative was to have students create something collaboratively and to work as a time management tool for the class.

The choice game element was used during Day 2 and Day 4. On Day 2, students could choose between working on two different texts. The type of choice that students made during Day 2 is an instructionally relevant choice, which might not affect students' intrinsic motivation as much (Patall et al., 2008). Instructionally relevant choices are choices that affect the version of a task or activity that students do. In this case, the teacher usually only gives one text to each team. This time, however, each team received two texts. The extra texts were created with the help of Chat GPT to have the same structure and type of content as the original text. Essentially, the teacher's six texts on six different weird sports became 12 texts on 12 different weird sports. All the sports chosen are real sports, and AI was only used to create text templates, which the researcher and the teacher then refined. After receiving the text, students had to read both in teams and vote for the one they wanted. Every student was given two small square papers with the number 1 and number 2 to reduce peer pressure. The teacher explained to the students that they would be blind voting for the text they wanted to work on for their long-term project. Each team would vote when ready, as not everyone reads at the same speed. The teacher told the students to flip simultaneously and that the text with the most votes would win. After voting, one student would report to the teacher in front of the class, and their answer would be locked in (See Appendix B for students' choice). Since students would be working with this text for at least three classes, creating a poster, and having an oral presentation, the goal of this choice was to give students more control over their activity.

On Day 4, students were making three choices. Each of the choices on Day 4 was instructionally irrelevant, which meant it could target students' intrinsic motivation to a higher degree (Patall et al., 2008). Instructionally irrelevant choices are choices that have

no impact on the tasks or activities done by the students. The teacher proposed the first choice to the students. Students had to choose between working in their class, in the hallway, or their homeroom class (just across the hallway). The teacher picked a student, and that student chose with their team where they wanted to work. The teacher was told to make her choices randomized to alleviate unfairness. Since she had wooden sticks for her students, she picked from those. Each choice was then locked in on the whiteboard. Once each team had chosen where they worked, they went to their team's destination (See Appendix D for students' choice). Unfortunately, the homeroom class was unavailable that day since another teacher occupied it. Students could then choose only between the classroom and the hallway. Once they decided where to work, the teacher marked on the whiteboard what they had chosen. The second choice students had was whether they would practice their oral presentation using a recording device. Unfortunately, none of the students practiced during the period because they took more time than expected to create their posters and script. The third choice the students made was about the colour of their poster. When a group was ready to start their poster, they came to the front of the class and picked whichever colour was left in the pile of posters. There were two posters of many colours (white, red, blue, green, pink, beige). With the limited number of posters available, it also had the effect of being first come, first serve. Students who got the work done in the correct timeframe got priority.

Analysis of Observations and Questionnaires

The data was transcribed into an Excel document on May 17th, 2024, to analyze the data from the different sources. The students' answers were written down word for word and categorized as green or red to clean the data. Green answers were answers that could

be used for the research, while red answers were answers that could not be used for the study. For an answer to be helpful for the study, it had to 1) answer all the question components, 2) relate with the question/make sense, and 3) help answer either of the research questions. The researcher re-evaluated those answers four days later, on May 21st, for consistency. There was no budget to get an outside source to look at the data. Initially, 36 out of 67 answers were deemed pertinent for the study. After re-evaluation, that number lowered to 33. The numbers lowered after reflection because some initially green answers did not explain anything after a re-read. An example of this is when an answer to: Do you want more narrative? the answer was: "Yes, because it would help me understand." However, after re-evaluating all of the student's answers, it became clear that they thought the narrative element was the L.E.S and not the game element. Following the transcription of the answers, the answers that came up the most were interpreted to find how they answered the research questions and to find a consensus. The data was interpreted solely by the observer, which might create bias and reduce validity (Creswell & Creswell, 2018); however, since the students' answers to the questionnaire were short, there was not much room to incorrectly interpret their meaning. The teacher's answers were treated separately from the students' since they were different and did not discuss the same subject.

Following the transcription of the answers, all the data from the observations were simplified, cleaned, and separated into four subsections: Teacher-fronted interactions in English, Group interactions in English, Teacher-fronted interactions in French, and Group interactions in French. Only the four students who went through structured observations had points and comments attributed to them. Students in the unstructured observation had observation notes for when what they said showed engagement or lack of engagement with

the game elements. Not everything said in each class is noted for the unstructured observations since the observer was alone to take notes. The difficulty of being everywhere at once and trying to collect as much data as possible, especially when students were working inside and outside the classroom, showed the limitations of being a first-time observer without recording devices (Creswell & Creswell, 2018).

Each interaction was attributed a different point value. *No interactions* happened when the teacher asked the students to participate, and they refused to interact. *Raising hands* was often combined with *one-word interactions* or *full-sentence interactions,* but were also sometimes on their own, especially when the teacher would ask the class a question and multiple students raised their hands. They were only valued at one point because students raising their hands were still engaged with the material, but it did not display how much oral interaction the students would be performing. Since the focus of the observations was on oral interactions, both one-word interactions and full-sentence *interactions* were valued higher. *One-word interactions* were valued at 2 points because the class's skill level was low; some students had difficulties performing more than that. It still showed that they wanted to participate in the activity, demonstrating engagement. *Full-sentence interactions* are worth 4 points because they demonstrate that the students are engaged with the task and that they took the time to reflect on what they were going to say. They are worth more than 3 points because *full-sentence interactions* are more complex to do than *raising hands* plus *one-sentence interactions*, so their point value must be higher. The total from each section for each day was then organized in search of a pattern. Different charts and groupings were tested, such as using the median, not separating the languages,

separating each data for each day, separating the data between structured days and unstructured days, and using line graphs to look at data trends.

Chapter 4: Findings

The learners' learning environment is described before reporting the findings to understand better the context in which the study results were obtained. These include a description of the disposition of the classroom and the type of activities the teacher likes doing. Following this will be the analysis of the data. The first part of the data presented will include the direct observations done in the English classroom by the PI, different graphs presenting what was observed, and a pre-study table completed by the teacher on their students' behavioural engagement throughout the year. These graphs are grouped into two figures to help present a more complete picture of what happened during the classes. Following the descriptions of the graphs, a narrative description of each lesson is presented, emphasizing how each game element was presented to the participants and their reactions to them. After going through each lesson, a description of the four student participants will be given, which will help explain the differences in the data presented in the figures. Each case will explain how they interacted with the different game elements and other participants. The teacher will also be described, not only because they were the ones to do the lessons but also because their point of view is considered, and they had their questionnaire to answer. In the second part, the answers to the participants' questionnaires are summarized, and examples of answers written by the students are given.

Learning Environment

The group chosen for this study is the teacher's best group. They are a group of 20 grade 5 students. This group has 90 minutes of English class per week. They are part of the regular program for learning English as a second language. The teacher has their classroom

filled with posters with functional language. There is also a library in the corner of the class filled with English books of all levels. The class has an Interactive whiteboard and a blackboard. There are 20 desks in the class, which are separated into two groups of rows. Having these rows gives a lot of space for the teacher to walk between her students and let students work in groups without having to stand up and move around. The teacher uses this arrangement because she constantly makes her students work in pairs. It increases students' interactions and decreases the time lost caused by moving students around.

Direct Observation

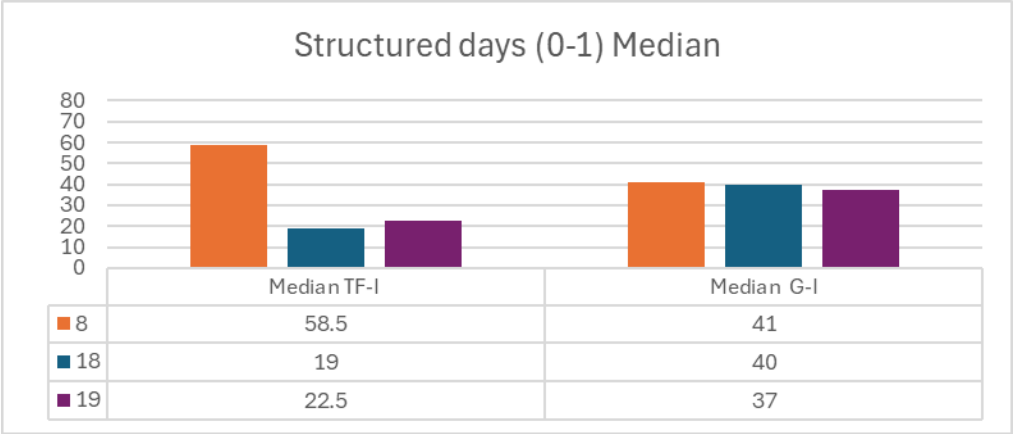
Figure 1 reveals the number of TF-I (teacher-fronted interactions) and G-I(group interactions) between two sets of days. The first two observation days were when the students were doing structured activities. It means they were sitting at their desk and working on activities individually or in groups. During those days, the teacher taught in front of the class, and students were taking notes, asking questions, working for a certain amount of time on activities, and correcting as a class. The following three days were unstructured. Students were left to work on their projects on unstructured days without supervision. Students were able to work in the hallway or on the floor. The teacher walked between the groups and took notes or tried to help them complete the project. The median was taken for each group of days to determine how much interactions changed based on the type of work students did. In each graph, the value of the points given for the different types of interactions remains constant. Participants received 1 point for raising their hands, 2 points for having a one-word interaction (including chunks), and 4 points for having multiple-word interactions.

Student 8 (S8) has 58.5 points for TF-I and 41 points for G-I on the structured days, dropping to 4 points for TF-I and 24 points for G-I on the unstructured days.

Student 15 (S15) does not have value for the structured days since that student was not observed during that time. They have 9 points for TF-I and 33 points for G-I on the unstructured days.

Student 18 (S18) has 19 points for TF-I and 40 points for G-I on the structured days, dropping to 10 points for TF-I and 20 points for G-I on the unstructured days.

Student 19 (S19) has 22.5 points for TF-I and 37 points for G-I on the structured days, dropping to 0 points for TF-I and 13 points for G-I on the unstructured days.



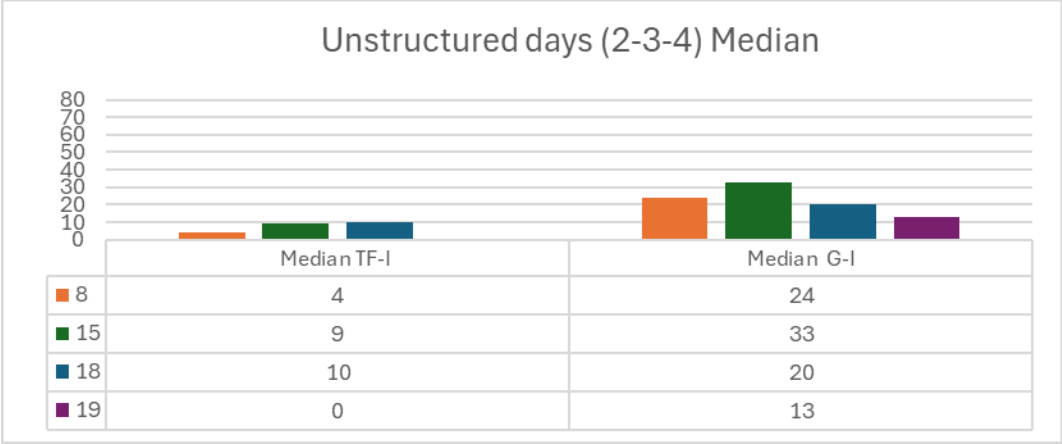


Figure 1 Median of the number of interactions

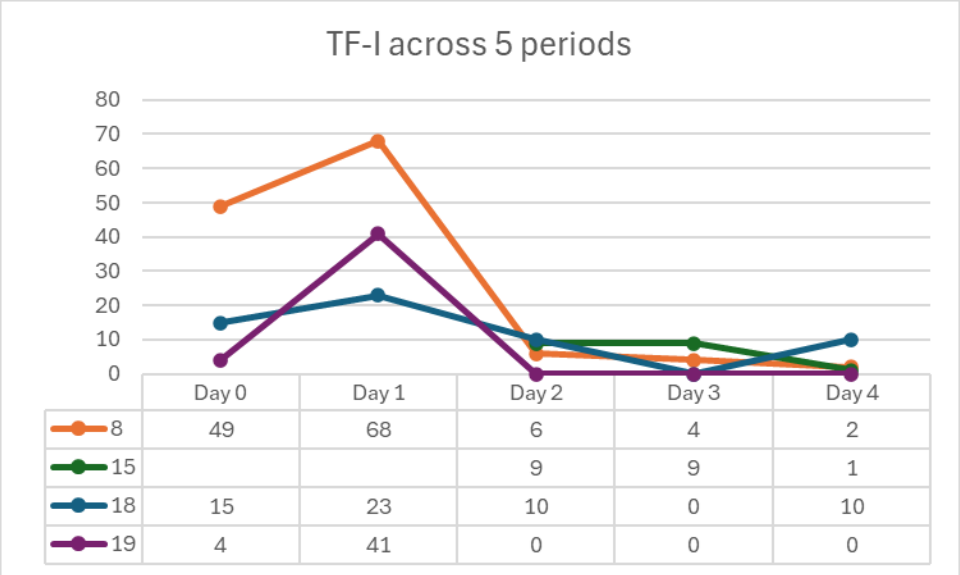
Figure 2 reveals the number of interactions participants had each day, separated into two graphs, showing TF-I and G-I across five periods. Every participant with data had a sharp decline in their TF-I after Day 1.

S8 TF-I ranged from 68 points on Day 1 to 2 points on Day 4. S8 G-I ranged from 42 points on Day 1 to 16 points on Day 3.

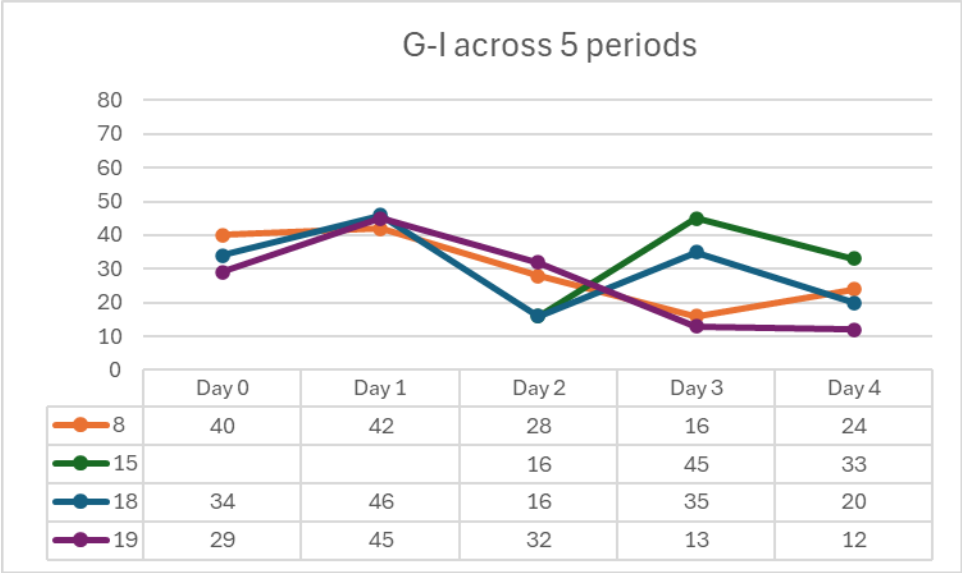
S15 does not have data for Days 0-1. Their TF-I ranged from 9 points on Day 2-3 to 1 point on Day 4. S15 G-I ranged from 45 points on Day 3 to 16 points on Day 2.

S18 TF-I ranged from 23 points on Day 1 to 0 points on Day 3. S18 G-I ranged from 46 points on Day 1 to 16 points on Day 2.

S19 TF-I ranged from 41 points on Day 1 to 0 points on Day 2-3-4. S19 G-I ranged from 45 points on Day 1 to 12 points on Day 4.



	Day 0	Day 1	Day 2	Day 3	Day 4
8	49	68	6	4	2
15			9	9	1
18	15	23	10	0	10
19	4	41	0	0	0



	Day 0	Day 1	Day 2	Day 3	Day 4
8	40	42	28	16	24
15			16	45	33
18	34	46	16	35	20
19	29	45	32	13	12

Figure 2 Number of interactions

Table 2 presents a survey completed by the teacher one week before the start of the observation periods. The teacher rated their students' behavioural engagement throughout the academic year. The teacher used their judgment to rate their students on a scale of 1-5, 5 being very engaged and 1 being not engaged. The E represents "*English as the primary language used in their interactions," and the O represents "Other languages as the primary language used in their interactions."* Students might also be attributed an E even if they must be told to speak English, so long as they try to use English to interact with their peers. Other languages include French, Spanish, Arabic, and Swahili.

Table 2 Before study survey on students' behavioural engagement done by the teacher

Participant	TF-I	G-I
1	5-E	5-E
4	4-E	4-O
5	3-E	4-E
6	3-E	4-E
8	5-E	5-E
9	1-O	2-O
10	5-E	5-E
15	4-E	4-E
18	3-E	3-E
19	3-E	3-O

Lesson by Lesson

There were no modifications on Day 0; the purpose of this period was to see how engaged students were on regular days when doing teacher-fronted activities. This day began a seven-period-long learning and evaluating situation (L.E.S.). Teachers typically use the first periods of a new L.E.S. to hook students to the project by incorporating fun new activities, such as crosswords and linking images to new words. Students also found the subject of the period fun, often laughing about it (the subject was a cheese-rolling competition). Except for Day 1, this period was the period where the students were the most engaged. The participants worked on learning new vocabulary they would have to use during the rest of the L.E.S. and discovered that many weird sports exist.

On Day 1, students were introduced to a narrative PowerPoint (see Appendix A for the PowerPoint slides) that would be used throughout the period to signal a transition from

one activity to another. Day 1 was also the day where the students were the most engaged in teacher-fronted and group interactions. The teacher was responsible for showing the PowerPoint and for enacting the scenario. She later admitted that she did poorly in integrating them into the classroom. It was observable because many lower proficient students were visibly confused about why the PowerPoint was there in the first place. The teacher would show a slide between every transition and tell the class they had found another piece of cheese. At the end, the teacher told the students that they had finally found each piece of cheese.

During the period, students were working on the same subject as Day 0, except this time, they had to read a text in groups and find information to fill out a grid. The specific subject of the narrative element increased their engagement with the game element because it was linked to what they were doing in class. Even though the narrative seemed to have little to no impact during the class, the last slide created a class discussion with the teacher. A GIF of cheese rolling down a hill made students want to play the same activity outside. They asked the teacher if she had a big cheese and asked her if she could go and buy a big cheese. She told them they could ask the school principal for a big cheese.

On Day 2, there is a sharp decline in teacher-fronted interactions and group interactions. On this day, students were made to work in teams. They were explained the task they had to do, and then half the class went into the hallway, and the other half scattered in the classroom. Students interacted with each other, but because the teacher was not close to them, their interactions were mainly in French and off-task. The game element, choice, was added to this classroom. Students had to choose between two texts, whereas usually, they would receive only one text. That increased the amount of input they received during

the class because the teams had to read both texts before they could vote on it. In each team, students got to blind vote with little sheets of paper with a 1 and a 2 written on each side. No conflict erupted from this, even though it was a group choice and not an individual choice. The voting process engaged some students, but increased engagement did not continue after the voting happened. For example, S10 and S8's highest engagement during that class came from having to read two texts and executing the voting process correctly. S8 went from the hallway to the front of the class to ask the teacher for clarifications on how the voting process worked, while S10 orchestrated the voting: "*Choose your number. When I say go, flip it. 3-2-1-go", "We have to choose," "Don't say it."* That group was disengaged and very off-task for the rest of the period. They spent most of the period engaging in conversations that had nothing to do with the class.

On the other hand, one of the teams (which included S15-S18) had an interpersonal conflict, which resulted in each of them picking a text, avoiding the voting process, and avoiding interacting entirely. After a long time, the teacher had to discuss with them to try and resolve the conflict. With the conflict resolved, they decided on the single text they were using and started interacting with each other. It is reflected in the graph in Figure 2, with Day 2 being S15 and S18's lowest score for group interactions. The teacher found the implementation of the choice element easy. It also created more material for her and did not take extra time from her regular classroom. Having choices did not disrupt the classroom because students are used to it.

On Day 3, students had another narrative game element included in the period. Students had to go to the board to draw an Olympic flame and rings. Coming off fresh from having started the school-wide "sports week," many students were able to connect to the

narrative. The teacher had to orchestrate the narrative again and started strong by activating students' prior knowledge and reminding them of previous activities they had done with the Olympics. During that recall period, students were very engaged with the subject of the narrative. Both here and during Day 1, most students were engaged with the subject of the narrative since it was relatable to what they were doing in class. One student per team had to draw a component every 6 to 7 minutes. Teams close to the board would comment almost every time another student would come to draw on the board. For example, S6 (who was next to the whiteboard) got up to make sure that the third ring was well drawn, and they also raised their hand to draw the last ring, even though they had already gone to draw their ring. However, teams far from the board or out of sight of the board did not interact with the narrative element unless it was their team's turn.

As a pedagogical tool, the drawing of the rings served as a time reminder, both for the students and the teacher. It was helpful to the teacher because she admits to having trouble keeping time. It was also beneficial for easily distracted students, reminding them they needed more time to complete the project. S4, for example, went "*Reste juste 10 minutes, oh non" "(There are only 10 minutes left, oh no)*", and then proceeded to encourage their team to work hard for the time left. As a time reminder, the narrative game element helped students who had lost focus to re-focus on the task. It also served as a focal point for the teacher to grab students' attention. The drawing of the fourth ring was used to bring every student back to the classroom, and the drawing of the fifth ring let the teacher have everyone's attention before the bell rang. She also used it to signal the students, "*With the final ring drawn, you are ready to start the month of sports."* The game element was also straightforward for the teacher since they only needed a board where students could

draw. The narrative had the most success in increasing engagement when the teacher took the time to have every student in the class focus on the time aspect of the game element. Every team was supposed to complete their draft and start their poster in the following class, but only one team was where they were supposed to be.

On Day 4, students had another choice game element in their class. Again, students were working in teams, with no teacher-fronted moments. Students were given choices on two opportunities. They were able to choose where they would work, in the hallway or the classroom, and they could decide the colour of their poster. Usually, students rush to work in the hallway when the teacher lets them loose. However, this time, the teacher blind-picked groups and the students who won the draft got to pick where they wanted to work. The first three groups that were picked all chose to work in the hallway. Those were all different groups than during the prior days. Blind picking and giving choices to the students allowed some new students to work somewhere they could not before. The teacher found the implementation of this choice to be non-disruptive. She already has wooden sticks with every student's name on them, so doing the blind pick only took 2-3 minutes at the beginning of the class.

The other choice became a choice of first come, first serve. Students who had completed their draft could pick the colour of their posters. There was a limited amount for each colour, and all the white posters were gone first. Every group voiced their opinions and chose based on preferences, except for the last group, who decided something quickly. An example of that was shown by S6 teams just after S8 teams took the last red poster: "*No, we wanted the red!"* S6 settled on their second choice, which was a blue poster. The interactions to decide the colours were quick, but they still made the students negotiate

with their teams for the desired colour. The teacher found the implementation of this choice to be simple. She only had to get the posters in the Art section and pick multiple colours; there was no extra work in the class for her.

Table 3 summarizes the five class days, showing how the classroom activities were gamified and what the students did each day.

Table 3 Gamified lessons

Days	How the classroom activities were modified	What were students doing
0	No modification on this day.	Students worked on creating a sport and taking notes on new sports vocabulary.
1	Students were presented with a narrative PowerPoint. After each in-class activity, the teacher would make the PowerPoint progress. The narrative was that students found pieces of cheese to complete a roll, eventually leading to a gif of cheese rolling down a hill. (Appendix A)	Students worked on a text about a cheese-rolling competition. They completed activities in their booklet individually and in teams.
2	Students were given a choice between two sports. In teams, they had to vote on which sports they would take. Initially, there was only one sport, with no choices for the students. (Appendix B)	Students read two texts in teams. They were working in their teams for the whole period. They were able to work anywhere they wanted in the class and the hallway.
3	Students were presented with a blank page on the interactive whiteboard. Every X number of minutes, one student from a group would come and draw a piece of the Olympic rings and flames to signal the passage of time. (Appendix C)	Students worked in teams to continue the activity from Day 2. They worked on the text they chose and made a draft which would used for a poster they would make the following class.
4	Students got to choose where they were going to work. The teacher made blind picks, and the teams had to choose between working in the class or outside the class. Students also got to pick the colour of their posters. (Appendix D)	Students continued to work on their draft, and once completed, they picked a poster to write and draw on.

Individual Participants

Student 8 (S8). S8 is among the strongest students in the class. They very rarely speak French and participate constantly. They raise their hand a lot to interact with the teacher and answer class questions. The teacher rated S8 on TF-I and G-I as a 5/5E on engagement. In most classes, the teacher eventually ignores that student and lets other students speak because S8 wants to answer every question. Throughout the activities, S8 engagement lowered a lot. Figure 1 demonstrates how S8 thrives under structured days. They went from 99.5 points during structured days to 28 points during unstructured days. S8 is too strong compared to the rest of the class, reflected when they had to work without the teacher's supervision. S8 was very often off task when they were not under supervision. They liked to take control of the activities, such as micro-managing the team and reading the texts to the other students. During the observations, it became clear that S8 does not work well in teams, especially when their friend is in their team. Because of the disparity in proficiency between them and the task, they prefer to be off-task and talk with their friend since very little occurs for them. They could complete the tasks rapidly, but they either lost time trying to micromanage the weaker teammates or waited until the end of the period to complete everything quickly. Often, during the days of observations, S8 worked and advanced the project when they decided to walk away from their team and work alone in silence.

Game Elements

Narrative. S8 complained about the PowerPoint on Day 1, saying, "*It's just a PowerPoint*." The PowerPoint was not enough for them, but it still sparked interactions. However, whenever the narrative came up, they would go "*cheese, cheese, cheese."* Even

in their questionnaire answers, they wrote down to Q1 (See Appendix E for the students' questionnaire and Appendix I for the participants' answers) "*Oui, car j'aime les PowerPoints"("Yes, because I like PowerPoints")*. The narrative gave S8 the desire to go and do the activity outside: "*We want to play real cheese rolling."* They interacted a lot at the end of the class with the whole class and the teacher about going to do the cheese-rolling outside on the hill. They asked the teacher if they were getting a big cheese to play with. "*Are we going to play with a big cheese?"* The subject of the narrative captivated S8 the most because they found it fun, and it made them laugh.

For the narrative on drawing the Olympic symbols, S8 did not get to see it because they were working in the hallway. Day 3 also had the participant's lowest score on the group interactions graph. Their group was the last one to draw the ring, which also meant that it was the signal for the end of the class.

Choice. S8 liked having choices. In Q4, they answered: "*Oui, car sa fait du changement*" ("*Yes, because it changes things up*"). Even though they were off-task on Day 2, they interacted correctly with the voting mechanism. They went to ask for more information from the teacher on how to vote correctly. They and another teammate made sure that the voting went well and that it was blind. S8 was holding their paper to vote for the sport they wanted. They also took the time to read each text before voting. Through those actions, S8 showed they were engaged with the game element. However, that engagement did not last for the rest of the period, even though this specific day had the highest number of interactions for the unstructured days for S8 for both TF-I and G-I.

S8 and their team could not choose where they were working on Day 4 because the teacher punished them for their behaviours during Day 3, but they still could choose the

colour of their poster. S8 was not focused on their task during the period and was constantly trying to see what other teams were doing, even though they were explicitly told not to look at what other teams were doing. However, they spoke up to their teammates when it came time to take the poster. One of their teammates had brought back a blue poster without consulting with the team first. S8 did not like that choice, "*Why the blue? Take the red!"*. They had a small interaction around the colour of the poster and finally settled on red. After that, S8 stopped trying to see what other teams were doing and started interacting more with their team. Here are some samples from their interactions after having chosen the poster:

"*Yes, take the blue marker."*

"Me too, me too; I want to draw."

" I want to do ...(fights to get pen)."

Student 15 (S15). S15 is above average in terms of language proficiency, and they are a student that interacts a lot and is learning to be a social leader. They lead other calmer students but clash with them because S15 dominates without realizing she is doing it. S15 cares about what the teacher thinks of them and is not shy in talking to other adults. They are generally very engaged with the classroom, with the teacher rating them as a 4E for TF-I and a 5E for G-I. They also try to speak English and encourage others to speak English, as seen in their interactions with S18: "Okay, *you design" and "Speak up!".* S15 also likes to get attention from the teacher, as seen in how they interact with her: "*Teacher, I went OMG"* after having said "*OMG"* in their group. S15 has less data because they were not observed during the first two days. On Day 2 of observation, S15 and S18 had a conflict

that affected how they worked in their teams. The data in Figure 2 shows that S15 only had 16 points for G-I on that day. This conflict was eventually resolved, and the data shows it, too, as S15 interaction exploded to 45 points on Day 3. S15 cares about their work and is very rarely off-task. Even with the conflict on Day 2, which considerably slowed their work progress, S15's group was the first group to finish their draft, the only group to do some extra activities, and the first group to finish their poster. They like to draw and colour, which partly explains why they were so engaged in creating the poster. While working on the poster, they had to design, draw, and colour before presenting it to the class.

Game Elements

Narrative. There is no data for the narrative with the PowerPoint for S15. S15 does not mention the PowerPoint in their answers to the questionnaire, and they were also not very vocal about it during the period, or notes would have been taken about them. In their answers to the questionnaire about the narrative game element (Q1, Q2, and Q3), S15 only mentions the second narrative.

S15 Q1: "*J'ai trouvé sa cool effectivement d'allé au tableau, mais sinon sa n'a pas vraiment changer grand choses".*

("I found it cool to go to the whiteboard, but otherwise, it did not change anything.")

During Day 3, the group with S15 was at the back of the class, facing the opposite direction of the game element. S15 drew the third ring on the whiteboard, and as seen by their answer, they found it *cool*, but otherwise, it did not impact them. S15 did not need the constant reminders to work or think about the time left in the class because they were engaged with the task. They had 45 points in G-I for this period, and this high number of

interactions was reflected in their work. They were the only group to finish the task given to them by the teacher. What this participant liked about the narrative was not the time reminder or the subject of the narrative, but it was that they got to go draw on the board. In this case, the interaction with the narrative was what the student found interesting.

Choice. S15 likes having choices because it allows them to choose how they want to approach the project and because being able to choose the sport they will pick increases the likelihood of it being interesting. Because of the conflict in their group, S15 did not participate in the voting process, but they eventually chose between two sports. Being able to choose within their team was something important for S15. In answering Q5, they wrote, *"Oui, parce que ses toi qui choisies tes choses avec ton équipe" ("Yes, because you get to choose your things with your team")*. This aspect of choosing with their teams also comes back when they have to choose the colour of their poster. S15 talked with their team to decide which colour they were choosing. They were discussing between choosing white or blue and were excited enough to high-five when they finished their draft and saw that the colour they wanted was available to them. They did not get to choose where they were working because their team was not picked, but it did not seem to affect them because they always went to work in the same general area of the classroom.

Student 18 (S18). Student 18 is a student who does not have much confidence in their ability to speak English. They would start interacting and engaging with the tasks after being encouraged by the teacher or their friend. On Day 1, S18 only started interacting after being grouped with their friend. They had a face of disbelief that they had been grouped, but grouping them was good for S18 engagement, except on Day 2 when they

argued with their friend/colleague. That argument disrupted their group work for most of that day.

S18 is a very artistic student. They always had a sheet to draw on and would often be reminded by the teacher to stop drawing in their book and to engage with the task in front of them. For S18, the poster's design and colouring engaged them in the task. Their answer to Q1: *"Oui, parce que j'aime déssiner, donc…"("Yes, because I like to draw, so…")* and Q6: *"Oui, parce que je voudrais plus faire de dessin entre tout le monde*" (*"Yes, because I would want to draw more between everybody")* reflects that artistic nature. The teacher rated them 3E out of 5 for both G-I and TF-I, which means that their engagement in the English class is average but that they use English when told to.

Game Elements

Narrative. Based on the observations from Day 1 and Day 3, S18 was unaffected by the narrative game elements. It is also impossible to know if they were affected by it because they did not understand the questions from the questionnaire. Their answers show that they thought the narrative game element was the L.E.S. done by the teacher rather than the two added game elements. S18 did not seem to engage with the narrative elements during both days. The PowerPoint presentation did not interest S18: they often looked down and drew in their book when the teacher presented it.

They also did not engage with the narrative element on Day 3. They were sitting at the back of the class and were not looking at it. They were focused on the task and completed it before the end of that period. They did not need the time reminders to stay

engaged with their task. Also, they were not among the students chosen to draw on the whiteboard during Day 3.

Choice. Through the observations on Day 2 and Day 4, S18 showed that they wanted to make choices. S18 did not interact with the voting process because they were arguing with S15. They chose a text that would eventually be discarded, and the team would work on the text S15 chose. In their answer to Q5: "*Non car eu qu'on a fais étais deja drole et cool a faire" ("No, because the one we had was already cool and funny to do")*, S18 writes that they did not like having choices, only because they preferred the first text over the second text. However, if given the least preferred text first, S18 would have liked to choose the text they preferred.

On Day 4, S18 was engaged with choosing the poster, not for the action of selecting but because the nature of the object they chose made them very engaged. When they saw the different colours for the posters, S18 started pointing at them while saying "*Colouring"* and *"Posters."* They discussed in broken English with their partners to decide which colour they were going to take: "*White, Blue?"*. They were not engaged at all with the choices of where they were working. They saw the posters and wanted to design and draw on them. S18 was not disruptive during Day 4 and was part of the only group to finish the task given to them by the teacher in time.

Student 19 (S19). S19 is below average in terms of language proficiency. On top of that, S19 uses English sparingly in the class. The teacher gave them a 3-E for TF-I and a 3-O for G-I. When they are told to ask a question in English, they will try, but when there is no teacher supervision, such as in group work, S19 almost only speaks French. In the observed days, S19 was the student who went to look at words the most in the dictionary.

They were also one of the students who were almost always off-task when working during the unstructured days. They were not engaged with the project at all. They spent most of their time talking in French about personal things. This is reflected in their interactions during those unstructured days and because they were the last group to finish the assigned work. Figure 1 shows a median of 0 points for TF-I and 13 points for G-I, the lowest among the observed participants. By contrast, in the structured days, they stayed on par with the other participants for TF-I(22.5) and G-I(37). S19 also needed clarification about the task, doing much more than was necessary in certain areas and less than expected in others. S19 was the participant who took the most time to complete the questionnaire because they wanted good, complete answers. This participant tries to stay concentrated and work but is easily distracted by others around them and lacks the ability to ask for help when stuck on simple questions.

Game Element

Narrative. Based on the answers to the questionnaire, the participants did not understand the narrative game elements or recall what had happened during those days. Their answers to all three questions about the narratives were unrelated to the questions or incomplete. They thought the narrative game elements were the different activities from the L.E.S. the teacher had prepared for them. However, S19 had their highest number of interactions in both TF-I(41) and G-I(45) on Day 1.

On Day 3, S19 needed clarification on what was happening with the narrative. They did not understand why people went to the whiteboard to draw rings. However, after their team went to the board to draw their ring, the teacher reminded everyone of the time that had passed. Being prompted made them start working and interacting together to advance

their work. Twenty minutes had passed before that point, and they had only been talking about their personal lives. Going to the board to draw the ring did not interest S19, but the pedagogical purpose of the narrative experience, serving as a time reminder, was helpful for them. It added a small amount of structure to the day and made them aware that they had to interact and finish the work as soon as possible. There were very few interactions on that day for S19, but all of them happened after the drawing of the ring on the whiteboard.

Choice. S19 did not interact with the elements of choice on Day 2 and Day 4. On Day 2, their team chose a specific sport, but they did not do the voting with the cards. On Day 4, they sat at the same place they always sat and did not care about the colour of the poster. Someone else on their team picked a colour rapidly since they needed to catch up on their work. In their answers to Q5 in the questionnaire, S19 is the only participant who writes about the negative effect of team choices on individuals within a team. They did not like having all these choices.

Q5 " *humm, non parce que si moi il y a une activité que j'ai mais que mon équipe n'aime pas mais qu'ils autre chose, sa finir par faire des chicanes et je serais obliger d'aller dans la même équipe"*

("Humm, no because if there is an activity that I like, but that my team does not like, it is going to create conflict in the team, and I will be forced to work with the team regardless").

Teacher. The francophone teacher teaches English in an area where English is barely heard outside the classroom. This year was the teacher's second year teaching

English. They graduated from a local university in the Teaching English as a Second Language undergraduate program. The program did not prepare this teacher for the number of challenging students they would have to interact with. With only one theory course on classroom management and no courses on how to interact with students with difficulties, this teacher is overwhelmed with the amount of work they must do. They had a burnout in November of the same academic year but accepted to do the study as long as it did not create more work for them or modify their lesson plans and teaching methods too much. They have difficulty with lesson planning in advance and with time management. They were very open to trying the different activities as long as they did not require too many changes in her classroom. However, they confided that they were not doing the narrative activities correctly. On the other hand, the teacher had no difficulty giving their students choices because they already gave plenty of choices to their students. They are also used to creating fake scenarios to hook students, such as dressing up like a pirate or making their classroom an Inn for adventures. The teacher found the study to be a positive outcome for her pedagogy, giving her new ideas for the future, especially when giving students instructionally relevant choices, like giving extra texts to read, and not just choices like working in the hallway or the class.

Questionnaire

The questionnaire attempted to provide the students' and teachers' perspectives on the study. Each participant had to answer six questions, with the teacher’s questions different from the students. A summary of the answers from the 10 participants is presented for each question, with an example of the most common answer given by the participants presented for each question. All of the students’ answers are presented in Appendix I. The

teacher's answers are presented following the students' answers, which can also be viewed in Appendix J.

Summary of students' answers to the questionnaire

Q1. Le fait de participer à une expérience narrative vous a-t-il donné envie de compléter les activités d'apprentissage ? Expliquer pourquoi.

Out of ten students answering Q1, only four answers were usable, meaning they answered the question correctly and gave justifications. Every student responded positively to the narrative experience. They found it cool because it was something that they did not see or do often. They found the subject funny, liked that there was a PowerPoint presentation, and enjoyed having to draw on the whiteboard. However, one answer also explained that even though going to the board to draw was cool, the narrative elements did not change anything during the period.

S15-"J'ai trouvé sa cool effectivement d'allé au tableau, mais sinon sa n'a pas vraiment changer grand choses."

("I found it cool to go to the whiteboard, but otherwise it didn't really do change anything")

Q2. Est-ce que vous avez aimé l'expérience de narration ou non ? Expliquer pourquoi.

Out of ten students answering Q2, only three answers were of sufficient quality to be usable. All ten students wrote that they liked the experience. However, only three students explained why. Students liked the PowerPoint presentation and liked having to

draw on the board. One answer explained that they found that adding the narrative experience made the class more interesting and that it excited them.

S1-"Oui , j'ai bien aimé car s'est plus intérressant que d'habitude et sa m'avais donné plus d'excitation."

("Yes, I liked it because it is more interesting than what we usually do, and it gave me some excitement.")

Q3. Les expériences narratives sont-elles quelque chose que vous souhaiteriez voir plus souvent ? Expliquer pourquoi.

Out of ten students answering Q3, four answers were complete enough to be summarized. Eight students responded positively, while two students responded negatively. Students who do not want more narrative experiences explained that they do not want them more because they already do enough of them in class and because they do not affect them personally. From the two positive answers, students want more narrative experiences because they like drawing on the whiteboard and find them interesting.

S1-"Oui, les expériences narraitves serait quelque choise que j'aimerais faire plus souvent car c'est interresant."

("Yes, narrative experiences are something that I would like to do more often because I found them interesting")

Q.4 Est-ce qu'avoir des choix dans vos activités vous a aidé à les compléter ? Expliquer pourquoi.

Out of ten students answering Q4, seven answers gave justifications for their answers. Two students responded negatively to the question. They did not think having choices was helpful because they were used to making choices and did not like any of the available choices. The common theme of the other participants' answers is that they liked having choices because it gave them control over what they would do, such as choosing a specific subject or having creative freedom. Making choices allowed them to take an activity they understood more over an activity they understood less. They also avoided a subject they would not have wanted to pick. Finally, they could also pick something that was more fun for them.

S5-"Oui, car on avait plus de fun a faire des activités qu'on décidait."

("Yes, because we had more fun doing activities that we got to decide.")

Q5. Avez-vous aimé ou non avoir plus de choix dans vos activités ? Expliquer pourquoi.

Out of ten students answering Q5, four participants explained their answers. Three students had mixed responses to the question, whereas the other seven liked having choices. The students with mixed answers explained that they did not like having choices because it did not change anything for them. They also explained that because these were team choices, having choices could create scenarios where students who lose the vote become resentful towards the other students in their team. Being part of a group could create clashes between team members. From the positive responses, students enjoyed having choices because it gave them a sense of control and it gave their team autonomy. Making choices as a team made some participants create a stronger connection with their team because choosing and deciding on specific items within their team became something meaningful.

S6-"Oui parce que je pouvais choisir ce que je voulais faire."

("Yes, because I could choose what I wanted to do.")

Q6. Aimeriez-vous avoir plus de choix à l'avenir lors de vos activités ou non ? Expliquer pourquoi.

Out of ten students answering Q6, seven participants gave justifications for their positive or negative answers. Eight students answered that they want more choices in the future, while two responded that they do not. The reasons for the negative answers are that it could make things harder and because they already have to make so many choices. Needing to choose adds an extra layer of work for the students. In the positive camp, students want more choices because it can make things more interesting. They want even more choices because that would increase the chance that some of the new choices presented to them are more interesting for them specifically. Finally, students want more choices when their effect can lead to something more meaningful and fun.

S15-Oui car peut-être qu'ils seront plus interessant.

("Yes, because maybe the other choices will be more interesting".)

Summary of the teacher's answers

According to the teacher, the narrative game elements did not change their students' behavioural engagement. They did not see any changes in how their students interacted with each other and did not see an increase or a decrease in the frequency of interactions for both teacher-fronted and group interactions. Using narrative game elements is something that the teacher believes is easily feasible to do in the classroom. For them, it

only added an extra minute or so in the planning and the teaching. However, they are unsure whether they liked using narratives, explaining that further exploration of the game elements is needed to understand better how to utilize them.

Furthermore, the teacher thought giving students choices was good pedagogy. Needing to agree on the choices allowed the students to converse more. They frequently provide choices to their students, and so for them, giving choices is not only feasible but also something that is done constantly. Using choices to give their students extra text was new for them, showing how they could do more. In summary, the teacher is still determining whether narrative game elements are helpful, but they believe further exploration is required before abandoning it. They strongly believe in the opportunity to give choices to their students, both because it is feasible to do in the classroom and because it can create good learning opportunities for their students.

Chapter 5: Discussion

This study investigated the behavioural engagement of four students in a regular ESL grade 5 class in Quebec when game elements were introduced to classroom procedures. This discussion will address the different classroom realities that impacted the results. The questions guiding this study were as follows: 1) *What impact do specific game elements (narrative and choice) have on the behavioural engagement of elementary school students in an ESL classroom setting?* and 2) *What are the practical challenges and benefits of integrating game elements into elementary school teachers' instructional strategies?*

This chapter is divided into four distinct sections. The first section covers what happened in the classroom during the research and how it impacted it. The second and third sections discuss the effect of narrative and choice game elements on students' behavioural engagement. Finally, the fourth section discusses the benefits and practical challenges of integrating game elements into instructional strategies.

Classroom Realities

Many unforeseen variables came and impacted the result of the study. The unexpected conditions in the classroom and the nature of the activities carried out by the teacher made it so that the observed data had to be changed throughout the observable periods. Initially, six students were going to be observed, and the amount of time they were engaged was going to be noted. However, it immediately became apparent that observing six students without recording would be impossible. This number was reduced to four students. It meant that it became possible to look at the amount of time students were

engaged and what they were saying when interacting with the gamified elements. One of the four students dropped their consent on Day 2, and another was added that day. Students also progressed much more slowly than what was planned on the schedule by the teacher. On the last day of observations, students were supposed to choose between filming themselves or not when practicing their oral presentations, but none of the teams even made it to that choice. Also, during that class, students were supposed to be able to choose between working in their English class, the hallway, or their homeroom class. However, their homeroom class was occupied by another teacher who was helping students learn French. Hence, we had to remove that choice. Another unforeseen event that probably affected the results was observing them; the researcher had to sit at the front of the class when students were at their desks and walk around when students were working in groups spread out in the class. The observations were not done by an invisible person but by someone visible who was also interacting with the students. These interactions were minimal and were always initiated by the participants, but they sometimes asked for help or other things.

An important reality affecting students' engagement in learning English is the time they have English classes. Grade five students receive 90 minutes of English per week at their school. To avoid scheduling conflicts, students have one 60-minute period on week one and two 60-minute periods on week two, alternating between. With them having no homework and being in an area where English is not spoken outside the classroom, students can go full weeks without hearing English, especially when the English class falls on a day when students have off. This distance between the lessons can impact students' learning and engagement. Additionally, this area has many new immigrants, which makes it even

harder for them to learn English. Immigrants who do not speak French or English must learn both languages simultaneously and continue to learn their first language.

Other extraneous variables also affected the study. Six students were absent on the day the research was introduced to the participants because they were celebrating the end of Ramadan. These students received their consent letters to give to their parents before the researcher could meet and talk to them first. Half the class did not provide their consent, so many of the interactions observed between someone who gave their consent and someone who did not give their consent could not be fully noted down. Another aspect that influenced the data is that the activities were added to a group-based L.E.S. Learning and Evaluation Situations, which are integrated instructional units that combine teaching, assessments, and learning into one experience. During the five to seven it takes to do the project, they transform the class into a dynamic learning environment and engage students. The activities had to be compatible with every part of the L.E.S. These projects are inherently more engaging than normal activities because they are multi-faceted and are designed from the ground up to try and engage students with different tasks. Students weren't sitting at their desks filling out activity sheets; they could create and draw with few restrictions. This L.E.S. also incorporated authentic activities, videos and articles written for the public and not curated for learning, which have been shown to increase student behavioural engagement (Fredricks et al., 2004).

When compiling the data on behavioural engagement, the structure of the L.E.S was separated into structured and unstructured days. Structured days were Day 0 and Day 1, while unstructured days were Day 2, Day 3, and Day 4. Structured days were days when the teacher was teaching in front of the class, and students sat at their desks, completing a

clear set of activities with an agenda on the board. Unstructured days were days when the teacher did not teach; the students were left to work on their projects without much supervision. This separation was created based on the type of activities students were doing and because it revealed how engagement lowered considerably between structured and unstructured activities.

The data for G-I across the five periods for each participant declined. With an increase in the amount of time that students spend in groups, one would assume an increase in group interactions. However, S8, S18, and S19's median are lower for G-I on unstructured days than structured days. Weaker students like S18 and S19 would have benefited from having functional language to help them speak with their colleagues. Still, they did not have any to rely on for their communications and had no structures to help formulate their thoughts in English. Students were not able to concentrate during the whole 50 minutes. Having structures could help alleviate students' cognitive load by reducing extraneous loads, freeing them to utilize their working memory on germane load (Sweller et al., 1988). Their concentration varies even more when paired with their friends, which is what happened for some of them. Being part of a group is a social experience, and the social comparison theory can shed some light on why S8 did not work well with the other students in their group and why S18 worked well with their group (Buunk & Gibbons, 2007). S8 could have been comparing themselves downwardly with the other students in the group, lowering their skill level to resemble the other students. S8 could have done this to avoid feeling superior to their colleague. However, it has the negative effect of hurting their grades. S18, on the other hand, was paired with a stronger student and might have

been making upward comparisons. They were more motivated because they wanted to reach their friend's proficiency level.

Teacher-fronted interactions lowered during unstructured activities because students did not or very rarely interacted with the teacher when they worked in their teams. This was to be expected since students did not spend as much time with the teacher as before. S8 constantly participated when the teacher asked questions during class, but when that stopped because of the nature of the L.E.S., they stopped interacting with the teacher. Of the 60 minutes, they spent at least 50 minutes working together in groups, meaning the only interactions students had with their teacher were during the 10 minutes when they were at their desks or when they had questions because they did not know what to do. Contrary to that, students directly saw and interacted with the teacher on structured days. They would sit at their desk for the whole period and interact with the teacher and the rest of the class. During those days, the teacher would ask questions to the class, have the students correct with her, and prompt them to talk to her. These periods had a lot of class discussions, which increased students' engagement related to teacher-fronted interactions. The median for TF-I considerably decreases, going from 58.5 to 4 points for S8. This median decrease is also observed in S18 and S19. Figures 1-2 show that unstructured days were bad for both group interactions and teacher-fronted interactions.

From the observations, almost every participant talked more during the unstructured days, but the majority were talking about things unrelated to the work they had to accomplish. Students did not have specific context-appropriate intermediary goals during the unstructured days. As was explained in the literature review, goal-setting theory explains that creating those intermediary goals will motivate learners (Ritcher et al., 2015).

Those intermediary goals would help students complete the final task because creating multiple realistic, achievable short-term goals would increase the probability of completing the final complex task. Many students did not engage with the material; they spent much time discussing their weekend and other unrelated subjects. Most of those conversations were also not in English, which cannibalized the amount of input/output that students received and made it so that they were not focusing on the task. This was also reflected in how late most groups completed the required task. On the teacher's plan, every group was supposed to be practicing their oral presentation by the end of Day 4. In reality, only one group had finished the poster without practicing at the end of Day 4. The students with the highest G-I engagement were part of that specific group.

Another aspect that might have explained the results is the lack of experience and overwhelming emotions that the classroom teacher manifested during the study. With over 20 groups to her task, her regular teaching practices overwhelmed the teacher from the beginning. The researcher would sometimes remind the teacher of the lesson plan she had built. This meant that the teacher did not have time to prepare and get ready with the modified material. This lack of familiarity with the material affected the results. Combining these factors negatively affects the validity of the material and the observed results.

Results from research on gamification in classrooms are mixed (Sailer & Homner, 2020). There is a positive tendency in the results of some studies (Qi et al., 2021), but some studies also demonstrate negative trends (Hanus & Fox, 2015). The data is sometimes considered incomplete because some studies are methodologically inadequate (Sailer & Homner, 2020; Nadi-Ravandi & Batooli, 2022). A meta-analysis done by Kim and Castelli (2021) also revealed that gamification interventions are positive if done under 20 weeks

but that those same interventions have a negative impact on students if they are year-long. This study continues this very same trend. The data obtained from the effect of gamification do not reveal a negative trend in students' engagement, nor does it indicate a positive trend. The accumulated data does not prove that students are more engaged with the learning material, nor is it conclusive. The data collection with gamification usage was only 4 periods, so there was no time to establish a trend. However, narrative and choice game elements still seemed to have impacted students.

Impact of Narrative Game Element on Students' Behavioural Engagement

The narrative game elements had an impact on students' engagement at the moment when the teacher was talking about them. On Day 1, the narrative element was the PowerPoint with the cheese-rolling images and on Day 3, the element was the drawing of the Olympic rings. According to the data and what was observed in person, students would interact with the narrative elements when the teacher would stop to engage with them. To facilitate students' engagement regarding the narrative elements, both narrative elements were explicitly related to the theme of the class. The narrative element was supposed to provide a background structure to the class by incorporating a story on each day. Day 3's structure was much more effective than Day 1.

The Cheese-rolling narrative affected many students at the end of the class. As an exception, S8 was engaging with almost every slide. They would talk about subject-related matters every time one came up, mainly to the person sitting next to them or the teacher. On the last slide, the class had multiple interactions with the teacher on the theme and tried

to include other actors in the school in re-creating the subject of the theme in the school's backyard. The narrative facilitated integrating students into the subject. The class made their cheese wheel by progressing through the PowerPoint (as shown in Appendix A), which gave students the idea of getting a real one and doing the activity. Because the theme and the gif made students laugh, it also facilitated interactions and increased their willingness to communicate (Dewaele & MacIntyre, 2014). Willingness to communicate is a core concept of the QEP (Quebec Education Program), as the program emphasizes oral interactions. The first sentence of the introduction for the QEP mentions that learning English to communicate is essential for students. "*To interact orally in English* is at the heart of ESL learning…"(MELS, n.d., p.353), leading to believe that this game element has the potential to facilitate the learning goals set in the program. It has been proposed that highly engaged students are more likely to want to communicate and engage with the different activities proposed by the teacher (Fredricks et al., 2004).

As seen previously and in Figure 1-2, each student reacted differently to the first narrative element. The narrative element added extraneous load to students because its purpose was unclear from the start (Sweller et al., 1988). Students were trying to process the poorly implemented design, which took resources they could have spent on other things. The narrative goal was the reverse of this, to create distinct transition points to alleviate extraneous load, but it did not work for most students. Of the three observed students, only S6, the strongest student in the class, enjoyed the whole process. For example, S18's engagement was not affected by the narrative element. This student was usually in their bubble when not working directly on tasks. The teacher had to remind them many times to put the colouring pens away and to stop drawing while she was talking.

Many of the PowerPoint slides were not seen by S18 because they were distracted by their drawings and friends. Consequently, they did not interact with the element or participate in the class interaction at the end of the class.

In addition, S19's engagement was also not affected by the narrative element. S19 was one of the weaker students in the classroom, more often than not communicating in French whenever they could. This student already had a hard time following the usual instructions from their teacher. Adding an extra activity, one with no functional language and where the students did not have a copy of the activity on their desks, must have created even more confusion for them. Teachers are taught that young learners, especially those with low proficiency, need to have the material directly on their desks. This lack of physical material might have also affected S18 because understanding the language was still difficult for them, even if they were more proficient in English than S19. Having a physical copy of what the teacher is showing on the board could have helped students focus on the task presented to them. This is especially important for learners who struggle with the language of instructions since they will not always understand what the teacher is saying. By spending all their cognitive resources trying to understand what is happening, their extraneous cognitive load takes all their attention, effectively overwhelming their cognitive load (Sweller et al., 1988). Consequently, those students will not always be able to know if what the teacher is saying is essential for their learning, which makes it harder for them to stay engaged.

It seems that students with lower levels of proficiency, in a controlled motivation scenario, are hurt by less structured activities. Amirian, Daneshrah, and Mehrabadi's (2022) study on the role of anxiety on students' willingness to communicate showed that

anxiety has a negative effect on learning because anxious students are less likely to want to communicate with their classmates. Reducing their willingness to communicate leads to fewer opportunities for practice, which hurts students' growth. For early learners, giving them the PowerPoint pages and having them follow hands-on might have worked better at engaging them. According to Alsawaier (2018) and Manzano-León & al. (2021), rewards have an impact on students who are not engaged or motivated with the task because they act as a sign of mastery for the student. Students who are not motivated by the task might work on it just to get the reward. This might seem superficial since the student is not working to achieve mastery, but it still motivates the learner to do the work. To help weaker students connect with the material, adding a reward to the narrative could have also worked. Once they have gained the reward, it signals to them and the other in the class that they have achieved the desired outcome.

The narrative used during Day 3 had different effects on different students depending on whether they liked interacting with the narrative or were affected by the "time reminder" effect that the narrative had on them. This phenomenon was essentially split between students that were organized and students that were not. Students who were organized and engaged with the task were not observed to have benefitted from the time reminder. They went from working before the reminder to working after the reminder. Internally, it is possible that it did help to give them an idea of the time, but this was not observable. Students who were disengaged with the task benefited from the time reminder aspect of the activity rather than the activity itself. Most off-task students would re-engage with the task for a short amount of time before getting off task again after being reminded of the time left. This time, the narrative's secondary goal helped students' extraneous load.

Having this timely reminder reinforced the teacher's instructional design. They were able to re-engage with the task, lower the amount of load that extraneous cognition took, and increase the germane cognitive load (Sweller et al., 1988).

However, students who enjoyed the subject or the drawing part of the activity were more engaged with it. As an example of observed behaviour, S6 went up when it was another group's turn to make sure that the ring that the student did was well drawn. That same student also raised their hand to draw another ring even though it was not their team's turn. That specific student, through the vague answers in their questionnaire, did not understand that this was a narrative game element. However, it was important for them to represent the Olympic rings correctly. S15 was also engaged with the game element, but for a different reason: they liked drawing and found it *cool* to draw on the whiteboard in front of everyone. This had nothing to do with the subject they had to draw. S15 understood this was part of the narrative element and liked it precisely because it was about drawing (See Appendix I for answers).

The same game element can touch autonomous or controlled motivations, depending on the participant of the activity. For the two participants previously mentioned, this narrative touched on their autonomous motivation because it was an activity they liked doing. For most other students, this narrative targeted their controlled motivation. The time reminders reinforced habit formation. Every x minute, students were reminded to look at the time and focus on the task. Eventually, participants would no longer need to be constantly reminded of the time. According to Liu & al. (2017) and Alsawaeir (2018), reinforcing a habit through controlled motivators can lead to autonomy. However, creating this habit requires much more time than the time available for the study. The goal of

reinforcing this habit is to lead to student autonomy. They would eventually be able to work on complex projects without constantly being handheld by the teacher.

The impact of the narrative game elements was reduced for many reasons. With the complications related to classroom realities, the narrative gamified scenarios were not used as planned. During the first narrative, students were supposed to go to the board and touch the screen to progress the PowerPoint. This was designed to have students physically move and to create a sense of communal progress. The teacher made the narrative progress by clicking on their mouse, which removed that aspect of the game element. Another aspect of having students who were not very proficient in English was that some of them did not understand the narrative. The teacher quickly introduced the first narrative, but the students did not understand its purpose. Without understanding its purpose, weaker students did not understand what was happening every time the narrative came into focus. None of the weaker students mentioned the first narrative when answering the questionnaire, even though they were reminded of the narrative on the board.

Another factor that influenced the results happened during Day 3, where half the students were in the hallway during most of the period. They were not able to see the whiteboard where the narrative element was. Also, those students did not see the other half of the class interact with the narrative. This resulted in them not being able to engage with it. However, some students outside the classroom benefited from the narrative experience because of its secondary effect: serving as a time reminder for everyone in the class. The time reminder was especially useful because the teacher admitted she struggles with time management. With it, she managed the time in the classroom and told students outside the

class when X minutes passed. Normally, the teacher would not go around outside the classroom to tell her students that time passed.

The closer a student was to the board, like S6, the more they interacted with other students who came to draw on the board. They also heard the teacher more when she talked about the time left. For the “time left” to affect groups farther away, the teacher had to go to the groups and tell them directly that there was an X amount of time left. At that point, however, students are not affected by the narrative but by the teacher's presence. It is important to understand that the students have no phones or watches on them, and because they were sitting outside the class, the teacher reminded them that the time was their only “clock.”

Impact of Choice Game Element on Students’ Behavioural Engagement

Two types of choices were given to students during the two unstructured days. On Day 2, students took an instructional relevant choice that came with impact, while on Day 4, students took instructionally irrelevant choices that had no impact on their work. As a means to foster engagement, giving choices to students was a means to increase their sense of autonomy. As one of the three factors influencing motivation according to SDT, students understanding that they have this autonomy can directly lead to increasing behavioural engagement (Richter et al., 2015). Feeling autonomous and engaged with the task will let students connect with it. This connection with the task increases the meaning that the student attributes to the task, increasing the likelihood that they will take the task seriously and increasing the student's desire to complete it and do it well. Giving options to a group

of students can help them feel connected and empowered with their group. Students' engagement can increase by making them enter a positive affective state with themselves and their group (Turner, 2010). The instructionally relevant choice of deciding the text for their whole project, which was given during Day 2, would eventually have an impact on the work they would do. By being able to influence the subject based on a choice made by the whole team, the student's competence and relatedness were affected (Deci & Ryan, 2000). Their competence was first affected by the choice of text because it would alter their task. The two other choices they were given, the poster and work area, would not affect competence because they do not impact the content of the work they produce. Students' relatedness was also affected because they decided with other students. Not every student reacted identically to these choices, but most liked having them.

S15 reported that they liked having choices because they made those choices with their team. In this case, S15's needs for autonomy and relatedness seem to be met by the task's demands (Deci & Ryan, 2000). S5, S6, and S15 also answered in the questionnaire that they liked having choices because they got to decide which activity they would do. All four student had increased autonomous motivation, fulfilling their need for autonomy, and were not affected by the fact that they were team choices. However, none of their answers mention *teams* or *other people*, so the data does not reveal whether their other psychological needs were fulfilled by making choices.

In contrast, S19 commented that they did not like having team choices because they were scared it would cause friction with their friends in their group. They were scared that if their friend chose something different, it would lead to conflict or frustration that they would not be allowed to voice for fear of creating distortions in the group (their answer is

given in Appendix I). This tells us that for S19, their need for relatedness was more substantial than their need for autonomy.

Some students commented in their answers that the choices did not affect them or that they did not like having these choices because they already had to make a lot of choices in their class. For example, S1 answered in their questionnaire that they are used to having choices and did not find them helpful in completing the activities. They do not dislike choices; they feel that these specific choices are not different than usual, but they would still like to see more choices because it would lead to something interesting. S1 student commented that the narratives were fun because they were something new for them, which indicates that this student likes it when things are new and different. Students with an adverse reaction to the choices might be satiated because they already need to make a lot of choices in this classroom. According to Leclercq, Poncin, and Hammedi (2020), satiation has a strong negative effect on engagement. Satiation can be challenging to adjust in a classroom environment because students are heterogeneous and will not necessarily have the same tolerance. While most students had a positive reaction to having choices, it seems this reaction does not stem from the same reasons: S5 liked choices because they could choose something more fun; S6 liked choices because they could avoid doing things they did not want to do; S15 liked being able to choose their sport. From the observed data in Figure 1-2, choices did not have an impact on behavioural engagement. However, looking at the data gathered from the questionnaire, students liked having the opportunity to make those choices. Students also made different choices than what the teacher had initially planned for them, as shown in Appendix B, where half of the groups chose a text that was different than the one initially given by the teacher: the collum Sport 1 represents

the sports that were initially given by the teacher and the collum Sport 2 represents the sports that were added for the study.

An important factor that influenced the effect of choices on students' engagement is that the choices were all made in teams of three to four students. Some students, who are leaders, made their own choices for the group. They decided for everyone in the group. This was mitigated in one choice when students' choice was out of their control but was still kept fair: if the teacher randomly drew a name or when the majority won. Fairness in how decisions are made makes it more likely for participants to accept and support the outcome, even if it was not their preferred choice (Tyler & Allan Lind, 2002). In that case, because students voted unquestioningly, no one could force their choices on other students. Students would pick 1 or 2, and all flip at the same time, and the majority won. This still meant that students might still not get the choice they wanted, but the voting process provided some kind of fairness to the choice. In cases where there was no mitigation, such as when they chose the colour of the posters, some students chose for everyone. In one scenario, S8 told another student to go back and choose another colour because they did not like the first colour that was picked. Understanding if this lowered the other student's engagement would have required a specific one-on-one interview with the student, which is unavailable. The theory, however, from Decy and Ryan (2000) would indicate that the student who did not get their choice to be respected would have experienced a reduced sense of autonomy, which can lower task engagement.

There was also the question of whether the choice was instructionally relevant or irrelevant. Instructionally irrelevant choices in the study included where students could work and choose the colour of their poster. The different choices did not have a similar

impact based on who was making the decisions. For students who like drawing, such as S15 and S18, the choice of colour for the poster increased their engagement. Colouring was something that was intrinsically motivating for them because it was something they enjoyed doing. Choices that are instructionally irrelevant have a high impact on intrinsic motivation (Patall et al., 2008). They debated about the colour they were going to pick; they pointed at the posters and took some time before choosing their colour. Other students reacted differently. S19 did not care about the colour of the poster. However, one factor that might have affected their decision to pick whichever was on top might be that they were far behind in their work. Deciding on a colour ultimately does not benefit or help them complete their work. Choosing the colour of their poster is also not a new choice. It is not something they had done in the previous weeks, but it is something that the teacher usually does.

Choices with instructional relevance only included their choice of text since the choice for practicing in front of a camera was never realized. This choice increased engagement for some students, especially the ones proficient enough to read both texts effortlessly. S8 and S10's teams were very engaged in the voting process for choosing their text. This team also had the two most proficient English speakers in the class. Reading each text was not hard for them, nor did it take time. This group also voted correctly, asking the teacher for guidance and executing the instructions correctly. The novelty factor might explain this process. Both Short et al. (2023) and Kim and Castelli (2021) have shown that gamification seems to work best when the period of exposure is short. After repeat exposure to the new factor, participants in Short et al. (2023) had a decrease in engagement and motivation, whereas Kim and Castelli (2021) found that interventions were beneficial when

they were under 20 days. Likewise, the increased engagement observed did not continue for the rest of the period since right after their text was chosen, they floundered around, and their conversations stopped being about the task. Because it was something new and different, the students were engaged with the voting process, but once that was done, they went back to their normal behaviours.

Contrary to the narrative game element, the choices in the scenarios are simpler concepts. These simpler concepts have a lighter extraneous cognitive load on students. As was seen previously in the literature review, students can only process a limited amount of information at the same (Sweller et al., 1988). Since new information is not readily available to access in the student's long-term memory, more of their cognitive functions are employed by intrinsic and extraneous load, reducing the access they have to germane load. In the case of this study, the choices had a limited effect on cognitive load because they did not present new information; students already knew how to make choices. Hence, choices do not detract from students' limited cognitive resources (Brom et al., 2019). There is no difference among students based on language proficiency because making choices does not require language proficiency. Having to read two texts made it harder for weaker students, but that was not the choice: the choice was the voting using an already-made piece of paper with the number 1 or 2. The other choices, like choosing where to work or choosing the colour of the posters, did not require language proficiency. Looking at the student questionnaire answers further shows how much more students understood choices over narrative elements (See Appendix I for students' answers).

Benefits and Practical Challenges of Integrating Game

Benefits

This section will discuss the benefits of integrating game elements into instructional strategies. The teacher implementing the game elements mostly perceived them as either beneficial or neutral. The teacher perceived most of the benefits, the students perceived some, and others were seen in the researcher's direct observations in the classroom.

For the most part, the benefits of both game elements were subtle. Narrative game elements were used many times as a vehicle to help the teacher use teaching strategies. The integration of teaching strategies into the narrative elements increased the effectiveness of the strategies. The first narrative element used PowerPoint slides to create a scenario for the students during the lesson. It also served as a means to create a seamless transition between activities. It was easy to transition from one activity to another by using a slide that would encourage students to look at the front of the class. Each slide served as an intermission where students knew what would happen during the intermission. It would typically have served as a means to have students move around, but the teacher forgot this part. Finally, this narrative also lets students know how many activities were left in the class. Because the teacher told their students how many slides were left at each intermission, students were more aware of how much work they would need to do before class was done.

The second narrative helped with two different teaching strategies. This narrative was used in a period where students all went into their smaller groups to work on their projects. As a whole, this class barely had any teacher-fronted instructions. The narrative

element helped the teacher's time management and classroom management. Left on their own, students are prone to lose focus, especially when they do not have context-specific goals (Richter et al., 2015). Using the narrative as a time-management tool, the teacher creatively reminded students that they had to focus on their tasks. Hence, using the narrative as a time-management tool helped the teacher create intermediary goals for the students. Many students become more engaged with their task when they are given intermediary goals (Richter et al., 2015), such as S4 who, when reminded about the time left, went: "Reste juste 10 minutes, oh non" ("There are only 10 minutes left, oh no"), and he then proceeded to refocus on the task and tried to make his team do the same. This effect was also observed in other students, such as S6 and S19.

Under the scenario provided for the second narrative, every team completed one part of the final product. Having every team collaborate to create the product made them all more compliant with the teacher's orders because they wanted to see the final product. Cooperation among teams is a factor that can lead to an increase in engagement because cooperation can lead to intrinsic motivation (Morschheuser, Hamari, & Maedche, 2019). These experiences provide opportunities for socializing and making meaningful connections with others, which can satisfy our need for relatedness. On top of serving as a timekeeping tool, the teacher used the narrative scenario as a classroom management tool at least twice. It was used to have every student come back in the classroom and another time to have every student sit at their desk. This worked in this class since the subject of the project was sports. The product they were making was the Olympic rings, and this class is really into sports.

By not using the normal web applications used in most gamified scenarios and research, the teacher was able to avoid many complications. First, no time was wasted with students needing to connect to platforms. The teacher appreciated the ease of use. She did not lose time in the classroom because one student could not find their password or because someone did not have a phone. By using very basic technologies, such as PowerPoint, drawing board, paper clips, and posters, it is easy to replicate the activities without technology. Maican et al. (2016) showed that using technology can cause socioeconomic biases. By controlling all the tools, the teacher also avoided these discriminatory moments. Not every student in this group has a computer or owns a phone. Students were not pressured to connect to the gamified activities outside the classroom because everything was done during the English course.

As a teaching strategy, giving choices to students is also a way to have them receive more input without having to create more activities. By doubling the amount of text but keeping the original answering sheet, students had to read two texts and decide which one to keep before working on the questionnaire. Having extra texts made them work on their reading comprehension. To avoid conflict and accelerate the process, a voting system was implemented. If the students were stronger, it would be possible to have them debate and try to convince the other people in their team on which text they should be using. Not only does it benefit the students, but it also benefits the teacher. The text created for the students can be re-used, and having students choose different sports year after year can also make corrections less repetitive.

Finally, some actions, referred to as neutral, did not provide benefits but did not create challenges for the teachers. The inconclusiveness of both Figure 1 and Figure 2 also

demonstrates that the game elements did not negatively affect students' engagement. Students either ignored the game elements. Therefore, it did not impact their engagement; in some cases, they could not interact with the game elements. Because the students were always working in teams, some students did not get to participate in the narrative or some of the choices. However, not participating did not affect their engagement. They either chose not to participate or were fine with someone from their team doing the activity. To help prevent students from feeling slighted, the teacher used a chance system where she would draw a number associated with a student. No students complained about not being picked orally or in their questionnaire answers.

Practical Challenges.

This section will discuss the practical challenges of implementing the gamified elements. Some of those challenges were perceived but not lived by the teacher since she had the PI create the activities for her.

Time management was one of the first challenges the teacher perceived. Most new teachers are unprepared and are still learning. Adding extra systems to everything they already have to do is a lot of commitment. Not only does creating and implementing systems require additional time outside of the classroom, but it also requires extra time inside the classroom. Lessons need to be planned accordingly. When creating new gamified material to attach to an existing project, the creator must ascertain that the new gamified items contain everything required to complete the project. When creating the new text, it was important to make sure that it contained the information needed to complete the questionnaire. Additionally, the different choices had to be of similar difficulties. These are all considerations that can take much time for teachers.

To implement the systems effectively, the teacher must be comfortable using them in the classroom. The teacher felt that she was not doing the narrative activities correctly. For the narrative elements to be adequately conveyed by the teacher, they need to be able to act and create a compelling narrative. She felt as though she was doing a poor job implementing them. This was also the first time she was doing a narrative experiment exactly like this, and she would want to test it more because she was not sure she liked it (see Appendix J for her answer). She did not have to spend time outside the classroom to create the activities, but these were also time-consuming. The PowerPoint and the extra texts the students read had to be created. Those are not time-consuming and only need to be created once, but they add more work for teachers who are already overworked. With more practice, the teacher and the students would become more comfortable, but there is an initial time investment for all the parties involved. Creating authentic and meaningful gamified experiences and materials for the students can become challenging for teachers, as they have had no training in game design or gamification.

Additionally, adding gamified experiences to help students learn is more complex than adding gamified experiences for fun. PBL(point-badge-leaderboard) systems are the most common because they are easy to implement. However, they are not necessarily the best systems. Hanus and Fox (2015) showed that leaderboards, badges, and competition mechanics lowered student motivation over time. Systems that take into account the player will be more engaging and meaningful but will also require much more work from the person creating the system. Since these consider the players, one set of gamified activities might work well in one class and not for another group, especially in a multicultural environment like the school where the study was conducted. A diverse gamified

environment that employs more game elements will be able to meet the needs of more students (Nadi-Ravandi & Batooli, 2022).

Another challenge, especially when the students are not proficient in English, is to have them understand what's happening with the game elements. This will eventually disappear if they are used a lot because students will become familiar with them, but the initial use can have low proficiency; students do not understand what and why specific game elements are used. Of the ten students who answered Q1 on whether the narrative elements made them want to participate in the activities, only four commented about the narrative game elements (see Appendix I for students' answers). The other six students answered as if the narrative elements were the different activities from the L.E.S. Choices were easier to understand for the participants since people make choices regularly. However, certain students do not like having more choices, either because they are anxious or because they feel that making choices makes the activities harder. Consequently, students need to have the option to opt out of the gamified scenario, which means more work for the teacher.

Finally, one of the challenges of using narrative experiences reflected in the students' answers is that they want to see new activities that are interesting, fun, and exciting. Students enjoyed the last part of the PowerPoint because they found it funny. They laughed at the cheese-rolling-gif. To create these scenarios, the teacher must understand what their students find fun and exciting. This fun and interesting aspect came up in many students' answers. They also commented that they did not like certain aspects of the game elements because they did not like the available options or were not interested in the subject.

Chapter 6: Conclusion

This study was designed to examine how two gamification aspects could be used in an ESL elementary school classroom while maintaining a natural setting. This study went through many changes over time, but the goal of using aspects of gamification to increase students' engagement stayed true during the whole process. To the best of my knowledge, when this study started, it was the first study to look at gamification aspects without using technology in an ESL elementary school classroom in Quebec. Most other studies on gamification in education have looked at the use of gamification by using technology or by students in high school or university (Kasurinen & Knutas, 2018). In Quebec, studies in elementary schools have been about using games to further engagement. Not every student in the class was engaged with the gamified scenarios, but the activities positively impacted some. Most importantly, the teacher found the inclusion of the activities to fit with her classes, and it gave her ideas that she could explore when creating activities in her career.

The study makes some contributions to the teaching field. The study highlighted that familiarity with gamified activities is crucial to use them correctly. It also highlights that using gamification elements to promote engagement will not work for everyone and that forcing game elements might also not work if the activities that the students do in the class are not adequately set for them. Game elements can not just be used in any classes and magically fix engagement. Educators are responsible for modifying and evolving their lessons to fit their students. Showing new ways to approach lesson planning that do not necessarily require much additional planning time for teachers but that promote student engagement merits being implemented in more classrooms. Many pedagogical courses for

teachers in training show how using gamified activities or programs can help motivate students without mentioning that those tools use specific game elements related to gamification. Those university courses show how to use games to motivate students but do not take apart the different components of the games. Taking each ingredient on its own, this study showed that just having one aspect of what makes a game can be enough to motivate students. This can help bridge the gap between creating full-fledged games, which takes much time, and implementing one game element into a lesson. This is vital for teachers since many educators will not make changes because they are overwhelmed and lack time. It is in this manner that one of this study's primary goals was to give teachers more tools to engage students in language learning.

Future Research

This qualitative study serves as a base for future research on gamification in classroom environments. This study looked at two game elements in isolation to see if they could work to promote higher engagement. Different combinations of game elements have been used in many studies (Dichev & Dicheva, 2017). However, they have not been used in the same context that this study provided. Looking at different combinations of game elements without the use of technology could help shape a better understanding of the effect of gamification on elementary school students. Hence, teachers could expand their repertoire of activities promoting student engagement while understanding how the game elements affect students. A broader understanding would help teachers diversify their classrooms, enabling them to engage more students. Future studies could use the same game elements over an extended period to see if they can replicate the findings from Kim and Castelli (2021), who said that gamification seems to have a negative effect on

predominantly older learners when used over a year-long period. Still, to my knowledge, the same longitudinal study has not been done for young ESL learners in a Quebec classroom. By looking at game elements over a long period, educators and program makers could evaluate how to use game elements when making month-long lesson plans properly. Understanding how long teachers can use gamification before it starts lowering engagement could help promote game element diversification and affect teachers' everyday activities. Satiation is not just a gamification concept; it exists for everything. One last avenue for future studies could be to compare and contrast the use of game elements using technology or not. By studying the effect of technology, researchers and teachers could then understand whether technology benefits students. It could reinforce the desire to use technology for classes with the funds to do so or show that technology is not necessary to use gamification, showing something different to teachers who might not have access to technology for their students.

Limitations

Several limitations to this study need to be acknowledged.

- As the study mentioned, the teachers' lack of familiarity with the activities lowered their effectiveness and made the classroom observations harder to accomplish.
- The time between the first day and the day of the questionnaire seemed too long for many students. Even with the reminder on the board, many students forgot how they felt about the activities. It was difficult for students to give complete answers to the questions. Another limitation of the questionnaire was that students had a set amount of time to complete the six questions, and once they were done, they would go back to

working in their groups to complete their project. Once some students started giving their questionnaire to the observer, others stopped doing it and returned it even though it was not completed.

- As mentioned throughout the study, this study changed significantly during its realization. Initially thought to be for six students, it was lowered to 4 when the observer realized that looking at six students simultaneously was impossible. From the 4, one dropped, reducing to 3. It became four again eventually. Also, initially, no one else was going to be observed. However, it became clear that carefully glancing at what non-directly observed students were saying about the activity was a way to gain some extra data, whether they were positive or negative.
- As previously mentioned in the discussions, data was not collected for students 15 during Day 0 and Day 1. Reducing data collection for that student lowered the report's validity and the number of observations and interpretations that could be done.
- Another limitation was that the activities had to be done in an LES. This LES, being based on a project that required creating a poster, might not have been the best scenario to add gamified elements to because LESs are designed to be engaging without game elements added to them. Classes where students sat and completed activity sheets would have made the game elements stand out more.
- As this research reports on a single classroom in one specific school, the findings are not generalizable. This study did not try to convince that certain game elements would work in any school; it only tried to see if narrative and choice would work in this classroom.

Hopefully, this study will open the discussion on using teaching gamification for teachers and teachers in training.

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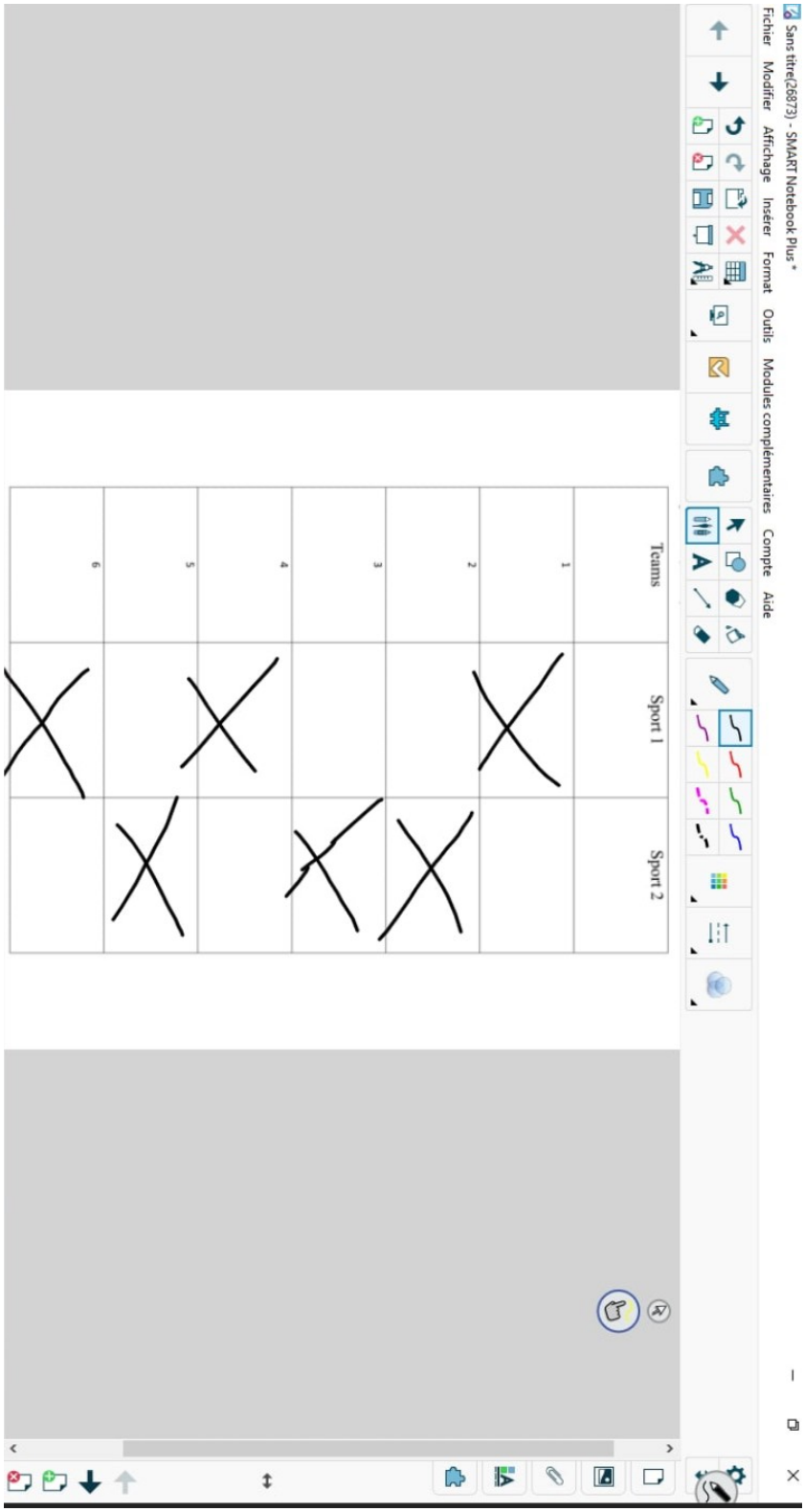
Appendices

Appendix A

Class 1 – Narrative, PowerPoint shown in the class by the teacher.

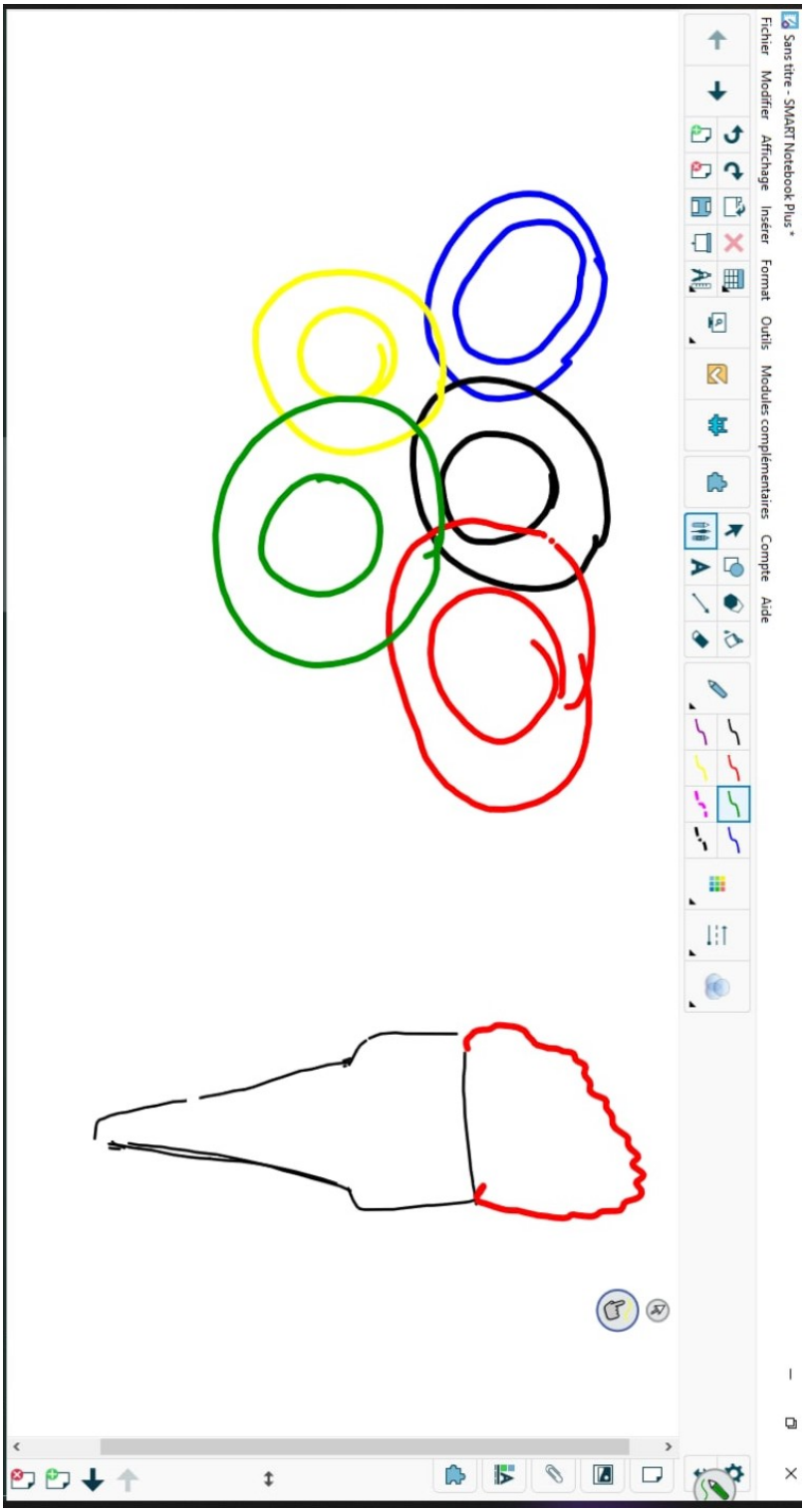
Appendix B

Class 2 – Students making the choice of sports.



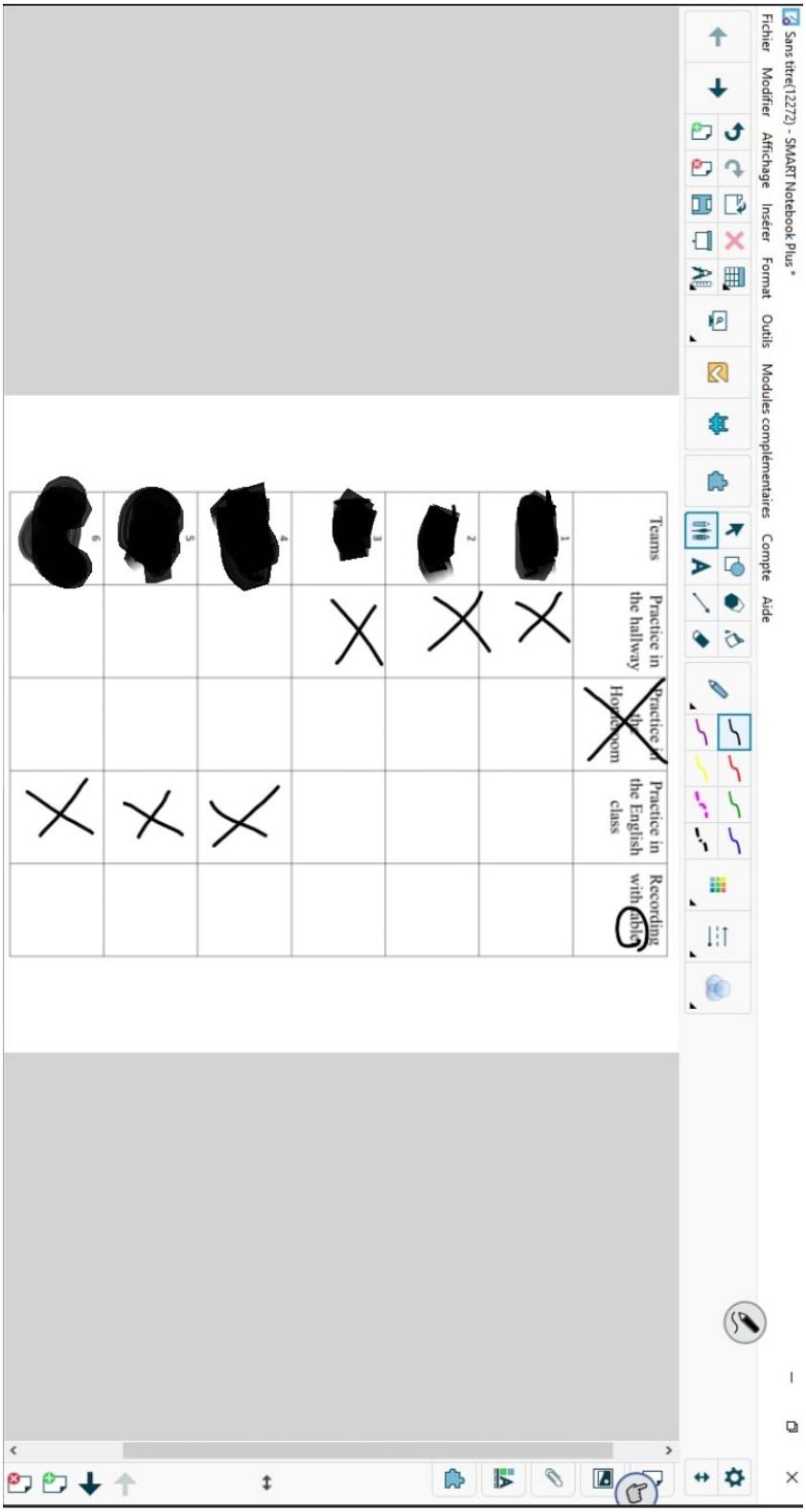
Appendix C

Class 3 – Narrative, drawing of the Olympic rings by students.



Appendix D

Choice class 4, students making the choice of where they will work.



Appendix E

Students' questionnaire

Questionnaire à réponses ouvertes
Nom :_____
1) Répondez à chaque question.
2) Il n'y a pas de mauvaise réponse. Je veux savoir ce que vous pensez.
3) Seul le chercheur va voir vos réponses.

Q.1Le fait de participer à une expérience narrative vous a-t-il donné envie de compléter les activités d'apprentissage ? Expliquer pourquoi.

_____
_____
_____
_____

Q.2Est-ce que vous avez aimé l'expérience de narration ou non ? Expliquer pourquoi.

_____
_____
_____
_____

Q.3Les expériences narratives sont-elles quelque chose que vous souhaiteriez voir plus souvent ? Expliquer pourquoi.

_____
_____
_____
_____

Q.4Est-ce qu'avoir des choix dans vos activités vous a aidé à les compléter ? Expliquer pourquoi.

_____
_____
_____
_____

Q.5Avez-vous aimé ou non avoir plus de choix dans vos activités ? Expliquer pourquoi.

_____
_____
_____
_____

Q.6Aimeriez-vous avoir plus de choix à l'avenir lors de vos activités ou non ? Expliquer pourquoi.

_____
_____
_____
_____

Appendix F

Teacher's questionnaire

Open-ended questionnaire
Name:_____
1)Answer each question carefully.
2)There is no wrong answer. I want to know what **you** think.
3) No one except will see your answers except the researcher
A) What did you think of the study? Can you think of 2 things you liked, and 2 things you disliked from the study?

Liked	Disliked
_____	_____
_____	_____
_____	_____
_____	_____
____	_____
_____	_____
_____	_____
_____	_____
_____	_____

B) What are your thoughts about using stories to teach English? Can you share an example of when using studies made a difference in your students' behaviours?

_____
_____
_____
_____

C) What are your thoughts on the implementation of using stories? Is it something that seems feasible to do in your own classroom?

_____
_____
_____
_____

D) What did you think about giving choices to your students? Can you provide an example of how giving choices to your students affected how they approached the activities?

_____
_____
_____
_____

E) What are your thoughts on the implementation of giving students choices? Is it something that seems feasible to do in your own classroom?

_____
_____
_____
_____

F) What would you have done differently? Is there anything you wished would have been included but wasn't?

_____

_____

_____

_____

Appendix G

In class observations

1.Class interaction	1.Group Interaction	2.Class interaction	2.Group Interaction
3.Class interaction	3.Group Interaction	4.Class interaction	4.Group Interaction
5.Class interaction	5.Group Interaction	6.Class interaction	6.Group Interaction
Numbers are students-coded (1-6) Class interactions: Interactions when the teacher is directing the class/students are working alone. Raising hands, answering questions, asking questions, giving ideas, length of interactions (Single word to full sentences). Group interactions: Interactions when working in teams. Raising hands, talking with peers about the task, giving ideas, collaborates, length of interactions (Single word to full sentences). 0= no interaction 1= Single word interaction 2= complete sentence O: Other language(than English), R: Raising hands			

Appendix H

Teacher's observations table for rating their students' behavioural engagement before the study.

Legend : Numbers are students-coded

Number	TF-I	G-I
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

C-I : Class interaction :

These interactions happens when students work on their own or when the teacher is teaching in front of the class. Raising hands, answering questions, asking questions, giving ideas, length of interactions (Single word to full sentences).

G-I : Group interaction

These interactions happen when students work in groups. Raising hands, talking with peers about the task, giving ideas, collaborates.

Main language of interaction:

E : English

O : Other languages

Rated on 1-5, 5 being very engaged, and 1 being not engaged. This is based on the teacher's perception of her students.

Appendix I

Answers from the students' questionnaire

Participants	Q1 Did Narrative make you want to participate	Q 2 : Did you like narrative	Q 3 Do you want more narrative	Q4 : Did having choice help to complete the activities	Q5 : Did you like having choices	Q6 : do you want more choices
Student						
1	Oui, car s'étais sorti de l'ordinaire de dabitude	Oui , j'ai bien aimé car s'est plus intérressant que d'habitude et sa m'avais donné plus d'excitation	Oui, les expériences narratives serait quelque choise que j'aimerais faire plus souvent car c'est interresant	Non, car je suis habituer a avoir des choix	sa na pas changer grand chose que d'habitude	oui, car je pense qu'avec plus de choix sa serait plus interessant.
4	Oui, parce que en peu apprendre plus et en meme temps ses mieux que de faire des évaluations	Oui, car notre sport étais vraiment cool, enfin le jeux sa à l'air cool, grace a mes amis qui parle anglais, j'ai tous compris.	Non, parce que sa me fait rien	Non, parce que dans tous les choix, je n'ai rien aimer	Oui, ses pas grave si il a plus mes choix car il a quelque question que j'aime bien.	Oui, parce que les sports sont cool, en meme temps, j'apprend de nouveaux sport.
5	Oui, car les activité était cool, interessants et aussi drole comme le cheese rolling	oui	Oui, j'aimerais sa en voir plus souvent	Oui, car on avait plus de fun a faire des activités qu'on décidait	Oui, j'aimais avoir des choix	Non, sa peut rendre les choses plus dure

6	Oui, parce que c'était plus facile et je comprenais mieux	Oui parce que je comprend mieux	Oui parce que je pourrai mieux comprendre	Oui, parce que on n'est pas obliger de faire un truc qu'on aime pas	Oui parce que je pouvais choisir ce que je voulais faire	Oui parce que on aura plus de choix dans les acitivitées
8	Oui car j'aime les powerpoints	Oui	Oui	Oui, car sa fait du changement	Oui	Oui
9	Oui, car je travaille et je vais déssiner.	Oui, j'ai aimé la narration avec les powerpoints.	Oui, car je le fais en équipe.	Oui, car je comprenais plus.	Oui, car sa ma permi de plus avoir plus de choix	Non, car j'ai déjà beaucoup de choix.
10	oui car sa la fait plus facil	oui	oui	oui	oui	oui
15	J'ai trouvé sa cool effectivement d'allé au tableau, mais sinon sa n'a pas vraiment changer grand choses.	Oui, j'aime sa car quand tu a finie tu va déciné au tableau et parce que sétait interressant	Sa ne me dérange pas d'en avoir plus souvent car j'aime ça aller déciné au tableau quand nous avons finie notre tache.	Oui, parce que ses nous qui avont choicsie notre sport et comment le déciner.	Oui, parce que ses toi qui choisies tes choses avec ton équipe	Oui car peut-être qu'ils seront plus interessant.
18	oui parce que j'aime déssiner donc je peux m'améliorer en même temps de travailler en équipe.	Oui parce que sa me peremet de mieux travailler mon anglais et mieux parler en anglais	Non car j'en ai deja fait en classe	Oui car teacher nous l'expliqurait pour qu'on puisse completer	Non car eu qu'on a fait étais deja drole et cool a faire	oui parce que je voudrais plus faire de dessin entre tout le monde.

19	Oui parce que j'aime faire des mots cachés, déssiner les mots cachés en anglais me permet de m'améliore r ou à dire des mots et dessiner m'aider a faire des découveret es det de les faire pour moi, déssiner ses un arts	oui	hummm…. oui	Pas trop parce que il y avait des parties que il n'y avait pas beaucoup d'info à se qu'on cherchait	humm, non parce que si moi il y a une activité que j'ai mais que mon équipe n'aime pas mais qu'ils autre chose, sa finir par faire des chicanes et je serais obliger d'aller dans la même équipe	Pas toujours, mais oui seulemen et si ses des activités a mon gout.

Rules to get green :

1) Must answer all of the questions component.
2) Must make sense, the answer needs to relate with the question. (Many students thought the narrative/choice was the LES)
3) Does the answer help answer the research questions. Could be just one RQ or both RQ.

Appendix J

Answers from the teacher's questionnaire

Participant	2 things liked	2 things disliked	Thoughts about using narrative	Feasibility of using narrative	Thoughts about giving choices	Feasibility of giving choices	What would you have done differently
Teacher	1) Gave some fresh ideas (adding choices, including narrations)	nothing	Did not see any changes in my students' behaviour	It is feasible, since it can be something that takes on an extra minute in the planning + teaching. Do not know if I enjoyed it, Would have to explore more.	It provided the students with more conversation, as they had to agree on their choices.	Yes definitely, I already give choices whenever I can, but it showed me that I would do more.	No, I was willing to try everything, and I did not have any expectations.
	2) Provided with some material for next year (extra sports)	nothing					

Rules to get green :

1) Must answer all of the questions component.
2) Does the answer help answer the research questions. Could be just one RQ or both RQ.