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Abstract

This thesis investigates the implementation of gamified tasks through an educational escape room on student engagement in a 6th grade EFL Norwegian class, containing 27 students. Action research was utilized as the research method in this study, with focus on whether a gamified lesson could be implemented in an average classroom. It was also selected due to the researcher's aspiration of reviewing and bettering their own teaching practice. Lastly, it was selected in order to conduct the study in a natural environment, with students familiar to the researcher.

The study aimed to explore whether the design of glossary and grammar exercises can affect student motivation and whether implementing these exercises in a meaningful context can aid the learners in acquiring vocabulary. The study found that gamification can enhance student engagement and motivation in language learning when tasks have been carefully designed to learners' abilities. The study highlights the importance of effective student collaboration, task design and storytelling when creating engaging lessons that align with learning objectives.

This thesis aimed to contribute to the knowledge of implementing educational escape rooms, gamification and action research in a practical setting. Additionally, it intended to gain a perspective regarding actively utilizing student feedback in lesson design.

1. Introduction

In today's digital age, incorporating game-like elements into education, or gamification, has become an increasingly discussed teaching approach. This thesis aims to explore the impact of implementing gamified tasks on student engagement in an English as a foreign language (EFL) classroom. Despite the growing amount of research revolving around gamification in education, much of the existing research has relied on quantitative methods of acquiring data, thus leaving a gap in our understanding of the intuitive experiences of students. This thesis seeks to assist in exploring this notion by conducting a mixed-methods study that prioritizes qualitative data. In order to achieve this objective, an action research (AR) study was conducted. It involved designing, implementing and evaluating gamified lessons, which were carried out in a format of an educational escape room (ER). By utilizing this approach, it was possible to gain insights into the impact of implementing gamified elements in EFL from both the teacher and the student perspectives.

1.1 Topic and Research Questions

The constant growth and development of the digital elements in our surroundings mean that digital literacy is increasingly important. In fact, the Norwegian educational system recognizes the significance of digital skills by including them as a key element of its 2020 core curriculum.

> "The curriculum defines five basic skills: reading, writing, numeracy, oral skills and digital skills. These skills are part of the competence in the subjects and necessary tools for learning and understanding them." (Utdanningsdirektoratet, 2020).

As digital literacy continues to be implemented as a fundamental aspect of education, educators are continuously searching for effective ways to teach this skill set. Gamification has emerged as a potential solution, due to the fact that it involves the integration of game-like elements into education . In fact, it is possible to observe elements of games or game structures often integrated into various digital tools. However, not all gamified tools are equally effective and, as an educator, I have had to experiment with different tools to find

ones that keep students engaged and focused. As a result of this, an important question arose: which parts of gamification and which parts of digital tools do the students prefer, and why?

In order to investigate the impact of gamification on student engagement and motivation, this study utilizes educational escape rooms (ER) and action research (AR) methods. Educational escape rooms are a popular gamification tool, due to their ability to promote collaboration and problem-solving skills among students. Additionally, the possible integration of digital tools in ER can enhance student engagement and motivation. AR, on the other hand, is a research approach, which involves educators systematically studying and reflecting on their own teaching practices to improve student learning outcomes. By combining ER and AR, this thesis is aimed to explore how one can adjust gamified tasks while also implementing a digital element. Additionally, the use of qualitative data in AR provides opportunities for in depth discussions of student engagement and motivation, making it an ideal method for this study.

This study specifically focuses on the impact of gamification through ER on student engagement and motivation when working with grammar and vocabulary in a 6th grade EFL Norwegian classroom. By examining how the design and structure of the ER impact student engagement and motivation, the study aims to contribute to a better understanding and insights into the value of gamification in EFL education, the effectiveness of ER as a gamification tool, and the potential benefits of utilizing AR as educators.

1.2 Relevance

The topic of student engagement and motivation is always in immediate focus when discussing various approaches and elements of education. These elements are essential for language learning, therefore making the students attitude towards various tasks a focal point of discussion. As a teacher, one can observe students distancing themselves from repetitive tasks, such as standardized glossary or grammar exercises. Therefore, this thesis aims to explore how varying the format of glossary and grammar exercises can impact students' perception of the exercises.

Furthermore, the thesis will implement glossary and grammar exercises in a setting that contextualizes the words and requires actively recalling the previously learned material. This will shed light on whether implementation of glossary words and grammar rules in a meaningful context may aid students' ability to retain vocabulary and apply it in real-life situations.

The focus of this study is relevant to the newly published Norwegian curriculum (LK20), which emphasizes the importance of feedback, student ideas, and a variety of strategies. This is especially relevant to this study's focus on enhancing student engagement and motivation in language learning.

"The teacher is to create opportunities for student feedback as well as student ideas in order to stimulate learner motivation by using a variety of strategies and resources to develop the students reading capabilities, as well as oral and written skills for different situations" (Utdanningsdirektoratet, 2020).

To summarize, this thesis aims to explore the impact of presenting grammar and vocabulary tasks in a variety of forms on student engagement and motivation in language learning. By providing context to the tasks and requiring recall of the previously learned material, this study attempts to determine whether meaningful implementation of vocabulary and grammar rules is able to enhance students ability to actively utilize the target language. This research is particularly relevant to LK20, which emphasizes the importance of several concepts that are extensively examined in this study. Through this thesis, the researcher attempts to contribute to findings regarding effective language teaching practices and student engagement in the classroom.

The thesis contains eight chapters, in which each chapter focuses on a specific aspect of the study. Following this introduction, Chapter 2 provides the theoretical background of the study. It discusses various concepts related to language learning, such as gamification, vocabulary, grammar, motivation, and learner autonomy. Chapter 3 describes the methodology of the study, including the aims, general procedure, action research, research methods, and ethical considerations. Chapter 4 contains the results of the study, focusing on the planning and the implementation process of the two phases of the ER lessons. Additionally, it presents analysis of the student interviews and teacher observations.

Chapter 5 discusses the results and their implications, while Chapter 6 concludes the study, summarizing the main findings and their significance. The reference list and appendices are included at the end of the thesis.

2. Theoretical Background

2.1 Introduction

Language learning is a complex process involving a variety of theoretical concepts and approaches. This chapter will explore several of these theoretical concepts and how they are relevant in promoting effective language teaching practices which can create meaningful learning and engagement. The use of gamification and educational escape rooms will be discussed in light of them being tools utilized in creating immersive and motivating environments for language learners. Task-based language teaching will also be mentioned, due to its opportunities in engaging students in purposeful language use.

Additionally, scaffolding and Vygotsky's socio-cultural theory will be discussed, considering how these concepts aid learners in developing their language abilities. The importance of vocabulary and grammar learning will be presented, due to the fact that these are vital aspects of language proficiency. The topics of motivation and learner autonomy will also be mentioned, considering they are key components in language learning. A discussion regarding how the creation of environments which promote learner autonomy can make room for meaningful language experiences will also take place.

2.2 Gamification

Gamification is the use of game design elements and structures in non-game contexts, such as implementing a reward system or a puzzle in an educational setting. According to Dicheva et al. (2015), gamification in education involves the integration of game mechanics, such as points, badges, and leaderboards, into educational activities and materials. This sort of integration is meant to enhance student engagement, motivation, and learning outcomes due to the different structure and approach of learning the curriculum.

Kapp (2012) suggests that there are numerous ways in which gamification can be applied in an education setting. One could incorporate game-based activities, offer rewards for completing tasks or achieving set goals, as well as using assessments to evaluate

comprehension. These strategies can provide learners with a visual representation of their progress and provide various arenas for collaborative work.

There are, however, also certain challenges when using gamification. The design of any gamified part of a lesson needs to be carefully considered, planned and tweaked by the educator in order to avoid several pitfalls, such as the tasks being too difficult, causing frustration. Landers and Landers (2014) found that the use of leaderboards in gamification may lead to negative effects on student motivation and performance if the leaderboard creates a sense of intimidation or discouragement among students. Additionally, Mekler et al. (2017) claim that the effectiveness of gamification elements on intrinsic motivation and performance can vary depending on individual differences, such as personality traits and prior experience with games.

Nevertheless, Papastergiou (2009) found that digital game-based learning in high school computer science education positively impacted student motivation and educational effectiveness through the use of gamification in the form of immersive narration, feedback and competitive elements. Additionally, Dicheva et al. (2015) concluded with a similar result - gamification has potential benefits of being implemented in an education setting, as it can enhance student engagement, motivation and learning outcomes.

Gamification in a pedagogical setting is used in order to promote learning and engage the learners by creating fun and interesting lessons. According to Figueroa (2015), the use of gamification in education does not require inclusion of actual games, and can therefore be achieved with integrating concepts and designs of a game structure in lessons. Furthermore, Deci (2001) acknowledges that gamification can have a positive impact on learner engagement and participation.

Gamification has been identified as a way to increase student involvement in the learning process (Kapp, 2012a). One of the game design components that can enhance student engagement is storytelling, which refers to the plot of the game and can keep players interested and involved (Nah et al., 2014). Kapp (2012a) also emphasized the importance of balancing learning and gameplay in gamified educational projects, as well as providing frequent, intense, and immediate feedback to maintain engagement throughout the learning process (Nah et al., 2014).

In addition, Kapp (2012a) noted that a good storyline can help learners maintain motivation throughout the learning process and achieve an ideal interest curve, where interest peaks at the beginning and end of the learning process. A storyline also provides a context for learning and problem-solving, as well as highlighting the practical applications of concepts in real life (Nah et al., 2014). Therefore, there may be a correlation between student involvement, storyline, and motivation in foreign language learning, as incorporating gamification elements like storytelling and feedback can enhance student engagement and motivation in the language learning process.

To summarize, gamification can be viewed as a promising approach in education. It has several advantages regarding enhancing motivation and engagement, which therefore can amplify learner outcomes. However, there are potential pitfalls, such as intimidation or discouragement amongst students, which calls for careful consideration and planning of design of gamified elements.

2.2.1 Gamification in the EFL classroom

Gamification, defined as the process of transforming non-game learning environments into more game-like ones by applying game design and mechanics, has gained increased attention in recent years for its potential to enhance learner engagement and motivation (Deterding, Dixon, Khaled & Nacke, 2011; Werbach, 2014). Prensky (2007) noted that digital games involve key factors such as goals, entertainment, challenge, outcomes, and interaction or competition.

In line with this trend, the newly published national curriculum for Norway (LK20) emphasizes the use of game-like activities and digital tools in several subjects at middle school level, including English (Utdanningsdirektoratet, 2020). The English curriculum from LK20 highlights the importance of developing digital proficiency as a basic skill, which includes retrieving, researching, and critically evaluating information from various English sources, as well as communicating and creating texts (Utdanningsdirektoratet, 2020).

Furthermore, the renewed curriculum stresses the importance of creating a diverse set of tasks to develop students' reading capabilities, oral and written skills for different

situations, and stimulating learner motivation through a variety of strategies and resources. Thus, gamification may offer an effective approach to meeting the demands of the new curriculum and enhancing learner engagement and motivation in language learning.

Gamification has been found to be a common and effective approach in EFL instruction and learning. Zhang and Hasim (2023) conducted a review of 40 empirical studies which showed that gamification can enhance students' English language proficiency, attitudes, and emotional responses, and create a real-world learning environment. It was found that gamified learning environments should consider dynamics, mechanics, and components while taking into account students' educational level, cognition, and capability. The authors recommended that teachers become early adopters of the gamified classroom and designers of gamified learning materials to improve the EFL learning process and boost students' productivity.

Furthermore, it was found that gamification could be widely used to teach different EFL skills, including vocabulary, grammar, listening, speaking, reading, writing, pronunciation, college English, and even English literature (Zhang & Hasim, 2023). In comparison to traditional learning environments, it was found that the gamified learning environment was helpful for EFL learners in improving their English skills in listening, speaking, reading, and writing. Gamification was a useful approach to provide dynamic materials and enhance students' learning motivation, attitudes, and emotional responses (Zhang & Hasim, 2023).

Collaboration and meaningful feedback were found to be more feasible gamification elements when designing gamified learning activities, compared with competition and repetition (Shortt et al., 2021, as cited in Zhang & Hasim, 2023). Therefore, it was recommended to use collaboration in the design of gamified learning activities rather than competition to facilitate students' EFL learning (Dindar et al., 2021; Li & Chu, 2021, as cited in Zhang & Hasim, 2023). It is important to note that there are some disadvantages to using gamification, and it is recommended to explain the purposes and implementation of the gamified classroom explicitly to the students and facilitate their effective use of the gamified classroom (Zhang & Hasim, 2023).

2.3 Educational escape rooms

Escape rooms have gradually gained popularity in education as an engaging and interactive learning tool. In an educational setting, escape rooms are used to present students with a scenario or a problem that requires use of collective critical thinking. The ER design typically consists of several tasks and/or puzzles that are challenging the participants' problem solving skills and logic (Taraldsen et al., 2020). This format can be applied to a variety of subjects, such as EFL, mathematics or science.

According to Taraldsen et al. (2020), the use of escape rooms in educational surroundings is focused on learning to apply skills that are relevant in modern society. Their review finds several articles that are emphasizing the importance and relevance of skills like critical thinking, collaboration in a group setting, creativity and problem solving.

In order to effectively scaffold learners in English as a Foreign Language (EFL), it is important to pay attention to the design of the educational escape room. It is possible to discuss whether design in itself could affect learners' cognitive and emotional experiences in educational escape rooms. Educators should focus on creating activities that are challenging but not frustrating, and provide learners with appropriate guidance and feedback. The design should also be aligned with the learning objectives and enable learners to practice the target language in a meaningful context. By paying attention to design, educators can create educational escape rooms that effectively scaffold learners in EFL.

López-Pernas et al. (2022) discusses the combination of key principles of game design and sound learning theories found in educational escape rooms. Active learning is mentioned as one of the main learning theories, defined as "any instructional method that engages students in the learning process" (Prince, 2004). Bonwell & Eison (1991) highlight that a fundamental aspect of active learning is the students partaking in meaningful activities that require them to think about what they are doing. Educational escape rooms provide a wonderful opportunity for students to partake in exactly that, considering that they require students to solve a variety of puzzles in order to progress. These conditions therefore test the students' knowledge, allowing the participants to develop a variety of skills in an active, collaborative manner.

Collaborative learning is also a central component in educational escape rooms. Prince (2004) defines it as "any instructional method in which students work together in small groups toward a common goal", which is at itself, a core in the ER design. The tasks and puzzles create a natural atmosphere for dialogue, considering the fact that students need to discuss and work together in order to achieve a common goal.

When planning to create an educational escape room with only one digital component, it is relevant to review research on digital educational escape rooms. Makri et al. (2021) offer guidelines for creating successful digital educational escape room games. The guidelines suggest adopting a game-designed framework, creating hybrid learning experiences, and using sustainable materials to create digital sustainable educational escape rooms. By following these guidelines, designers can create games that satisfy learning objectives, adapt to the needs of educational learners, and concentrate on key competencies for the target audience.

It is important to note that educational escape rooms are still quite a new pedagogical tool, which suggests that there is a limited amount of research on the topic thus far. Taraldsen et al. (2020) state that despite the promising reports abouts the use of education escape rooms, as well as the enthusiasm, not enough is known about this topic so far.

2.3.1 Implementing ER with a focus on language learning

Cameron (2001) states that classroom tasks and activities are crucial components that shape the foreign language learning environment. Classroom tasks and activities act as an "ecosystem" in which the growth of skills in the foreign language takes place. Children are active learners who actively seek to find meaning and purpose in activities presented to them. Therefore, young learners strive to make sense of the tasks presented to them and often come with their own understanding of the purpose and expectations of adults. In this regard, teachers play a critical role in designing tasks and activities that are relevant and meaningful to students.

When designing tasks for educational escape rooms, teachers should ensure that the tasks are not only linguistically challenging but also engaging and fun for students. These

tasks should contain clear learning objectives and should provide ample opportunities for students to utilize language in a meaningful way. Furthermore, the students abilities and interests should be kept in mind during task creation, in order to ensure the students motivation when the tasks are presented. The teachers can also attempt incorporating tasks of different variety, therefore being able to cater to a diverse range of learning styles and preferences.

According to Richards (2013), group work activities are a frequently cited strategy for changing the interactional dynamics of language classrooms. Group work has several advantages, including reducing the dominance of the teacher over the class, increasing student participation, providing opportunities for individual students to practice new features of the target language, promoting collaboration, enabling the teacher to work as a facilitator and consultant, and giving learners a more active role in learning. However, successful group work activities require decisions about factors such as group size, the purpose of the task, and roles in the group. These decisions can affect the interactional dynamics of the lesson, which can either hinder or support effective language learning, thus highlighting the need for careful design of lessons and tasks they contain.

Educational ER can provide a perfect opportunity for language learning through teacher-designed stories. Cameron (2001) discusses that stories can have a significant impact on language development in young learners. Stories are designed to entertain and are carefully crafted in order to keep the audience interested, which often includes the use of unusual words, strong phonological content, interesting rhythms, and onomatopoeic sounds. The context created by the story, along with its predictable pattern of events and language, can help support listeners' understanding of unfamiliar words, leading to growth in vocabulary. Studies have shown that children can learn vocabulary from stories incidentally through listening. When accompanied by teacher explanations of new words through pictures, acting out meaning, or verbal explanation, the vocabulary gain can double, and the gain is still evident months later. Quality stories have characters and a plot that engage children, and the artwork can be just as important as the text in telling the story.

By incorporating stories that have the qualities of content, organization, and language use, students can be captivated and motivated to learn. The ER environment can add an exciting and immersive element to the story, making the language learning experience even

more engaging. The students can read along with the teacher while listening and following silently, as well as participate in activities designed to reinforce the vocabulary and language used in the story. Using stories in an educational ER can provide an excellent opportunity for language learning, combining the benefits of stories with an exciting and immersive environment.

Considering the above mentioned benefits of group work in language classrooms, educational ER can be an effective tool for promoting collaboration, increasing student participation, and giving learners a more active role in learning. Educational ERs provide a contextualized setting for language learning, and group work is an essential component of solving puzzles and clues in this crafted educational environment. Students are given the opportunity to work together in order to solve different types of tasks and develop strategies, which can therefore generate conversation and collaboration revolving around learning. The teacher is also able to act more as a facilitator and consultant, guiding the students in their problem solving and providing feedback when needed. The use of educational ER as a group work activity can create an immersive, fun and engaging learning experience for students while promoting effective language learning.

To summarize, the design of classroom tasks and activities is vital in relation to students foreign language learning environment. It is possible to utilize ER as a tool for language learning in the classroom, providing an immersive and engaging opportunity for students. To achieve this, teachers could design linguistically challenging, yet fun and engaging tasks, keeping in mind the abilities and interests of the students. Educational ERs are also able to promote collaboration and active participation in learning, as group work activities can enhance language proficiency and motivation. The use of stories within the educational escape room can provide an excellent opportunity for language learning, combining the benefits of stories with an exciting and immersive environment.

2.4 Vocabulary

The updated Norwegian education curriculum from 2020 emphasizes the core elements of communication, language learning, and working with texts in English, which are crucial in developing students' language proficiency and intercultural competence

(Utdanningsdirektoratet, 2020). Communication entails using language effectively in different situations, and the teaching approach should encourage students to interact and express themselves authentically using different types of media and sources.

Language learning focuses on developing language awareness and knowledge of English as a system, including learning the pronunciation of phonemes, vocabulary, word structure, syntax, and text composition (Utdanningsdirektoratet, 2020). It is essential for students to learn vocabulary as it provides them with choices and possibilities in their communication and interaction, enhancing their language skills.

Working with texts in English is also emphasized in the curriculum, enabling students to develop knowledge and experience of linguistic and cultural diversity (Utdanningsdirektoratet, 2020). By reflecting on, interpreting, and critically assessing different types of texts, students acquire language and knowledge of culture and society, developing their intercultural competence, and building a foundation for seeing their own and others' identities in a multilingual and multicultural context.

Therefore, vocabulary learning, along with communication and working with texts in English, plays a vital role in developing students' language proficiency and intercultural competence, and teachers should adopt an integrated approach that emphasizes all these core elements (Utdanningsdirektoratet, 2020).

According to the updated Norwegian education curriculum from 2020, the following competence aims are expected of Year 7 students, hence functioning as aims for Year 6 students:

- Employ basic strategies for language learning, text creation, and communication.
- Utilize digital resources and various dictionaries for language learning, text creation, and interaction.
- Engage in play, singing, and role-playing to explore and use pronunciation patterns, words, and expressions.
- Understand and interpret words and expressions in both adapted and authentic texts through active listening (Utdanningsdirektoratet, 2020).

These aims emphasize the importance of employing various strategies, resources, and activities to facilitate language learning and communication while also acknowledging the role of technology in language education. Moreover, exploring pronunciation patterns and words through play, singing, and role-playing can make language learning more engaging and fun for students, ultimately enhancing their language proficiency. Understanding and interpreting words and expressions in both adapted and authentic texts through active listening is also critical in developing students' reading and listening comprehension skills (Utdanningsdirektoratet, 2020).

The Norwegian curriculum for English in 2020 emphasizes the importance of both reading and digital skills (Utdanningsdirektoratet, 2020). Reading skills in English involve understanding and reflecting on various types of texts in print and on screen, using reading strategies to comprehend explicit and implicit information, and critically reflecting on and assessing different types of texts. This skill is developed from experimenting with phonemes and speech sounds, spelling patterns and syllables, to reading varied and complex texts with fluency and comprehension (Utdanningsdirektoratet, 2020). Digital skills in English involve using digital media and resources to strengthen language learning, interact with authentic language models and interlocutors in English, and acquire relevant knowledge in English. To achieve this, critical and reflected behavior is necessary in using digital forms of expression in English and in communication with others (Utdanningsdirektoratet, 2020).

The acquisition of vocabulary in any language is a continuous development which requires several meaningful encounters with target words. In a Norwegian EFL classroom, the focus of learning vocabulary can often rely on implementation and the use of glossary tests. As a result, the general feedback from students regarding this method of vocabulary learning is that it can be boring and tedious. Nation (2001) mentions that a large number of learners feel frustrated due to declining memory retention over time, which results in unsatisfactory learning outcomes. This feeling of frustration amongst learners can be a sign to educators to seek various approaches of teaching vocabulary more efficiently. Effective vocabulary instruction is a teaching method which provides the learners with various opportunities to learn words. According to the National Reading Panel (2000) there are five factors that contribute to effective vocabulary instructions and thereby learning; explicit instruction, indirect instruction, multimedia methods, capacity methods and association methods. During explicit instruction the teacher teaches in a structured and direct manner.

This is important when learning new words, and the learners require a definition. Indirect instruction entails the learners being exposed to vocabulary learning through reading and texts. Multimedia methods is a method in which vocabulary is taught by expanding past texts, including other media such as visual representation or hypertext. Capacity method presentes that practice is emphasized in order to increase capacity. Association method encourages learners to draw connections between acquired vocabulary and its meaning and vocabulary they have not yet learned.

According to Nation (2001) explicit learning activities are considered quite effective for vocabulary learning. Exercises that provide repeated exposure and interaction with target vocabulary require factors such as noticing, retrieval and generative use, which have been widely recognized as an aid for word retention. The aspect of noticing is of importance in accentuating different meanings, which creates a necessity of tasks requiring cognitive effort before learning can take place (Schmidt, 1990). Retrieval revolves around accessing information that has previously been stored, which aids the learner in strengthening the correlation between the cue and retrieved knowledge (Nation, 2001). Generative use requires a word to be encountered in a different way or using the word in new contexts (Nation, 2001). It leads to quite effective vocabulary learning due to the amount of required processing needed to understand the lexical cues, which results in successful word acquisition (Joe 1998; Nation & Webb 2011).

In an investigation of ten different types of games conducted by Di Zou (2021), it was found that digital games have a positive effect on vocabulary learning, both in the short and long term. Although the study by Di Zou (2021) presents the positive effects digital games can have, it is important to note that the current study in this thesis does not utilize digital games. The purpose of this investigation is to observe and analyze an approach that utilizes game-like elements while working with vocabulary and grammar. As the use of games gradually gains popularity in language learning, it is important to examine the elements within these and incorporate the most effective types of games and their elements into language teaching practices. As such, the findings of Di Zou (2021) and Hung et al. (2018) highlight the importance of incorporating digital games into language learning as a means of promoting motivation and facilitating the acquisition of vocabulary.

2.5 Grammar

Grammar plays a vital role in language learning, functioning as the framework for implementing the learned vocabulary. The systematic overview that grammar provides to language is directly related to the other language skills such as speaking, listening, reading and writing. Cameron (2001) explains that grammar is essentially the understanding of the structure that most people would commonly agree upon. Grammatical rules can be thought of as patterns, which reveal how words in a luggage are modified and structured.. It is for the learners benefit to become familiar with grammatical patterns, in order to be able to achieve better proficiency in the language they are trying to learn.

Cameron (2001) states that a more narrow understanding of grammar will prompt certain critics to say it is a less important feature in EFL classrooms, especially with younger learners. These notions are based on the idea that grammatical rules could be too challenging for the younger learners, therefore halting their development. However, it is possible to discuss how the continuous learning of vocabulary, without the implementation of any forms of conjugation and grammatical structure would be any less confusing for a young learner.

Cameron (2001) discusses how the separation between teaching of grammar and vocabulary can appear difficult, due to it at times being thoroughly interconnected. For example, if a child learns the meaning of the word "very" as well as the correct placing of the word to carry the meaning, one has then both taught the vocabulary and the grammatical rule of amplification. The student will now have the opportunity to utilize this newly acquired knowledge to compare objects as "very small" or "very big".

This notion is continuously supported by Cameron (2001), which seeks to prove that grammar is interconnected with vocabulary and should therefore be valued as something more than simply rules in a grammar book. This therefore supports the earlier statement, which suggests that grammar is essential to the meaning and use of the target language. One could then further discuss whether a strong grasp of grammar could potentially enhance the learners' communication skills by enabling them to accurately interpret and produce language structures, such as word order, tenses, and sentence structure. If so, it is possible to consider the significance of incorporating grammar instruction in EFL classrooms, in which grammar plays a fundamental role in developing language proficiency.

Grammar contributes greatly to the overall proficiency in a language by providing learners with the necessary tools needed in order to be able to communicate their ideas and express themselves in a coherent manner. Furthermore, it is possible to discuss the relevance of grammar in effective communication in all language skills. Due to grammar being closely interconnected with the other language skills, it is therefore possible to consider that if an educator thrives for their students to become better readers, writers, listeners and speakers, one should include grammar in their teaching practice, preferably in a context which students can actively partake in (Cameron, 2001). Creating instances in which the students are able to apply grammatical rules, as well as have an opportunity to discuss these at length, could hypothetically create nurturing environments for comprehension of various grammatical notions. An example of such instruction could be modeling a grammar structure or feature. Although it might not be the most effective method in improving a student's overall language skills, it has an impact on the contribution towards the process of language acquisition, providing the student with a reference they can access when recalling the rule (Cameron, 2001).

The form of grammar instruction in education is of importance, considering the balance needed with other language skills in order to ensure that learners are able to acquire a well-rounded proficiency in the language. Factors such as individual differences, learner motivation and the learners' first language could all have an effect on the process of learning foreign language grammar (Cameron, 2001).

When viewing various forms of grammar instruction in EFL, several key approaches become apparent. Cameron (2001) discusses the traditional approach of grammatical instruction. It can be described as a stepping stone approach, meaning that the grammatical rules are presented to the learners in a specific sequence. Bite-sized chunks of information are introduced to the learners, followed by the grammatical rules with increasing difficulty, thus gradually creating a syllabus. The rules, which are introduced one-by one, with complementary tasks provide the students with a pattern, intended for them to apply in order to acquire the correct understanding of the grammatical rule. This approach is focused on repetition, with the belief that practice makes perfect and assuming that the rules will be acquired given time and effort. Academically gifted students might thrive when applying this approach, but Cameron (2001) argues that it might not be very well suited for younger children. This is due to the more advanced ways of thinking necessary for explicit grammar

tasks to be efficient. This method does not fit into younger children's need for it to be contextualized through narratives. This approach might be better suited at certain points in the students' development, but not as the primary way of learning grammar. This consideration should be taken into account, when teachers are focusing on developing their practice in the EFL classroom.

A different grammatical instruction method presented by Cameron (2001) is the communicative approach. A key belief of this method is the understanding that we learn language by actively using it, with an added emphasis on context and meaning. The tasks in this approach are intended to be as authentic as possible, negating the concept of explicit grammar teaching and instruction from the practice as much as possible. Communicative language teaching (CLT) is attempting to simulate the process of first-language acquisition, in which learning happens without direct instruction. Thus, this approach tends to focus on meaning in the learning process as a guaranteed way of developing competency.

A third approach presented by Cameron (2001) is focus on form. In contrast to CLT, which intended their approach to develop language automatically through meaning, this approach claims that explicit instruction on the form is necessary. The manner of instruction is of relevance, suggesting the necessity of structuring both the input and the output in a meaningful way. Students will therefore be provided with context which encourages them to look for and utilize the grammatical structures found in tasks and text that they engage with. In this study, the approach mostly resembles focus on form, considering the tasks are designed in a manner that is to create a natural conversation regarding grammatical structures amongst students.

2.6 Task based language teaching

Task-based language teaching (TBLT) is an approach to language instruction that emphasizes the use of language in meaningful tasks or activities, rather than on isolated grammar or vocabulary drills (Ellis, 2003; Nunan, 2004; Willis & Willis, 2007).

According to Long (2015), tasks are the unit of analysis in TBLT, and they are activities and materials that students work on in the classroom or other instructional environments. Ellis (2009) presents criteria for an activity to qualify as a task. It must have a primary focus on meaning, require that learners rely on their own resources, have a gap or challenge that learners must overcome to complete the task, and have a clear outcome (Baralt & Morcillo Gómez, 2017).

AR is a practical approach that has been presented above. It closely correlates with TBLT, considering it involves continuously reviewing and adapting accordingly. Task-based methodology is of equal importance as tasks in TBLT, considering the way in which teachers implement tasks, set learners up to perform tasks successfully, as well as manage learners' attention to form-meaning connections (Samuda, 2001). There are three models for task-based methodology, as proposed by Ellis (2003), Nunan (2004), and Willis (1996, 2012), and these models encourage teachers to reflect on different methodological options around and during tasks to maximize learners' task performance and learning (Baralt & Morcillo Gómez, 2017).

2.7 Scaffolding

Jerome Bruner (1957) introduced the concept of scaffolding, which refers to the amount of assistance required for a learner to successfully perform a task or understand a concept. According to Bruner (1983,1990), as cited in Cameron (2001), language is vital for cognitive growth and he has investigated the manner in which adults utilize language in order to aid children in solving their issues. Wood (1998), as cited in Cameron (2001), mentions several ways in which teachers are able to scaffold the students' learning, such as suggesting, providing focusing activities and modeling.

All of these strategies have potential to amplify language teaching, due to them all having the common notion of helping children attend to what is important (Cameron, 2001). It is possible to provide several examples of successful strategies for the given task or activity or introduce the learners to learning aids such as word banks or dictionaries, which can be utilized by the learners when they have comprehended how they can use these tools to their aid. Modeling the use of these effective strategies can often give the students insight on how

to implement these tools more efficiently, due to it being able to ignite the imitation of the behavior (Amerian & Mehri, 2014).

Amerian & Mehri (2014) present an overview of different means of scaffolding implementation provided by various researchers. Explaining the task and modeling are presented, but the biggest focus surrounds questioning. Van de Pol et al. (2010), as cited in Amerian & Mehri (2014), highlights questioning as a resource constantly available to teachers in order to prepare for scaffolding. It provides the opportunity to access both linguistic and metalinguistic knowledge, while not only directing the learner, but also providing the teacher with the opportunity to aid the learner prior to and after scaffolding.

Furthermore, Gibbons (2003), as cited in Amerian & Mehri (2014), recognizes that the teacher's question as crucial when considering its impact on cognitive development of English in EFL. It provides an opportunity to continuously maintain interaction, due to the imminent demand of an answer, therefore providing students with an opportunity to learn. Additionally, it provides learners with an opportunity to articulate any uncertainties they might have (Edwards, 2005; Edwards and Mercer, 1987, as cited in Amerian & Mehri, 2014).

There are various instances in which scaffolding can be implemented in educational ER. The teacher is provided with an opportunity to design the tasks with a possibility to scaffold, such as creating hints or clues related to the tasks. In addition to teacher-led scaffolding strategies, peer scaffolding could also be employed, as suggested by Amerian and Mehri (2014). Furthermore, the importance of ongoing dialogue between the teacher and the learners is emphasized in the literature (Amerian & Mehri, 2014).

2.8 Vygotsky's sociocultural theory

Sociocultural theory, underlying Vygotsky's work, highlights the social context in which development and learning take place (Cameron, 2001). According to Brown (2014), the emphasis of the sociocultural viewpoints is the use of language as a primary tool, allowing for engagement in collaborative activity among language users. The focus maintains on the dynamic interaction among learners, their peers, teachers and others in their social

surroundings, and the significance of the social context in which a learner functions. Vygotsky emphasized that language not only serves as a tool for thought, but also as an ability which develops through social interaction in order to efficiently communicate (Brown, 2014).

As Vygotsky emphasized, language not only serves as a tool for thought, but also as an ability that develops through social interaction, primarily for communication with other human beings (Brown, 2014).

A critical component of Vygotsky's sociocultural theory is the Zone of Proximal Development (ZPD), which refers to the figurative distance between a learner's current developmental stage and their potential development (Brown, 2014). ZPD involves scaffolding, guiding learners in appropriate directions, and structuring tasks for success, rather than failure. Collaboration between teacher and learner is essential in achieving this (Brown, 2014).

Teachers can apply the concept of the Zone of Proximal Development (ZPD) and scaffolding to support language learning, especially in EFL. As Brown (2014) suggests, teachers act as facilitators in providing a nurturing environment for learners to face real-world issues and believe in themselves. Cameron (2001) states that teachers can mediate what learners can learn by planning lessons and adjusting their communication with students.

There are a variety of strategies which aid teachers in developing a supportive and inclusive classroom environment, in which the students are able to confidently make mistakes and effectively learn from these in their language learning. The teacher can foster this by providing individualized support and feedback, thus aiding students to identify their strengths and areas for improvement. Due to this, the teacher can help create an environment in which the students feel empowered and confident in their learning journey, therefore amplifying the chances of them reaching their full potential.

To provide a broad and rich language experience for learners within the ZPD, foreign language lessons should offer experiences that build necessary language skills (Cameron, 2001). For example, if the language skill being targeted is conversational fluency, the teacher could provide a variety of opportunities for students to engage in pair or small group

discussions that build on their existing language abilities. The teacher could scaffold the discussions by providing a common theme in written work, useful vocabulary, and grammar structures that enable learners to communicate more effectively. This way, students can learn how to actively use the language contextually, develop their critical thinking and analysis, as well as build their confidence in expressing themselves in a foreign language. Moreover, the classroom environment and the activities conducted in it can create opportunities for learning experiences that support learners in moving into their ZPD and achieving language development through scaffolding and other forms of support (Cameron, 2001).

2.9 Motivation

Ryan and Deci (2000) state that it is possible to divide the notion of motivation into two: intrinsic and extrinsic types of motivation. Intrinsic motivation arises within the learner, fueled by the need for cognitive and social development. It therefore refers to a natural tendency to seek out novelty and exploration needed to satisfy the inner curiosity. In contrast, extrinsic motivation involves performing an activity to attain some external outcome. The relative autonomy of extrinsic motivation can vary greatly, ranging from personal endorsement and a sense of choice to compliance with external regulation. While intrinsic motivation is inherently sustainable, extrinsic motivation may be less so due to its reliance on external contingencies rather than internal desires (Ryan & Deci, 2000).

Motivation is a crucial factor in language learning, particularly in explicit vocabulary learning. As Nation (2001) highlights, maintaining conscious concentration on vocabulary learning can be challenging for students, and motivation can play a pivotal role in overcoming this challenge. Numerous studies have demonstrated that motivation influences learning outcomes, with students who possess higher levels of motivation typically performing better than those who lack motivation (Gardner, 2007).

It is important to note that this study does not utilize digital games. However, exploring methods to enhance motivation in language learning by utilizing game-like elements is a focal point of this study. Previous research has suggested that digital games may be a promising avenue to achieve these goals. A scoping review of 50 studies conducted by

Hung, Yang, Chu, and Wang (2018) revealed that digital games have been effective in enhancing motivation and positively impacting language learning outcomes. Specifically, the most commonly reported positive outcomes were associated with learners' affective or psychological states, followed by language learning. Hence, understanding the impact of digital games on motivation and learning outcomes can have significant implications for language educators seeking to improve explicit vocabulary learning among students. Additionally, the study conducted by Hwang, Hung, and Chen (2014) found that a gamification approach based on peer-assessment improved learners' motivation, outcomes and problem-solving skills.

It is also important to address that there are still possible pitfalls in the implementation of gamification. One of the potential issues is that extrinsic rewards, such as points, achievements and badges, could possibly undermine learners' intrinsic motivation. The learners could perceive the rewards as controlling, therefore diminishing the desired learners' motivation (Mekler et al., 2017). Additionally, the overuse or inappropriate use of game elements may reduce learners' engagement and motivation (Dicheva et al., 2015). Therefore, it is essential to carefully design and implement gamification elements in a way that aligns with learners' needs and preferences.

Despite the challenges, gamification has significant potential for enhancing learners' motivation and engagement in education. As Pappas (2014) notes, gamification can create a more immersive and interactive learning experience, as well as provide learners with immediate feedback and recognition for their progress. By incorporating game elements that appeal to learners' intrinsic motivation, such as autonomy, competence, and relatedness, educators can create a more engaging and effective learning environment.

2.10 Learner autonomy

According to Holec (1979), learner autonomy refers to a student's ability to take independent actions in their own learning process (as cited in Pawlak et al., 2017). Developing vocabulary and grammatical competence that can be used in authentic dialogue is crucial in language learning, as it allows students to properly convey their intended meaning.

To achieve this, creating a classroom environment in which the students can actively and independently practice these skills is essential. The ultimate goal is to foster learner autonomy, where students take charge of their own foreign language development. As stated by Pawlak et.al. (2017), the focus is on acquiring practical and usable communicative skills, where students engage with the language and participate actively, driving their own learning process.

The gradual implementation of learner autonomy as a teaching strategy often leads to younger learners being less likely to practice it. Although Pawlak et al. (2017) argue that teachers bear the responsibility of fostering learner autonomy, younger students tend to rely more on their teacher's presence. This reliance is due to the fact that the source of linguistic activity for these learners is the teacher, rather than the students themselves.

However, Little (1991) disagrees with this approach and argues for learner autonomy to be taught to students as early as possible. Tasks and activities must be adjusted to the Zone of Proximal Development (ZPD) to prevent them from being too challenging. By providing opportunities to develop learner autonomy, students may increase their ability to think critically, make decisions, and engage in independent and effective learning and participation (Pawlak et al., 2017). While the teacher's role may not necessarily be active, scaffolding remains important.

Little (1991) claims that younger students benefit from the implementation of strategies which develop learner autonomy, due to it increasing their motivation and interest to learn the language. He also highlights that the tasks must be performed in a natural setting, where the students experience the tasks as meaningful and authentic. The situations in which the environment provides room for authentic activities, allies the students themselves to be the driving force of learning.

Gamification of the elements presented to students creates an opportunity for such an environment, in which it is possible to achieve the desirable level of student engagement. The combination of gamification implemented into ER allows for planning tasks, atmosphere and activities which take into consideration the pre-existing abilities of the students, whilst challenging them to be in control of their own learning. Thus, the aforementioned combination provides opportunity for effective scaffolding within the ZPD, constructed by

the teacher and highlighted by peer collaboration. The tasks designed for the ER are contextualized, thus impacting more meaning due to the fact that there is a purpose in solving the puzzles whilst learning the vocabulary and grammatical rules presented.

Esch (1996) presents five criteria for selecting appropriate methods to promote learner autonomy. They are Choice, Flexibility, Adaptability, Reflectivity and Shareability. The most notable in the context of this thesis is the shareability of the method. When using ER, the premise is found in task-based learning, providing students with an opportunity to work together in order to solve problems. The structure of this method encourages students to communicate and share language with each other in a naturally created environment. In this case, the content of what they are sharing is also relevant, given that they are discussing and actively working with vocabulary and grammar. As Esch (1996) states, shareability has to do with "doing things together" (p 44). Additionally, she argues that this is important no matter which type of task the students might be working on.

Some challenges in teaching learner autonomy could potentially be that there is a varying amount of pre-existing knowledge. The classroom consists of students with a wide range of knowledge and ability, whereas some students would have the need for more scaffolding. While the teacher might be able to provide varying amounts of scaffolding, in a group-based setting this might negatively affect the student's engagement due to disruption. In a more teacher-dependent approach the students may be prevented from being able to provide scaffolding for each other, which is an important aspect of promoting learner autonomy. Appropriate balance between the activity of the students and the activity of the teacher is therefore needed. Other students might also lack the motivation to engage in the activity, either preferring to be given traditional explicit tasks to work on or distancing themselves due to uncertainty of their capabilities. While these concerns are valid, most students would hopefully be motivated to participate and take action due to the nature of ER, in which discovery and problem-solving are at the heart of it.

2.11 Chapter summary

This chapter explored various theoretical concepts and approaches related to language learning and teaching. The theoretical concepts discussed in this chapter can provide a

foundation for developing effective language teaching practices that promote meaningful learning and engagement.

Gamification and the use of educational escape rooms can create an immersive and motivating environment for language learners, preparing occasions for collaboration and active participation. Task-based language teaching can provide opportunities for students to engage in authentic and purposeful language use, while scaffolding and Vygotsky's socio-cultural theory can aid learners to gradually develop their language abilities with support from their teacher or peers. The importance of vocabulary and grammar learning was also highlighted, as these are fundamental aspects of language proficiency.

In addition, motivation and learner autonomy were discussed, due to them being crucial factors which can influence language learning outcomes. Environments in which learners are able to develop understanding and control of their learning process are fostering learner autonomy, which, in turn, allows teachers to facilitate a grander variety of meaningful and effective language learning experiences.

This chapter has presented that a combination of these theoretical concepts and approaches is able to provide a ground foundation needed to design language learning experiences and environments which are engaging, effective, as well as have the opportunity to promote long-term language proficiency. However, it is important to note that there are limitations and challenges in implementing these concepts in practice - in order to refine and improve the implementation of these approaches, whilst taking into account the various needs and contexts of learners and their environments, further research and experimentation is needed.

3. Methodology

3.1 Introduction

This chapter describes the methodology used in the study, which aimed to explore the effectiveness of implementing an Escape Room design in a 6th grade Norwegian EFL class using action research. The ER included a series of physical and digital tasks, guided by a digital Google Forms questionnaire. The chapter also presents the vocabulary sets that served as the basis for the task and story development and design. The planning process and the lessons conducted using the Escape Room are discussed in detail, including their objectives, implementation, and evaluation. The evaluation was based on teacher observations and student group interviews, which were used to assess the level of engagement and learning outcomes achieved by the students.

3.2 Aims and General Procedure

The main focus of this study was to evaluate the implementation of ER in an EFL classroom by utilizing AR, while maintaining the correlation to the curriculum. This evaluation was based on teacher observations of student engagement and motivation, as well as student feedback gathered from group interviews. Furthermore, there was a motivation to review and assess the teacher-researcher's own structure of lesson planning and teaching methods, thus providing an opportunity of professional development. To summarize, it is possible to state the following as the main research question of the study:

"Does the implementation of gamification through Escape Rooms have an effect on students' engagement when working with tasks related to grammar and vocabulary in a 6th grade EFL Norwegian classroom?"

This research question is important because it investigates a different approach to improving student engagement in language learning. Additionally, the focus on grammar and vocabulary tasks is of interest, considering how it explores whether gamification can support language learning more broadly, which highlights the need for innovative teaching methods that can accommodate student needs and preferences.

The study utilized the AR method, chosen for its ability to provide a customized approach suited to the class and students under investigation. AR emphasizes the importance of review and evaluation, which was critical in the various stages of the study to assess the effectiveness of the implemented idea. To implement gamification, an ER was used as a practical tool, as it was a structure compatible with AR. By utilizing this method, the research was able to thoroughly evaluate and review the effectiveness of the gamification approach in a classroom setting.

3.2.1 Context and participants

The class in which the research will be performed consists of 27 pupils, 13 boys and 14 girls. The students are in 6th grade, thus being eleven years old. These students have all had English as a school subject since the first grade.

3.2.1.1 Teachers involved in the study

The teacher-researcher is the student's teacher in several subjects, including English. The familiarity that the teacher-researcher has with the students aids in ensuring that the students were aware of the fact that participation was voluntary as well as were comfortable enough to change their mind if needed. The teacher-researcher conducted both phases of the study and performed the student interviews. The second teacher, present throughout both phases of the study but not in the data collection from the student interviews, was the class's primary teacher. This helped ensure that the students were comfortable if they decided to change their mind about participating in the study. The second teacher's function during the study was to observe student interaction and take note of which questions were asked by the students throughout.

3.2.1.2 Curriculum

A major focus during the planning of the study was ensuring its cohesion to the 6th grade curriculum for the English subject in a Norwegian school. In order to establish the coherence between the study and the curriculum, target words from vocabulary for the 6th grade level were selected and used as a baseline in creating the entire project. These

vocabulary sets can be viewed in section 3.8. Additionally, the designed tasks revolved around grammar rules that are cohesive with the grammatical focus for this level in the English curriculum.

3.3 Teacher-Researcher

The teacher-researcher plays a crucial role in AR, as they are both the teacher and the researcher in the study. This role allows for several advantages, both regarding the professional development of the researcher as a teacher and the intimate understanding of the dynamics in the class that the research will be performed in.

AR allows the researcher to be the students' teacher: The teacher-researcher is in a unique position to conduct AR as they are the one teaching the class, thus allowing for a unique insight of the classroom and students that an external researcher may not have.

According to Dörnyei (2005; 2006; 2009), several factors may impact one's ability to acquire knowledge related to a foreign language. Anxiety, learning styles and strategies, as well as motivation are mentioned as these factors, which are quite important when considering the age of the participants of the study. Throughout these unfamiliar lessons, several questions and uncertainties regarding instructions or understanding of the tasks may occur among the students. The importance of the familiarity of the teacher-researcher present is again highlighted, ensuring that the students are comfortable with asking as many questions as needed. The teacher-researcher can efficiently intervene and make changes as necessary throughout the study, due to their close relationship with the students and understanding of the classroom dynamics. This possibility of intervention will therefore be able to maintain the focus on the tasks and resolve any issues immediately as they occur, thus not diverting attention from the whole class.

Additionally, due to the teacher-researcher being familiar with the class, they have insight into what the students are used to and what their preferences are, thus being able to design activities which can be engaging and effective. Considering the different structure of the lesson, this familiarity may make students more comfortable participating in a setting

with an unfamiliar structure. This could lead to increased engagement, confidence and motivation and may aid them in being more open in engaging with unfamiliar tasks, as well as hesitate less when asking questions if anything is unclear. The familiarity with the teacher-researcher and the classroom environment can aid in the implementation of the study and adherence to set routines and curriculum.

To summarize, the fact that the teacher-researcher has knowledge related to the class dynamics, student preferences, routines and curriculum can aid the study in creating tasks based on learners' experience as well as ensuring a learner environment in which the students feel comfortable and at ease.

3.4 Action research

Kurt Lewin is regarded to be the father of AR, a research method which aims to enhance the practice of professionals in their respective fields (Couglan & Jacobs, 2005; Kemmis et al., 2014). Therefore, AR is a more practical research approach, allowing the researcher to understand and investigate their own practice as a professional agent in their field. McNiff & Whitehead (2010) present AR as a practical way of researching your own teaching and methods to check whether it is as satisfactory as you feel it should be. This method focuses on a process which involves reviewing and adapting accordingly, as well as requiring time to review what worked well, why and the opposite. Considering its capabilities and use for professional development, AR differs from traditional research, in which the contribution of knowledge to the field itself is regarded as highly important. Although the main concern of AR is the professional development, the discussions that arise from AR can be more generally valuable in the field. The results from this type of research may inspire, transform and inform other professionals, therefore being able to contribute to the field in a more practical sense.

In contrast to traditional research, which typically relies on a literature review to develop research questions and hypotheses, AR allows for the researcher to use specific issues related to a particular area as the foundation for their research questions (Coghlan & Jacobs, 2005; Kemmis et al., 2014). The research is therefore shaped by the practical knowledge, experience and practice of the professional. This study focuses on English

didactics and the development of educational strategies which could aid EFL learners at a primary school level in Norway. Considering this, it is possible to develop research questions without necessarily requiring a literature review. After the research questions are formed and the general idea is formulated, the researcher will investigate the literature related to the specific questions which are to be explored (Rust & Clark, 2007).

There are potential pitfalls in the use of this method, which some critics have pointed out (Kemmis et al., 2014). Considering that the teacher-researcher is an active participant in the project and not a passive observer, critics claim it is difficult to maintain objectivity and, therefore, the legitimacy of the results may suffer. The data and results could then be examined through a biased lens, potentially making the project a source of misinformation. While these concerns are reasonable and understandable, this thesis argues that the potential benefits of an active teacher-researcher far outweigh the issue of objectivity.

The researcher has the initial benefit of being an insider, holding extensive knowledge about the ramifications and the practical setting of the research project (Kemmis et al, 2014). This allows the researcher to evolve and adjust continuously not only throughout the study, but also after the completion of the project. In a classroom setting, there are significant benefits of being able to communicate with the students in a familiar manner. Instead of changing the classroom practice in a way that can be disruptive to the students, the adaptable nature of AR provides the researcher with an opportunity to adjust their practice in a way which would benefit their students the most. Thus, the teacher-researcher has a significant benefit in being aware of concepts that the students are comfortable with. It will simplify the explaining of elements regarding new concepts in a manner with which the students are familiar with, while heightening the student comprehension, compared to a situation in which the teacher-researcher would be a passive observer.

Furthermore, the teacher-researcher is familiar with the practices of the school, including their guidelines and routines. Due to this familiarity, especially regarding possibilities and limitations, it is therefore easier to structure the project in a manner that is cohesive with the expectations in that school. It also benefits any potential changes to the practice of the teacher-researcher, providing them with clearly set parameters to work from. In addition, any unexpected situations can therefore be overcome with less strain due to the teacher's familiarity with possible solutions at that particular school. Again, the teacher can

adjust and review their practice continuously to make the study fit as naturally in the present conditions as possible.

Moreover, AR can be viewed as a practical and dynamic process that allows participants to improve their practice. The opportunity to review and analyze their understanding of their own practice can ensure that they are practicing education and not just schooling. Thus, AR has been chosen as the research approach for this particular study due to its adaptable nature. The content of the study combined with a teacher-researcher, whose aim is to further develop their own practice in the field of English didactics, is very well suited to the principles of AR.

3.4.1 The various stages of AR

Throughout the development of this research method, several steps and stages have been suggested. However, some core features have remained more or less consistent with the main aim of the method, namely, to develop a professional's practice in a field. The framework for AR involves four phases: planning, action, observation, and reflection (Kemmis & McTaggart, 1988). To have a better understanding of this framework, it is crucial to have an overview of its cyclical nature of data collection and analysis. The aforementioned phases are closely related to the AR spiral, a model which portrays the cycle:
(1) Plan, (2) Act, (3) Observe, and (4) Reflect (Kemmis et al., 2014).
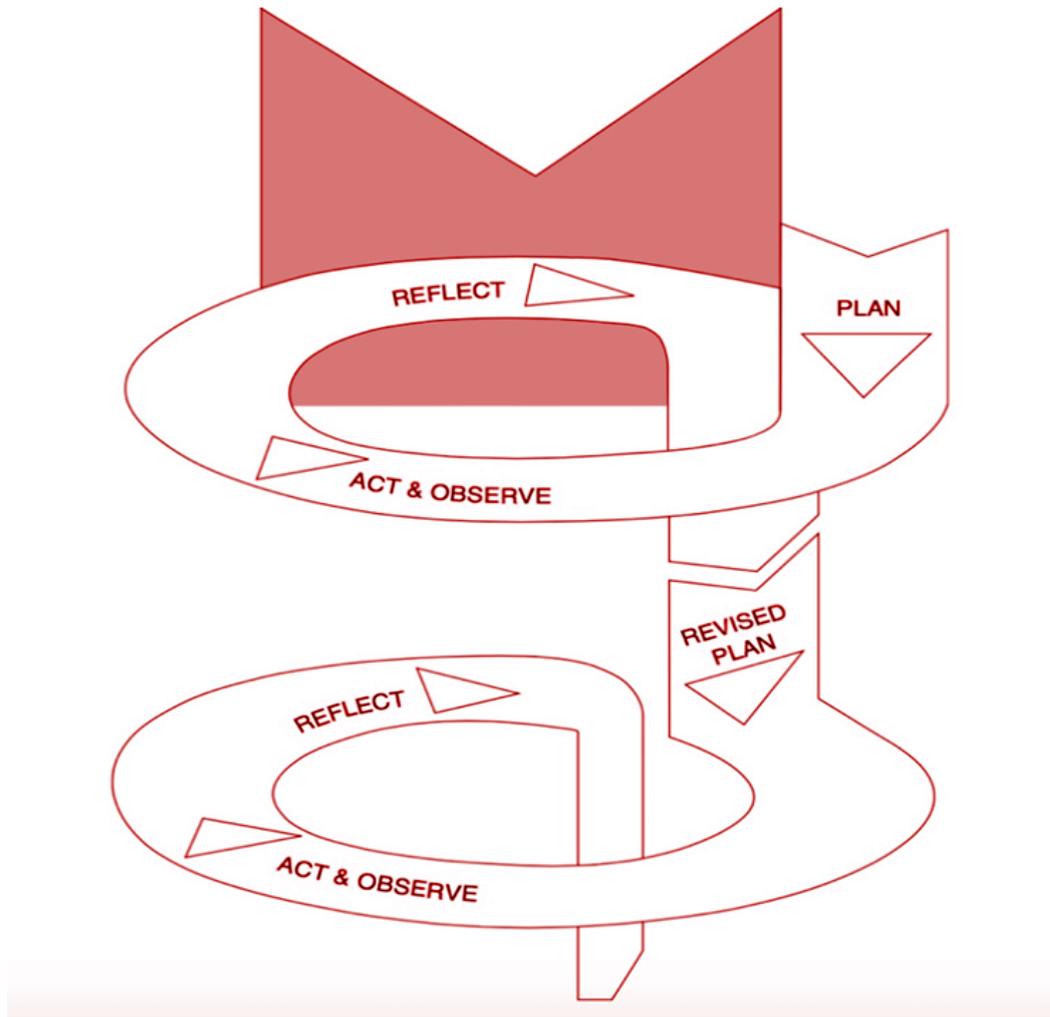
Figure 1: Kemmis, S., & McTaggart, R. (2007). The Action Research Spiral (p. 278). Routledge.

Figure 1 demonstrates that planning is the first step of the cycle, followed by acting, observing and reflecting. Then, the model shows a downward arrow, presenting another round of planning, acting, observing and reflecting. In theory, this spiral could go on for as long as necessary. One could argue that the stage of re-planning is the core of this research method. This specific element of AR is closely related to the observations and reflections made in the previous cycle. The main aim of re-planning is to evaluate and learn from the previous experiences, adapting the practice while attempting to prove more successful than the previous cycle. Therefore, Kemmis et al. (2014) explain that the cycle is self-reflexive, as

one continuously reviews the changes which have been implemented, in order to make new changes for the next cycle which will then also be observed and reviewed.

The linear portrayal of stages in AR is often not an accurate reflection on the process itself. The initial plans and stages intertwine and overlap, often due to new experiences and knowledge acquired throughout the study (Kemmis & McTaggart, 2014). Therefore, the cycles of AR are more complex and dynamic than they may appear on the model.

Depending on the circumstances, the teacher-researcher might re-plan and implement changes when unforeseen challenges arise. The classroom is a dynamic, everchanging learning arena that can vary from day to day, considering the potentially unpredictable behaviors of the students themselves. Other challenges might be changes to the schedule or other time management issues, changes in the number of physical resources, health complications which impact group sizes, digital complications, and so forth.

In other cases, one can observe that small changes have huge benefits and thus choose to continue those changes more permanently. Following the preciseness and accuracy of the different stages of the cycle does not equal a successful AR study (Kemmis et al., 2014). The success of an AR study is determined on whether the researcher is able to gain a better understanding of their own practice and can implement positive changes into their work.
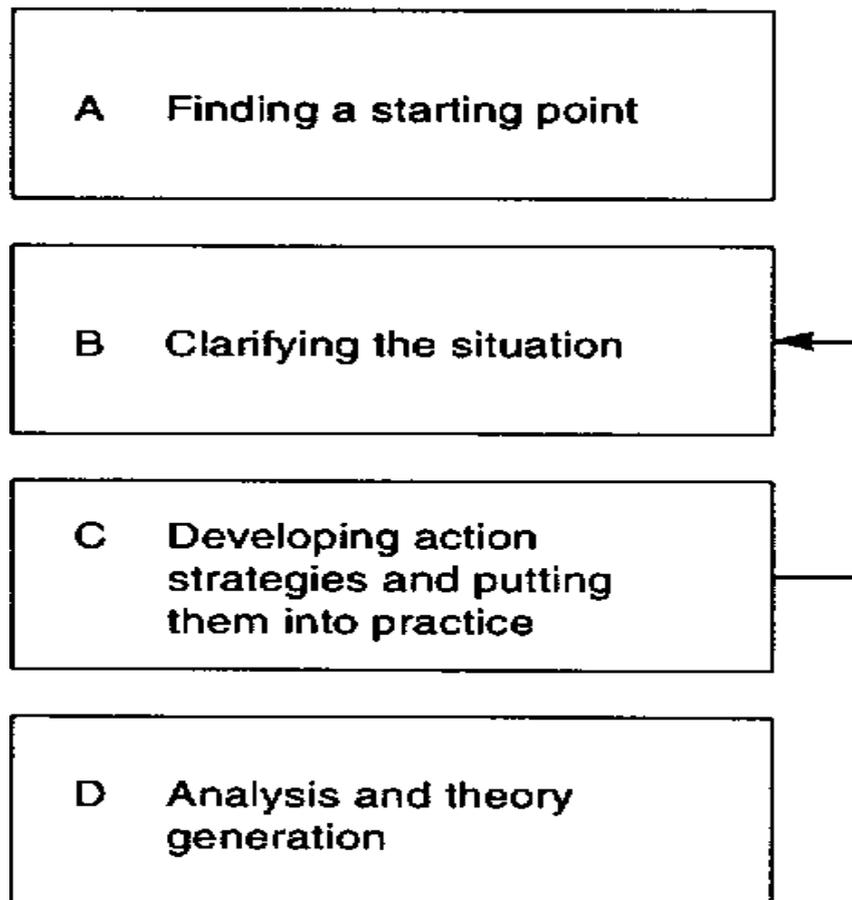
Figure 2. Stages of Action Research Process. (Altrichter et al., 1993, p.6. Routledge)

Figure 2 presents a different approach to AR, in which the main aim is still the same, to develop the researcher's practice. However, in this approach, the four stages are presented with the letters A to D. Altrichter et al. (2005) explain the different stages, and state that the researcher should begin their AR study by identifying a practice that could be developed further, acting as the researcher's starting point. In this thesis, the starting point would be the adaptation of a different type of educational practice in order to motivate students in learning new vocabulary and grammar. The educational practice in this study is the implementation of gamification through educational escape rooms as a tool for educators and students.

In summary, the main motivation for the teacher-researcher when using this research method is improvement. AR is intended to ensure that teachers, students, and others practice education, not just schooling, in their local settings (Kemmis & McTaggart, 2014). By engaging in the spiral of AR, researchers are able to actively improve their practice and gather evidence to evaluate how the practice has improved (McNiff & Whitehead, 2010). This spiral process invites researchers to be active in their education, which directly affects

their surroundings, helping them to form a healthy learning sphere (Kemmis & McTaggart, 2014).

3.4.2 The AR cycle in this thesis

This AR study utilizes an approach that is primarily qualitative, based on student feedback through interviews and teacher observations. This method was chosen due to its focus on the researcher's professional actions and improvement, alongside the possibility of actively implementing student feedback.

The process began by defining the research aims, which allowed for planning and designing the first phase. The planned lesson was executed and therefore provided a data gathering resource. Data was gathered through student interviews directly after the first phase and teacher observations during the performance of the first phase.

After the data was collected, it was reviewed and analyzed to determine what worked well and what was less successful. This analysis was used to reflect on the collected data and to begin preparation for the creation of the second phase. The second phase was prepared based on the conclusions gathered during the review of the data from the first phase, and data was again gathered through student interviews and teacher observations during the execution of the second phase.

Once the second phase was complete, the project was summarized and evaluated to determine what worked well considering the edits made and what did not work even though it was edited. All student interviews and teacher observations were gathered to allow for the creation of a finalized conclusion.

3.5 Research Methods

In this study, two main methods for data collection were used, which were teacher observation and student interviews. The aim of the teacher observation was initially to note which questions were asked by the students, thus providing data into possible issues with task design. Additionally, the teacher observations were intended to monitor which of the tasks in each phase generated the most student engagement. Due to the dynamic nature of the

classroom, several other observations occurred, in the unstructured manner. These were notes regarding the topics of the student conversations while working in groups, unexpected issues or general feedback related to the tasks or the digital guide, as well as issues in group collaboration. The researcher, along with the other teacher, took notes throughout the phases on student interactions, behavior, and questions regarding the various elements of the lessons.

The student interviews were conducted in groups after each phase, and the groups were determined by the teams they participated in. The students were encouraged to each state their own answer to the question, and the set of questions included asking whether they enjoyed the tasks, struggled with any of the tasks, and what they thought about the lesson, including feedback on the Google Forms guide, additionally providing room for any other commentary regarding the lesson.

The researcher used several methods for data analysis, including comparing observation notes, drawing conclusions from student interviews, thus combining suggestions from observation notes, their own experience from planning the first phase, and feedback from student interviews prior to planning the second phase. The final evaluation of the entire process involved discussing and comparing observation notes, student interviews from both phases, and planning experience from the entire experience.

Cotton et al. (2010) mentions that qualitative research can encounter issues of reliability, due to the fact that interpretation is vital in order to analyze the gathered data. In order to enhance the reliability of the qualitative data that was obtained, the researcher used triangulation. According to Siverman (2018), triangulation can be defined as a way to compare different forms of data in order to determine whether the gathered information corroborates, despite the different methods implemented to obtain it. The use of different methods, such as observation and interviews, enabled the researcher to gain a deeper understanding of the situation and minimize bias. Additionally, triangulation helped in enhancing the reliability of the findings by comparing different findings and methods (Silverman, 2018).

In conclusion, the use of teacher observation and student interviews provided rich data for the researcher to gain insights into the student experience during the ER and into the

process of developing such a lesson. The use of triangulation helped in enhancing the reliability of the findings and providing a more comprehensive understanding of the situation.

3.6 The digital guide

In order to create a structural overview of the phases and the tasks within them, a digital guide was chosen to be implemented. This guide was made using Google Forms, a free website that is often used for questionnaires. Google Forms was chosen specifically due to the fact that the researcher had knowledge of the structure within this digital tool, as well as experience implementing it in an educational setting.

The digital guide had the opportunity to act as a moderator of the lesson, due to the fact that it had the functionality to not let students proceed until the correct answer was provided. Additionally, it had an opportunity to provide the students with hints in the instances where they might get stuck.

Google Forms has a variety of task formats as well as other structural functions that could be used in an escape room lesson. There is an option to divide material into several sections and programming access to these sections based on whether the correct answer was given or not. This was utilized effectively in order to divide the lesson into smaller, easier to comprehend sections for students to interact with at once. The sections were divided based on the tasks, with some information being presented to the students in between. There are various question formats available in Google Forms, multiple choice and a short answer being the most relevant for the lessons in the study. Both of these task configurations were tested in the lessons and observed on how they impact student interaction.

As stated earlier, the digital guide had an opportunity to provide the students with hints and aid them to a degree. This ability varies depending on the chosen task format. If a task is designed to have a multiple choice format, there is an opportunity to assign a hint to each of the incorrect answers. This is possible to incorporate by creating sections that are made specifically to provide suggestions to the students, and directing the incorrect answers to lead to the appropriate sections. In the short answer format, this option is not available. There is, however, a possibility to write a single hint that is shown to the students when they

input an incorrect answer. This hint does not vary depending on the answer that is input - it is consistently displayed whenever any other answer than the correct answer is entered. Additionally, this hint always displays in a red text below the input area.

3.7 Escape room structure

For this study, an ER was designed featuring a cohesive fantasy story, two distinct phases with four vocabulary-based tasks related to the curriculum, physical materials required to complete the tasks and provide clues, and a digital guide that acted as both a moderator and storyteller. The estimated time frame for these lessons varied from 60 to 90 minutes.

The storyline in the fantasy story focused around a princess that aimed to help her kingdom as she embraced her magical powers. This type of storyline was chosen so that the selected target vocabulary would be contextualized, while maintaining the student interest with a story that was exciting and easy to follow. The story was available to the students by using the digital guide as a storytelling tool, which is explained in more detail later on in this section of the chapter (see section 3.7.2).

There were a total of eight tasks, all of which utilized the target vocabulary. The first phase contained tasks that focused on rules regarding indefinite articles, spelling of target vocabulary, punctuation, and understanding directions. The specific design of the tasks varied and is more closely explained later on in this chapter (see section 3.9 for the tasks in the first phase). The second phase had tasks focusing on sentence structure, deciphering words within a context, understanding directions, and decoding textual information. The design of these tasks is explained in more detail further on in this chapter (see section 3.11 for tasks in the second phase). All of the tasks had an aim to encourage students to discuss the puzzles and collectively devise strategies needed to solve them.

In order to heighten the engagement level, as well as the motivation factor, almost all of the tasks were presented to the students in a physical format. This was also done to simplify the logistics of the lesson, considering a collaborative environment was easier to achieve without the concern for battery level of 27 chromebooks. Additionally, the physical elements provided created a common area for the groups, thus, again, ensuring a collaborative experience. Several of the physical materials were hidden in the room, in order

to create excitement amongst the students. An overview of the physical materials presented to the students is provided further down in the chapter. Clues and hints were provided to the students when needed, both verbally by the teachers and by the digital guide. Some physical clues were provided to the students in order to aid them in solving the puzzles and challenges presented to them.

Upon completion of the escape room, the students were interviewed by the teacher-researcher in the groups they had participated in the lesson in. The interview contained several questions regarding their experience of the lesson, giving them an opportunity to inform the teacher of their feedback.

3.7.1. Physical materials

The lessons contained a variety of physical materials that were presented to the students, both initially and some gradually throughout the lesson. The materials had several functions, such as providing groups a common area to write down their notes or being designed in a way that enhanced their immersion to the story. An overview of the physical materials used is provided below, due to these being frequently mentioned in the methodology sections regarding the first phase (see section 3.9) and the second phase (see section 3.11). Images of all of the materials mentioned here can be found in appendices 5 and 6.

Both phases included the use of a "common area mat", which was provided to each group. It functioned as a gathering point for each group, containing clues and tasks, as well as functioning as a collective notepad for the students. The common area mat was created using three pages of the A3 size, taped together vertically. These papers had an old parchment design printed on them, in order to enhance the immersion related to the story. The common area mat for the second phase also included imagery printed on them, resembling a map. This change was implemented to enhance immersion amongst the students.

Both phases also included envelopes attached to the common area mat using blu tack, containing either tasks or clues. The envelopes had the same old parchment design, as well as varying symbols so that the digital guide was able to direct the students to open them when

needed. The envelopes from the first phase contained symbols of scroll and a bird, while the envelope from the second phase will contain a scarf symbol.

Besides the common area mat and the envelopes the first phase contained several other physical materials. These differed from the materials that were presented to the students in the second phase. Inside the envelope marked with the bird symbol, a story related letter with an image of a red feather was placed. The first task was printed out and cut out to resemble a scroll design. It was laminated and was the only task containing information on both parts of the task, it being the interdisciplinary mathematics part. The second task was printed out on an old parchment paper design and was also laminated. The third task was printed out using the same design as the common area mat. It was rolled together as a scroll and tied together with a string. The fourth task contained several physical materials. The main task consisted of a word scramble mat, printed on an A3 sheet of paper using the same old paper design as the common area mat. The envelope with the scroll symbol contained four letters functioning as hints for this task. Each of these letters contained a different image printed on them, whilst the background was an old parchment paper design.

The second phase also contained a variety of physical materials. The envelope marked with the scarf symbol revealed the materials required for the first task. These were three small envelopes marked with numbers 1, 2 and 3, containing various parts of sentences in each envelope; a paper providing the students with a cipher code necessary to solve the task; instructions needed to solve the task and the sentence scramble mat. All of the materials mentioned above were printed using the old parchment design as a background. The common area mat also contained a part of the second task - an image of a shelf containing several colorful flasks. This was partly hidden in the common area mat, the only visible part folded over and marked with the word "Attic". The envelope containing the third task was an A3 size envelope with no design printed on it. This envelope contained four letters and a story related picture to provide context and create suspense.

Each task and common area mat had a group token indicator on it, in order to ensure that each group had exactly one of each physical material provided. All of the materials mentioned above were prepared for each group. The total amount of materials therefore needed to be multiplied by five, due to five groups participating.

3.7.2 Digital guide as a storyteller

The Google Forms guide was actively utilized as a storytelling tool in this study. It was divided into two separate guides, one for each phase. The storytelling element of the guide made an appearance in between tasks, in order to provide context between the various tasks when needed. The text of the story that is present in the guide was also quite often read aloud by the teacher-researcher when it was needed. Implementing the story into the digital guide also allowed for an addition of images that will aid the students in visualizing elements of the adventures presented to them. Digital guides from each phase can be viewed in appendices 3 and 4.

3.8 Vocabulary sets

The finished design of these educational escape room lessons was gradually created from carefully selected vocabulary sets that aligned with the curriculum. The selection of the words was crucial and strategic, in order to follow the planned course as well as effectively being building blocks of the story. This vocabulary will also be referred to as target words throughout the thesis. These words were continuously utilized throughout the process in which the storyline for the escape room lessons was created, ensuring to implement the vocabulary into as many tasks as possible. Due to this, both phases of this study featured lessons with a continuous storyline that utilizes and focuses on target vocabulary.

To ensure that the students were familiar with the vocabulary used to create the story and the tasks, these sets were given to the students as glossary homework. The usual structure of glossary homework was sustained, as the students get a new set of vocabulary they are required to learn every two weeks. The glossary is separated into three levels, referred to as steps. This division accommodates varying levels of difficulty in their homework. As a result, students that work on step 1 will only practice glossary on their step and so on. It is also usual practice that students that wish to advance to the next step often practice both their assigned vocabulary step, as well as the step above and attempt to fill out both when the glossary tests are performed. This is relevant to mention because this was taken into consideration when the groups for the ER lessons were created.

The target vocabulary for the first phase is presented below, following the separation into three steps.

Vocabulary set 1					
Step 1		Step 2		Step 3	
to compete	å konkurrere	bowman	bueskytter	knight	ridder
to buy	å kjøpe	to practise	å øve	wagon	vogn
to shoot	å skyte	excited	begeistret, spent	debut	første opptreden
arrow	pil	to solve	å løse	mystery	mysterium
prize	premie	tyrant	tyrann	fearless	fryktløs
forest	skog	hooves	hover	satisfaction	tilfredshet
clue	ledetråd	anger	sinne	destiny	skjebne

The target vocabulary for the second phase is shown below, following the division into three steps.

Vocabulary set 2					
Step 1		Step 2		Step 3	
trouble	trøbbel	shelf	hylle	shadow	skygge
to cause	å forårsake	to decide	å bestemme seg	exactly	nøyaktig
to hit	å slå	tired	trøtt	enough	nok

clever	flink	surely	sikkert	across	tvers over
fault	feil	to notice	å legge merke til	to shiver	å skjelve
either	heller	to suffer from	å lide av	gate	port
explanation	forklaring	eventually	til slutt	attic	loft

3.9 The First Phase

The study was performed in a 6th grade class with 27 students in a Norwegian public school. The participants' age was 10-11 years old and they were familiar with the teacher researcher. The theme of the lesson was related to several texts that the students received as homework, following the material related to the curriculum. Approximately a week prior to the lesson itself, the students received target vocabulary for the lesson as glossary homework. This target vocabulary was used as a base in planning the tasks for the first phase. These tasks were therefore used as a baseline for creating the story supporting the task progression.

The lesson used a fantasy theme, which corresponded with the texts given to the students as homework, and tasks were created using this as a baseline. The design incorporated both digital and physical elements, while using the structure of an educational ER. The digital element in this lesson was the Google Forms guide (Appendix 3) that was designed by the teacher-researcher and sent out to the students using Google Classroom, a digital tool that the students are very familiar with. The students have not had a lot of experience with using Google Forms, so one of the interview questions was focused around their experience navigating this digital tool.

The digital Google Forms guide was created gradually, simultaneously as the story was created. The formatting of the guide was developed after the tasks' design was defined and had a clear outline. Approximately a full day was needed in order to complete the design of the guide for the first phase, mostly due to uncertainty regarding the visual structure of it.

The teacher-researcher had previous experience with using Google Forms, which made the process easier considering there was no need to set aside time to learn the system. Initially, the guide was divided into sections surrounding the tasks, deciding which task formats to implement.

The students were presented with the plan for the lesson and the structure of it was explained in detail. A set of rules was shown and explained to the students (these rules were also shown to them on the first page of the Google Forms guide) in a whole class setting, carefully going through each point and leaving room for questions. These were the above mentioned rules that were presented to the students:

1. You are assigned to a team.
2. This form will be your adventure guide - read everything carefully.
3. You will need each other's help - talk together to solve the tasks.
4. You only need one Chromebook.
5. If you do not understand a task after talking together as a team - find an adult to help.

After all points had been thoroughly discussed and presented, the students were told which groups they were in. Specific students were asked to use their Chromebook for the interactive guide, in order to avoid any unnecessary discussion regarding this topic. The students were grouped in five groups. The student distribution in these groups was decided by the teacher-researcher prior to the lesson. The groups were divided in a manner that did not separate based on student ability in the subject, instead the groups are intended to be a combination of varying levels in order to create a nurturing environment for discussion during the lesson. Upon finding their team, the students were sitting together with their groups as the physical materials were handed out. The physical materials that were provided to them are the common area mat, which had two envelopes added on top of it using blu tack. The groups were also provided with markers, pencils and erasers. All of the physical materials mentioned in this section can be found in appendix 5.

Following this, the guide presented the first part of the story that the students followed along to. This part was read to the whole class by the teacher researcher, translating when needed. The entire story was produced by the teacher-researcher, revised in some areas by a

fellow teacher. Additionally, the guide had several images to accompany the storytelling. This was done in order to help the students visualize and give them visual hints when needed.

After the first part of the story was presented, the students were directed to start using the interactive guide. It asked them to select the team color that corresponded to the physical materials they had been presented with. Following this, the guide showed them the very first "scavenger hunt" hint in order to find their first task. The hint would then guide them to look under their desks; one of the group members had the first task taped underneath it.

The structure of the escape room required a cohesive story line if the created tasks were to function properly. As the tasks took form, a significant amount of the story was created due to the texts located in the tasks. However, the transitions between the tasks, as well as the introduction, were still missing. The transitions between the tasks were created using simple scavenger hunt hints, imploring the students to locate the next task. These were combined with parts of the story in order to create a sense of cohesion and progression for the students. The introduction to the story was created almost entirely towards the end of the planning of the first phase and was the biggest part of story related text besides the tasks in the first phase.

For the first task of the lesson, the design originally originated from creating sentences by combining some of the words from the target vocabulary. The sentences were designed in a way of introducing the students to the story while creating suspense. As the task had recently worked with the topic of indefinite articles, the task's main focus was on the correct implementation of the grammatical rule. In order to accommodate for the input formatting in the digital guide, an interdisciplinary math part was implemented. This mathematical part was edited and revised throughout the planning process, in order to make it clear and easy for students to understand. In order to assure this, the math part was presented with color-coordinated visual aids.

The first task of the lesson focused on inserting indefinite articles correctly in a presented text related to the story. The text consisted of three sentences, which contained several words from the target vocabulary. The main purpose of this task was to count the number of times the students used "a" and "an" and solve a math equation using those numbers.

The students input the answer into the digital guide and were able to continue to the next stage when their answer was correct. If the answer was incorrect, the guide was programmed to tell the students to try again.

A or An?

On __ dark road through the forest __ creaky wagon was headed to the city.

The Queen was __ tyrant of the worst kind to everyone but her daughter Rosanna.

__ arrow shot through __ open window and brought __ strange note to the princess.

A or An?

a was used ____ times.

an was used ____ times.

a = 4 × ____

an = 3 × ____

a + an = ____
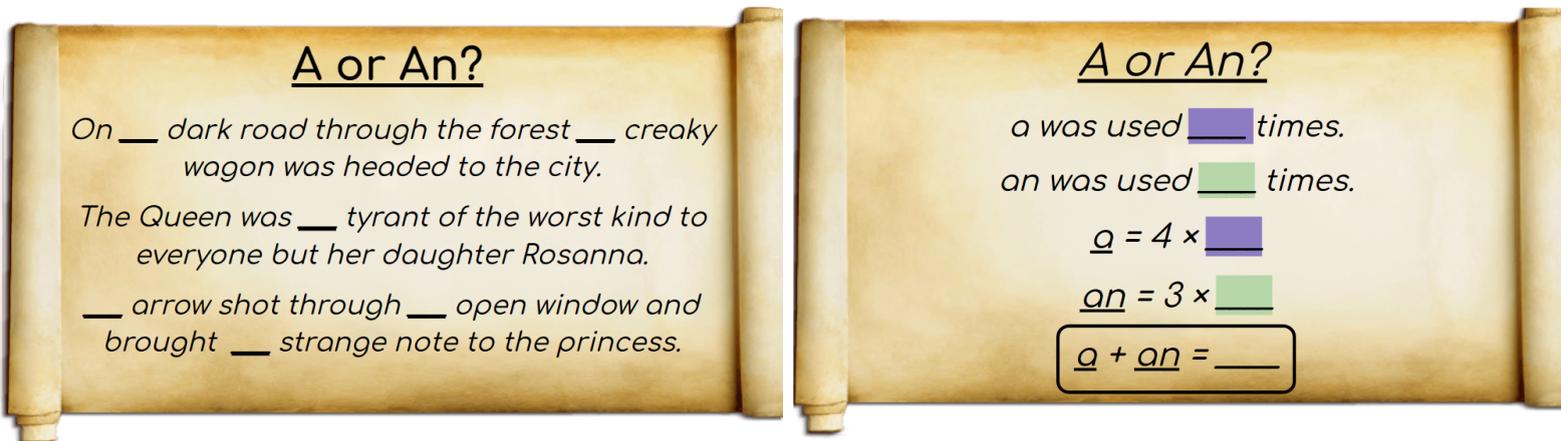
Figure 3. This image presents both sides of the task in its physical format, as it was presented to the students in an A4.

After inputting the correct answer in the digital guide, the students were presented with a hint of where to find the next task. The text suggested that the students should look to the newspaper pile in order to obtain the task they needed to obtain.

The second task was created as a continuation of the story, while its aim was to emphasize correct spelling. There were some spelling mistakes that were purposely made very obvious, in order to ease the students into working with a task of an unfamiliar design. The task consisted of 15 spelling mistakes, each containing an extra letter. These superfluous letters spell out a story related hint when written in sequence of their appearance. Originally, this hidden message was intended to be the input students had to register in the digital guide in order to continue. This was changed due to the potential confusion this would create amongst the students, considering the fact that they were not used to a puzzle of this manner. Instead, the digital guide was formatted requesting a correct number of spelling mistakes to

be chosen. The digital guide would inform the students if they had input too few or too many mistakes.

Dear Princess Rosannah,

Please do knou how happy we are witth the niews of the competition.
There are many excited bowmenn practicing in the foresf.
They oll keep talkring about the preize.
Moving to the sity is a dream to many oft us.

Princess Rosannah, I thenk you.
To compele with my pow and arrow is the best chance I have had.
- a hopeful friend
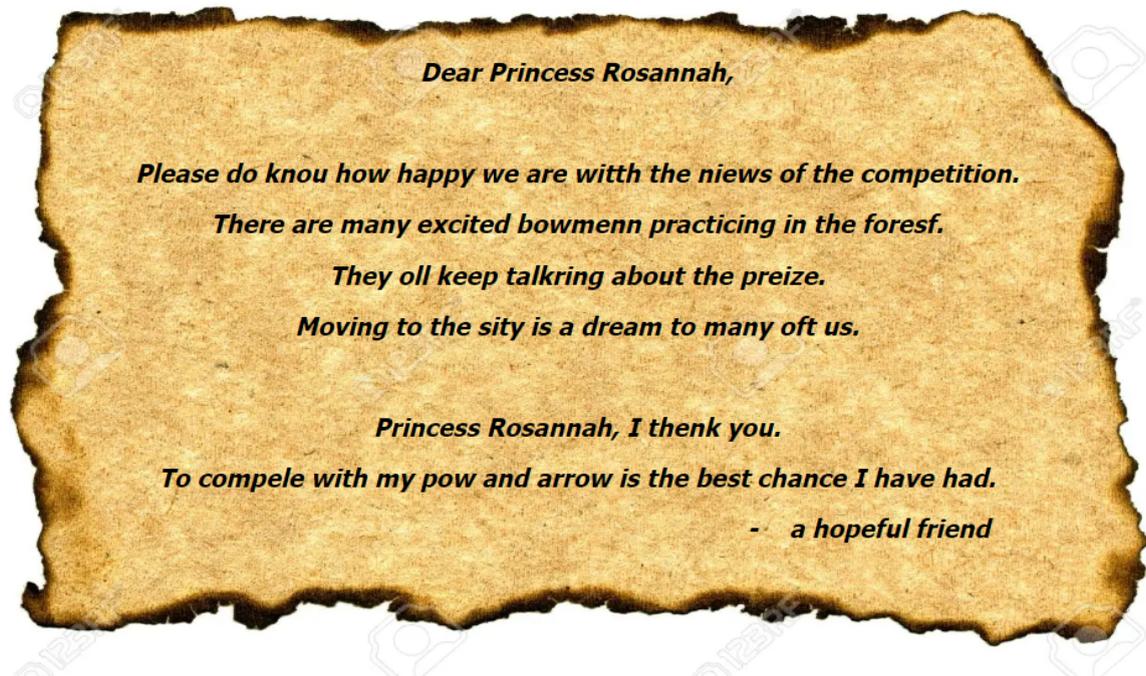
Figure 4. Here is the second task, focused on locating spelling mistakes. The students were presented this in an A4 format.

Google Forms has the functionality of separating content into as many independent sections as needed. This function allows for programming the guide to respond to the tasks in various ways, such as providing clues and making the students aware of information they can review to help them. This programmed response, in which the students were forwarded to a specific section in the guide if a specific answer was selected, was used in two of the tasks in order to observe the students' interaction with it as well as their experience.

The second task was one of the tasks that had programmed responses in the digital guide. The students had to select the correct number of mistakes, presented with five options: "13", "14", "15" "16" and "17". If the students selected the answers "13" or "14", they would be redirected to a section that would state that they had not found all the mistakes quite yet. They would also be provided with a hint regarding the mistake in the proper name. In the cases where the students selected the options of "16" or "17" they were redirected to a section that informed them that they had found mistakes in places where there were none. The

correct answer for the task is 15, which would then send the students to the next part of the digital guide. After successfully completing the task, the correct solution was provided for the students to examine. This gave the students the opportunity to evaluate their work and discuss the mistakes they noticed or missed - they could have the correct amount of mistakes, yet the placement could have been incorrect.

Upon completion of the task in the guide, the students saw the correct solution that highlighted the incorrect spelling. The letters spelled a message related to the story in order to continue to build suspense. The guide also told the students that they may now open a section of the provided physical materials, an envelope marked with a symbol of a bird. That envelope contained a note with an image of a red feather, which would get mentioned in the story later.
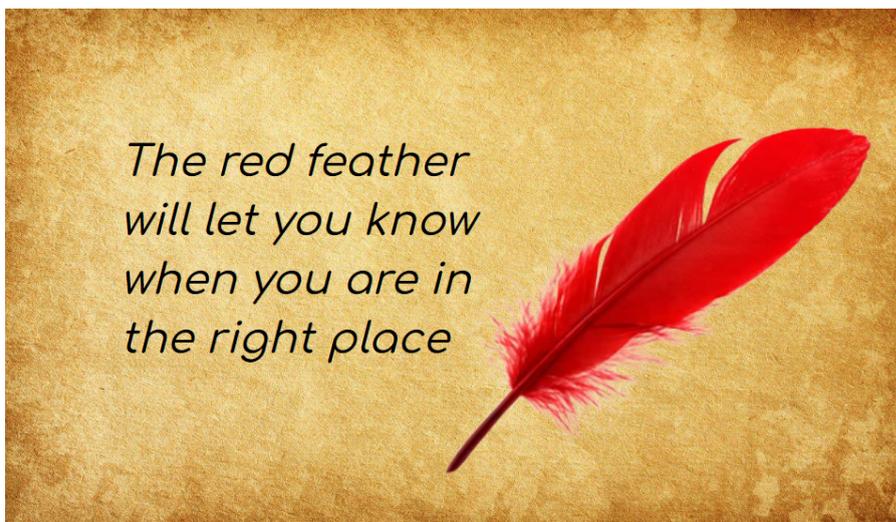
Figure 5: The letter which the students found within the bird envelope.

Following this, the guide provided the students with yet another clue. It mentioned a topic that was recently discussed in their history class, suggesting that the next clue's location will be in their history books.

The third task aimed to develop the students' punctuation and their understanding of sentence structure skills by focusing on sentence separation in a story related text. The text was written without any punctuation and consisted of several words from target vocabulary. It was revised in order to make the text's wording more coherent with the story, as well as

providing an opportunity to incorporate more target vocabulary. The students were asked to separate the sentences within the text and count the number of sentences they had discovered. This number had to be correctly selected in the digital guide in order to proceed. The digital guide was designed to guide the students if they had counted too many or too few sentences in their answer.
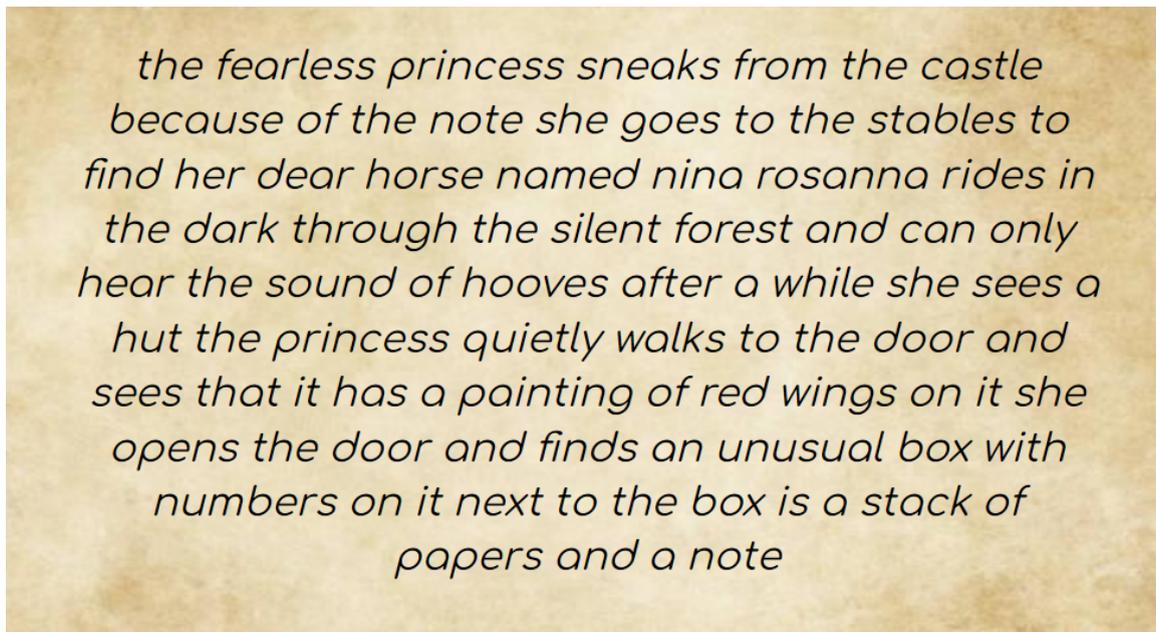
Figure 6: The image presents the third task, focusing on punctuation. It was presented to the students in an A4 paper format.

The other task that utilized the sectioning function mentioned earlier was the third task, focused on punctuation. The guide presented the students with six choices: "4", "5", "6", "7", "8" and "9" and asked for the correct amount of sentences in the task. Upon choosing the correct alternative, it being "7", the students were forwarded to the next section of the guide. In the cases where the students chose alternatives of smaller values, they were redirected to a section stating that they were still missing some sentences. In the cases where students selected values larger than "7", the guide presented them with a section stating that they had counted too many sentences in the text presented to them. This task provided no review in the digital guide.

Although this function presents flexibility, it also provides several challenges. In order to redirect the students based on their answers in the digital guide, a selection of answers has to be present in the task. This does create a situation in which the students could click through

all the possible answers in order to advance in the guide, completely disregarding the task itself. Furthermore, if the students did attempt to solve the task presented to them, but their answer did not correlate with any of the possible answers presented by the guide, they might opt for clicking through the options in the guide in defeat, instead of reviewing their work.

Upon completion of the third task, students were shown a small continuation of the story in the digital guide. This gradually led them to discover a simple riddle for the last scavenger hunt, which led them to acquiring the final task.

The fourth task was designed to focus on spelling target vocabulary based on jumbled sets of letters. The students were familiar with a similar task format, thus heightening the chance for success. This task underwent several edits based on reviews from colleagues. Some of the suggestions included adding letters to aid the students to solve the task, which was implemented. The task presented the groups with a series of jumbled letters and contained an example which explained to the students how they should solve it. In order to scaffold the students, the task included letters with images corresponding to the two-word phrases they needed to decipher (Appendix 5.5). These letters could be found in the envelope marked with a scroll. The task was designed to be challenging, and the students were encouraged to review the other texts that they had worked with in the other tasks to locate the words they had encountered, which would be key in solving this task

The pink letters on the task provided a keyword upon completion of the task, which had to be input into the guide in order to progress further into the story. The correct input was the word "wand", and any other word would prompt the students to try again, by presenting the students with the following text written in red "Try again! You should have a 4 letter word starting with w."

Rearrange the letters into words. The pink letters will reveal the keyword.	
Example: BWO NAD RWARO	BOW AND ARROW
EILV AWRDZI	_ _ _ _ ▪_ _ _ _ _
SACT A LPESL	_▪_ _ _ _ _ _ _ _
AKYRCE OGNWA	_ _ _ _ _ _ _ _ _ _▪_
LIAEFD ETBUD	_ _ _ _ _ _ ▪_ _ _ _
The keyword is: _ _ _ _	

Figure 7: The image above shows the fourth task, focused on spelling. The students were presented this task in an A3 format. There were also additional letters added in order to scaffold the students.

The length of a lesson was estimated to be approximately 90 minutes.

3.10 Review of the first phase

The review of the first phase in preparation of the second phase consisted of evaluating the student feedback from the interviews and the teacher observations, considering the tasks which were identified as the most and the least successful.

Student feedback was gathered through group interviews conducted in Norwegian immediately after the completion of the first phase lesson. Each group was asked a series of questions which focused on their experience of the lesson, which are presented below:

1. Did you enjoy the tasks? Which and why?
2. Did you struggle with any of the tasks? Which and why?
3. What do you think about a lesson like this? Why?

4. How was the Google Forms guide?
5. Other questions and comments

The teacher-researcher took short physical notes in order to capture all responses. These notes were using keywords and some comments which were specific were written down in full sentences. The interviews were conducted in Norwegian in order to gain a bigger scope of feedback, as the students are more confident in speaking Norwegian than English, thus ensuring that the feedback was not impacted by a language barrier.

The other teacher that was present shared their observations with the teacher-researcher, such as what they noticed about the lesson functioning well or eventual issues that they observed. Their observations were also written down in a notebook by the researcher, utilizing a combination of keywords and short phrases. The teacher-researcher combined these notes with their own personal observations made during the execution of the first phase. Thus, it was possible to conclude which improvements could be made to the second phase, as well as implement any suggestions that would be fitting to the second lesson.

Thematic analysis is a qualitative analysis technique that was used to analyze the notes collected from the student interviews and teacher observations (Braun & Clarke, 2006). After collecting data from the student interviews and the teacher observations, the notes were analyzed and sorted using thematic analysis. The notes were carefully read and sorted into categories based on the topics discussed in the interviews and observations. These categories were not predetermined, and emerged from reviewing the data. The categories were then analyzed to identify patterns and recurring themes across the data. Feedback that was repeated across a minimum of two student interviews and teacher observations was identified and highlighted for further analysis. These common themes were synthesized to provide an overview of the feedback, which was then used to determine improvements to be made to the second phase. The synthesized data can be viewed in the results chapter below. The flexible approach of thematic analysis allows for a variety of epistemologies and research questions to be addressed (Braun & Clarke, 2006).

3.11 The Second Phase

The second phase occurred in the same class and the same participants as in the first phase. The lesson was approximately 60 minutes according to prior observation.. The students were informed that they would be assigned in slightly edited groups. The groups were changed because some groups' dynamics observed in the first phase were not optimal.

During the planning of the second phase, the story was created first, contrary to the first phase. This change simplified the design process of the story severely, compared to the first phase, providing an opportunity to properly flesh out the details of the story, therefore making it more cohesive. At the same time, the amount of story related text increased remarkably compared to the previous lesson. After the story was initially defined, it was then separated into four parts, as a placeholder for the tasks that would be created. This was done in order to divide the amount of text evenly between each segment including tasks. Considering this, as well as the increased amount of text, it was decided that the text would be read aloud for the class at each segment and translated in places it was necessary. The tasks had to be created based on where the separations were made in the story.

At the start of the lesson, the students were reminded about the rules regarding the lesson and got an opportunity to find their groups and get seated. The groups were handed out the common area mat, which had an envelope, which had a symbol of a scarf on it, added on top of it using blu tack. It also contained a section called "The Attic", which the students would be told to access by the digital guide later on in the lesson. All of the physical materials which were used in this lesson can be viewed in appendix 6. The digital guide which was designed for this lesson can be viewed in appendix 4. The guide started with parts of the story that was presented last time, so that the students had an opportunity to remember. As in the previous lesson, parts of the story were translated when needed. It would eventually get to the exact point where the previous lesson ended, allowing a sense of cohesion between the lessons.

After the story had been repeated, the students were able to register their team on the digital guide and received instructions. The guide directed them to open one of the envelopes on the common area mat that had been presented to them at the beginning of the lesson. The first task focused on connecting pieces of sentences from various pieces presented to them.

The students were presented with a sentence scramble mat and a decoding sheet. Pieces of three sentences were divided into three envelopes and each sentence was composed of four parts, with some pieces planted there to make the task more challenging. Each piece had a symbol on the back, corresponding to a number value that was shown to the students on the cipher code sheet. The students needed to structure the three sentences and use the decoder to confirm that the sum of symbols on the back of each sentence piece equaled 20. During the first phase, the mathematics element was successfully implemented, which gave the confidence to implement a similar element again. In order to confirm that they had the correct sentences, the students needed to input the sentences into the digital guide in order to continue.
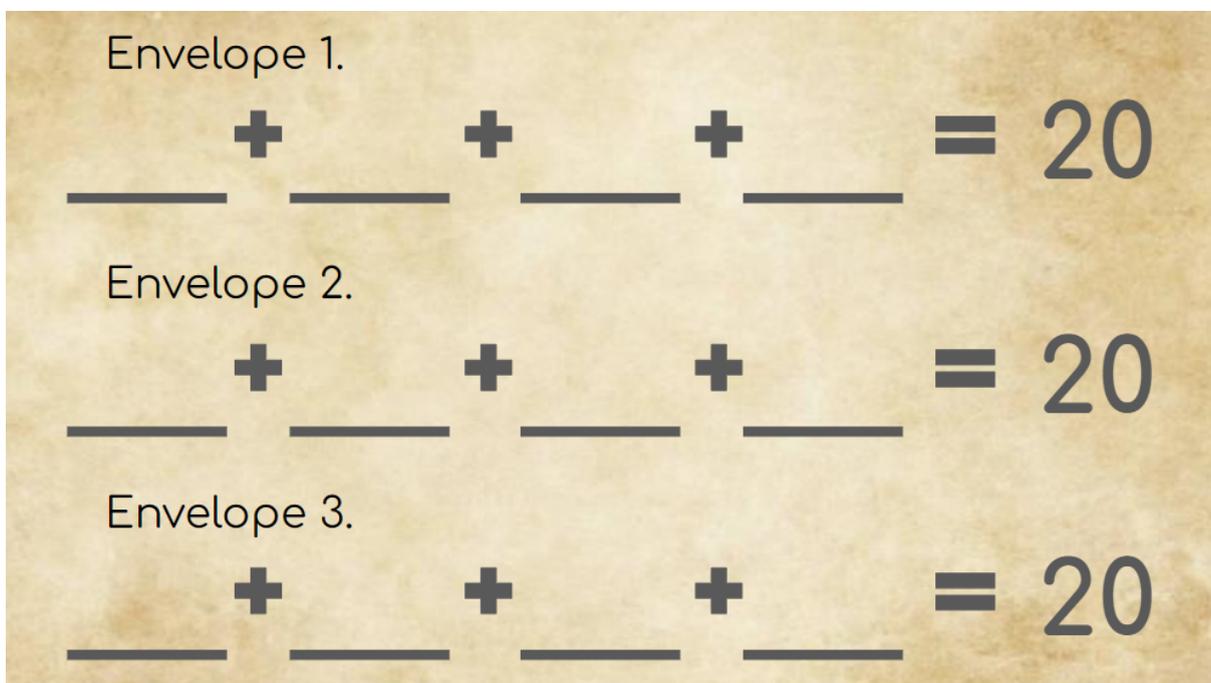
Figure 8: The sentence scramble mat which was part of the first task.

After this, the students were able to access a continuation for the story in the guide, revealing more and more elements which contributed to the immersion of the lesson. Quite a lot of time was set aside in order to flesh out the details regarding storytelling. This part of the story was read aloud for the class by the teacher and translated if necessary. To ensure that this happened simultaneously, the teacher announced that there was 5 minutes left of the first task prior to reading the story. The announcement happened when there were groups close to finishing the task. This element was integrated into the lesson during the lesson, due to a technical difficulty which occurred related to the programming of the first task in the digital

guide. It provided an opportunity to pace the lesson and review, which had a positive effect, thus, the teacher-researcher decided to keep the time-frame element in the second phase. The digital issue is presented and discussed later on in the results chapter. The teacher-researcher and other teachers were able to assist those groups that were still struggling with completing the task in order to finish it on time.

When the story had been read aloud, the students were to begin on the second task. The second task was created to be a simple logical puzzle that consisted of several directional rhymes and target vocabulary. The guide stated that they were then able to open yet another piece of the physical story map, named the "Attic". This part showed a bookshelf, filled with various colorful flasks on each shelf. The digital guide showed the same shelf, however without the flasks, and instead had words written on each of the shelves. The digital guide presented the students with a series of riddles correlating to each row of the bookshelf. The riddles revealed one of the colorful flasks, which corresponded to the letters in the words on each shelf. The students needed to solve the riddles and write the word that these letters revealed in the digital guide in order to proceed. This task had a time limit of 5 minutes, following the same procedure as the last task.

Figure 9: The physical part of the task, marked "The Attic" was the image above.

Upon completion of that task, the guide revealed a quite large part of the story, which was read aloud by the teacher for the students. A reasonable amount of time was spent on developing the elements of the story here as well, especially altering the language in order to make it more easily understood by the students. The story was also written on the digital guide, allowing the students to follow along as it was read aloud for the class. Once again, the text was translated when necessary by the teacher.

The directions to find the third task were revealed in the digital guide as a part of the story that was read aloud. The students had to look under the bookshelves in the classroom to find a large envelope with a variety of notes and pictures within. The design of the third task was largely affected by the positive feedback the fourth task received in the first phase. The aim of the task was reading comprehension alongside correct spelling. The task itself consisted of various letters that would have been written by the villain of the story and gave the students an opportunity to inspect his motive. The letters were designed to have several words missing, or better yet, scrambled. This design was created while keeping in mind the

feedback from the fourth task in the previous phase - the lack of context surrounding the words was what made the students stop and feel stuck. Therefore, the scrambled words were spread out in the letters that the students had to find. The students would therefore be able to employ the same strategies that they had learned in the first phase in order to solve this task successfully. The task focused on the students solving these word puzzles and counting the number of verbs amongst these scrambled words. This number needed to be input into the digital guide to proceed further. As with the first task, there was an announcement of a five-minute time limit as the teacher observed that the majority of the groups were close to finishing the task.

I had almost lost all hope of ever seeing my _ _ _ _ _ _ _ _ (TGHDEURA) again. Then, suddenly, I saw the book about Molag - Bal. It was hidden away on a _ _ _ _ _ (HLFES) in the library. It was as if I was meant to _ _ _ _ _ _ (NETICO) it. It was _ _ _ _ _ _ _ (YTECLXA) what I needed.
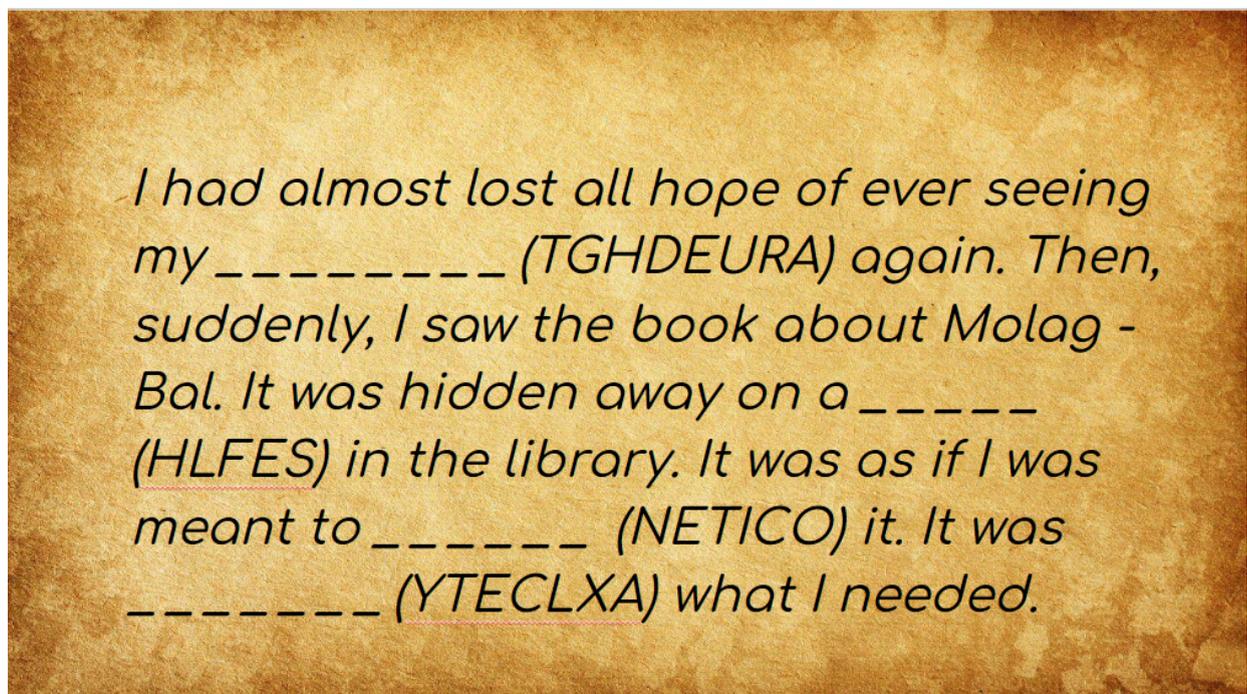
Figure 10: Here is an example of a letter which the students had to unscramble as a part of the third task.

As the correct number of verbs was input in the digital guide, the story unfolded further. After the students would discover the villain's motive, the tempo of the story was escalated to create and upkeep student engagement through suspense. This section was written to be short but engaging, easy for the students to comprehend. Once again, this was read aloud by the teacher and translated when necessary. The story was also available for the students to follow on the digital guide.

The final task of the story was created as the only fully digital puzzle as well as being the only task in which the students worked individually. The design of the task was created as a maze that the students would have to navigate in the digital guide. This was implemented using an image of the maze and the multiple selection format of questions available in Google Forms. The planning and implementation of this task into Google Forms took quite a bit of effort and was very time consuming. The map that the students had to navigate was shown to them on each step of the maze, which therefore meant that each step had to be marked and edited on the digital guide. In order to make the maze slightly more challenging, questions or riddles were added into the task. The maze required students to navigate through it step by step and challenged them with questions such as "Which of the following words means you have just enough of something?" and presented alternatives such as "eventually", "exactly" and "surely". The guide aided the students when navigating the maze and showed "Oops, that's the wrong way!" in the cases where students had chosen incorrectly. The students had to either select an answer from a multiple choice selection or type in an answer in order to continue. This was the only task that the students were able to perform individually and not in a group setting. This was planned in this manner in order to be able to give each student a feeling of mastery and completion, as well as a sense of accomplishment and ownership to the work they had completed thus far.

The original plan for the final task was to orchestrate some type of grammatical duel with the villain of the story, in the guise of spellwork and magic. This idea had to be altered to the maze due to time constraints as well as feeling the creative well run dry at this point.

Based on observations on how the students interacted with the various types of tasks in the digital guide, it was decided that the tasks would not utilize the multiple choice formatting for the tasks that required active problem solving. The first, second and third tasks all utilized the format of text entry in Google Forms. The final task, the maze, used the multiple choice formatting of the tasks for the purposes of navigation and some key questions within. The other key questions and riddles within utilized the format of text input.

Additionally, some logistical changes were considered in the planning process. During the lesson in the first phase, the students sat in their groups on the floor surrounding their materials mat. Some students provided feedback that with a lesson of this format, the floor seating was not optional and suggested that we group desks together in the second phase.

This feedback was implemented into the second phase and the desks will be placed together to accommodate for the group size in the classroom.

3.12 Ethical issues and considerations

3.12.1 NSD

Due to the fact that the participants of the study were under the legal age, a guardian's approval was required in order to participate in the study by taking part in interviews as well as being observed. The study also utilized a digital guide that was accessed by the students using their government provided Chromebooks. The fact that the students could potentially be identified through the IP-addresses in their Chromebooks required an application of the study to the NSD. The approval that was received from NSD can be viewed in appendix 1. The guardians were informed of the purpose of the study, as well as the ethical considerations mentioned above in letter format. The approval from the guardians was received as a signed slip in paper format. The letter that was provided to the guardians is available for viewing in appendix 2.

3.13 Limitations

The method presented for this study has several limitations, which must be acknowledged and discussed. Firstly, the potential bias from having a teacher-researcher who is familiar with the students might influence the data collection and analysis, thus possibly leading to unintentional confirmation bias, which may result in a subjective interpretation of the results.

Secondly, the gathered research data was collected using only qualitative methods, which might implicate the objectivity of the findings. Qualitative data is often subject to interpretation and may not be generalizable to other settings or populations.

Thirdly, the AR cycle which was used in this study consists of only two phases, which may limit the possible outcomes or provide a narrow window of observation. This limited

observation period may not be enough to detect changes in engagement or motivation over a longer period, such as an entire semester or an academic year.

Fourthly, the sample size is only one class, which may not be representative of the variety of EFL students. The inclusion of a control group in this study might have contributed in providing a more comprehensive understanding of the effects of gamification. Additionally, considering that the students that participated are in 6th grade, the findings might not be equally applicable to other age groups or environments.

Finally, the study was conducted using an educational ER lesson, which was utilized in order to implement gamified elements in an immersive setting. Due to the fact that the structure of this lesson in itself might have been a motivating factor for the students, it might have skewed the observations regarding student engagement related to gamification. Therefore, it is important to acknowledge that this study focuses on the implementation of gamification in the setting of an educational ER.

To summarize, while the study provides insights into the potential effects of gamification on student engagement and language learning, the limitations in its methodology must be noted. Future research is needed to determine whether these findings can be generalized.

3.14 Chapter summary

In this chapter, the methodology used in this study, which aimed to explore the effectiveness of an educational ER is presented in detail. The study utilized AR as its research method to investigate the impact of gamification on language learning, specifically on grammar and vocabulary. The chapter explains how the ER was structured with a combination of physical tasks supported by a digital element, being a Google Forms questionnaire implemented as a digital guide for the lessons. The chapter also presentes how the vocabulary sets were used as the foundation for task and story development in the ER lessons.

The planning process and the lesson design are also elaborated in this chapter. The objectives of the tasks implemented in the lessons are discussed in detail, along with how

they were incorporated to be in an ER structure. The evaluation process is described, which consisted of teacher observations and group student interviews in order to gather feedback regarding the lessons. Additionally, sections regarding limitations, ethical issues and considerations can be found in the chapter.

The chapter also discusses the role of the teacher-researcher, presenting the importance of coherence between researchers and practitioners. This highlighted the fact that the teacher-researcher's knowledge of the class and experience played a crucial role in ensuring the effectiveness of the ER design.

4. Results

4.1 Introduction

In this chapter, an overview of the results of the study is provided. The gathered data from group student interviews and teacher observations related to each ER lesson is presented and discussed. By analyzing the data, it is possible to obtain valuable insight into the effectiveness of each lesson, considering its structure and the effectiveness of the digital guide, therefore providing an opportunity to identify areas for improvement. The notes from student interviews and teacher observations can be viewed in appendices 8 and 9.

The student interviews from the first phase are presented first, providing direct feedback regarding weakness and strengths in the lesson. This information is relevant for review and adjustment of the design which was implemented in the second phase of the AR. Furthermore, this data served as a tool for gauging the level of student engagement during the lessons and their perception of the experience.

Next, the teacher observations from the first phase are presented in this chapter. These were able to provide information on various aspects of the lesson, such as group dynamics or errors which were not reported by the students. Through these observations, it is possible to achieve an understanding of student interaction between each other, as well as the tasks, throughout the lesson. Additionally, this provides a general overview of how the lessons were received by the class as a whole.

The review of the first phase is presented following this. The use of the digital guide and the physical materials is presented and discussed. Furthermore, by combining the findings from the student interviews and the teacher observations, it is possible to discuss how this information can be utilized in planning the design of the second phase. The changes which were made to the second ER lesson are explained, based on the feedback and the observations made during the first phase.

Following this, the student interviews from the second phase are presented. This data is relevant when evaluating whether the changes that were made were successful, as well as analyzing student engagement in the lesson impacted by the revisions due to feedback.

The teacher observations from the second phase are presented following this, providing data regarding student interaction and engagement. This data also generates insight on whether the implemented changes were successful while providing an overview of the scaffolding provided.

Lastly, the review of the second phase is presented. It discusses both the lesson as a whole, the effectiveness of the digital guide and how well the students interacted with the physical elements provided. This overview gives insight into how effective the implemented changes were, while also analyzing the success of the lesson.

4.2 Student interviews for the first phase

Prior to conducting the first phase, students were informed about the thesis's purpose and the interviews' relevance, allowing them to ask questions regarding the process. Group interviews with students were conducted immediately following the completion of the first phase. To ensure accurate and varied data collection, students were encouraged to provide honest responses, emphasizing the significance of their input to the thesis. The age of the students was taken into account, and their familiarity and comfort with the teacher-researcher enabled them to provide constructive feedback regarding the lesson. A total of five groups were interviewed. Each group was composed of approximately five students, and an open dialogue was encouraged to gather a diverse range of perspectives. This approach facilitated the collection of rich and varied data regarding the first phase of the study.

The first group reported that they found all the tasks enjoyable, but the final task was mentioned the most in a positive light amongst the students in this group. Additionally, they stated that they greatly enjoyed the element of physical activity, looking for clues in the classroom. When asked whether they struggled with any of the tasks, they mentioned the very first task, containing the puzzle revolving around the rules of indefinite articles. The group stated that they had spent quite a bit of time on overcoming it. Their general feedback regarding the lesson was that they thought it was an engaging and fun activity. They used adjectives such as "interesting", "fun" and "epic". When asked regarding their experience navigating the digital Google Forms guide, they stated that it was quite easy to navigate and

they experienced no issues. The last question was whether they had any other comments or questions regarding the lesson, in which one of the students stated the following:

"When you gave us those forms to sign (referring to the NSD forms), it said gamification so then I thought that we would be gaming, or at least doing something digital, cause that's what I think when I hear the word gaming in anything. But this was much more fun, so much more fun - it was cooler than Kool-Aid."

The second group stated that they enjoyed several tasks, especially the first task regarding indefinite articles and the last task, the word scramble. They also mentioned that the clues that were hidden in the classroom and the part where they had to look for them was something they all enjoyed. In regards to which tasks they struggled with the most, the group collectively mentioned the first task again. This task prompted them to look up the specific rules regarding the indefinite articles in their textbook, due to the fact that they could not come to an agreement in their discussion of the rule. The students stated that this discussion was most likely the reason as to why they mentioned this task as both the one they struggled the most with as well as the task they enjoyed the most. The general consensus regarding this lesson was that working together in a group setting in this manner was quite fun. As feedback, they noted that sitting on the floor was not optimal and they also commented on the occasional noise level in the classroom during the lesson. When asked regarding their experience using the digital guide, the group replied that the guide was easy to follow and navigate, but they had skipped past a clue in their excitement.

The third group agreed on the fact that they enjoyed the final task the most. One of the students in this group also mentioned the second task, the one containing spelling mistakes. Yet again, the element of physically looking for clues was mentioned as one of the most fun, memorable aspects of the lesson. This group reported that they struggled with the second task the most out of all the tasks. Their general feedback was that the lesson was fun and different, commenting that they felt it was a fun way to learn. When asked about their experience with the digital guide, they stated that they had no issues with it. Finally, when they were asked whether they had any other comments regarding the lesson, the students mentioned that they had issues dividing the workload required to solve the tasks amongst themselves, as well as talking over each other. One of the students also mentioned that sometimes it was difficult to

help in solving the puzzle, due to the task being "upside down" when the other students in the group worked on it.

The students in the fourth group mentioned all the tasks except the task that required punctuation, but mentioned the fourth task more than the others. They stated that this was due to the fact that it required them to think outside the box and use their problem solving skills. This group also mentioned that the physical clues were a fun addition to the lesson. When asked regarding tasks they might have struggled with, the students stated that they did not struggle with any tasks specifically. Their issue, however, was getting excited and not being careful enough to solve the puzzles efficiently due to not paying attention. As general feedback of the lesson, the group thought that it was a fun and new way to learn and asked whether this type of lesson could be implemented in other subjects, such as math or science. Their experience with the guide was positive, they stated that it was easy to follow.

The final, fifth group favored the fourth task as well as their favorite. Additionally, they mentioned that looking for clues and working together in a group was very enjoyable. When asked regarding which tasks they felt they might have struggled with, they yet again mentioned the fourth task. Their general commentary regarding the lesson was that they thought it was a fun, new way to learn. Furthermore, they noted that this type of lesson required them to stay focused in order to be able to complete the puzzle. Their feedback about the digital guide was that they felt it was very neat and tidy.

To summarize, the groups had good feedback regarding the logistics of the lesson and were able to be constructive in their commentary. The tasks they enjoyed the most were the first and the last task, as well as the addition of physically looking for clues in the classroom. It is also interesting to note that several of the groups mentioned the tasks they struggled with the most as the ones they ended up enjoying the most.

4.3 Teacher observations for the first phase

During the first phase, both the teacher-researcher and another teacher present made several observations regarding the dynamics of the lesson and how the students attempted to overcome the challenges presented to them.

The overall teacher feedback was that the lesson created several fruitful opportunities for discussion regarding the tasks in every group. Although the groups asked for help several times, the questions were formulated in order to aid the discussion in the groups.

The scavenger hunt elements were observed to be an exciting part of the lesson quite early on. Due to this, the groups were told by the teacher-researcher that only one person per group is allowed to go and look for the physical hints hidden in the classroom. This was well received by the students and, furthermore, unanimously and silently decided to share this joyful experience by taking turns in looking for the hidden elements of the story. The teachers observed this as an indication of how enjoyable the experience was for the students, considering they initiated and followed this rule by themselves with no need for instruction.

The observations regarding the first task were that the students asked several questions in order to facilitate an effective form of group discussion. Students asked questions such as "What was the definition for this rule again?" or "What was the rule - can you give us an example?". Some students even took initiative to ask whether they were allowed to find and open their textbook in order to find the correct solution to the task. The teachers were mostly asked questions regarding the rules about indefinite articles, in contrast to the few questions asked regarding the interdisciplinary mathematical part of the task.
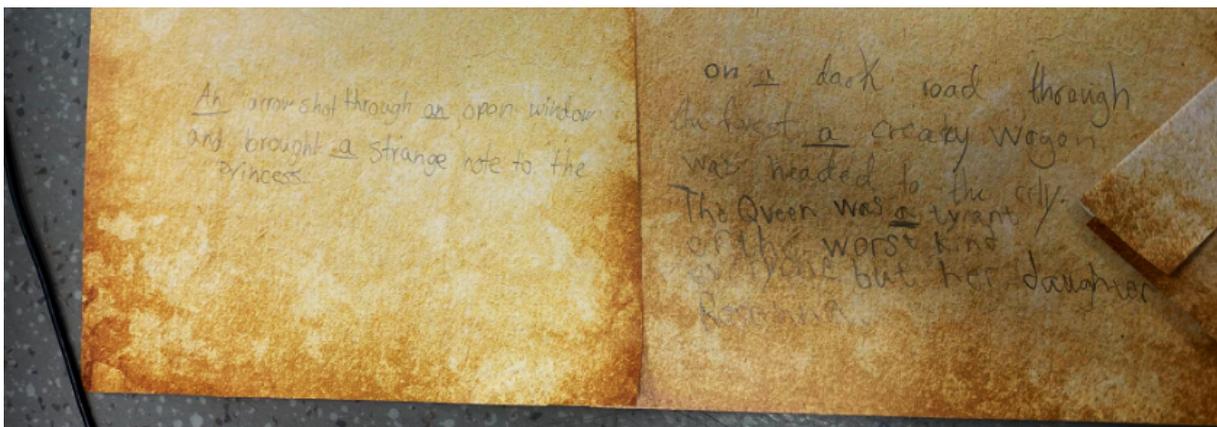
Image 1: The image provides a closeup of the notes taken by the students while solving the task regarding the indefinite articles.

The second task was also observed to create a good environment for students to discuss strategies and grammatical rules. Most importantly, the teachers observed that the students talked openly about spelling mistakes and implemented their own experience into the conversation. The students discussed how they would identify the incorrect spelling and encouraged the students in their group to engage with statements such as "It can be several of these, let's look over and see which ones it can be!". The formatting of the digital guide allowed the students to simply count the amount of mistakes they found in the text, which was beneficial. Even though some groups marked some mistakes in places where there were none, the reveal of the correct mistakes in the guide provided a great opportunity for the students to review. The groups took full advantage of this opportunity and created a positive atmosphere for review and discussion regarding the strategies they used. This observation is quite interesting - the students were not required to review their work or discuss it at all. However, due to the engagement and the positive atmosphere around the initial discussion about their strategies, they took initiative to review and discuss these findings as a group in order to improve their approach going forward. There were also some observations regarding the mistakes that the students missed or were uncertain about while attempting to solve this task. The most overlooked spelling mistakes were an incorrect spelling of a proper noun, which was the name of the main character in the story, and the word "bowman" spelled with two n's.

Image 2: The image above was taken during the second task of the first phase, containing several spelling mistakes. The students can be seen utilizing the markers provided to them on the laminated, physical tasks in order to highlight the words they suspect might be spelled incorrectly.

The third task, which focused on punctuation, was observed to be challenging for many students as the teachers received several questions regarding how the task was to be approached. The students thought it was challenging mostly due to uncertainty on whether they should use commas or periods. Several of the questions presented to the teachers were "There are several places you can put the periods" or "What if it's a comma? Is it commas here or periods?". Additionally, some teachers observed that the text formatting was a slight issue - some students found it difficult to separate and decode when it was all gathered in a block of text.

The fourth task, aimed at solving scrambled word problems, was observed as one that created a lot of engaged conversation among students. Several groups were observed using a method of elimination, crossing out letters on the physical task as they tried to find a solution. The students discussed their ideas continuously and received hints when they were stuck. Upon receiving hints, they often looked over the texts from the previous tasks in order to locate the correct spelling of the words they deduced would be the correct answer to the puzzle. Some groups struggled with understanding the instructions for this task, but understood after they received an explanation from the teacher. The teachers noted that one of the reasons this task might have been this engaging was due to the fact that the students were familiar with the task design and therefore did not need to implement any new and unfamiliar strategies in order to find the solution.

The digital guide also received feedback from the teachers present. The consensus was that the guide was generally easy to understand and navigate, and the students especially benefited from the opportunity to go back and examine the previous tasks. However, there were several observations made concerning the fact that several groups missed information that was placed in the headings of the digital guide, as it was written in a smaller font. Furthermore, some groups skipped ahead due to their eagerness, causing them to miss some instructional information regarding the tasks. It was also observed that the tasks that utilized the multiple choice formatting received less attention and generated less discussion amongst the students compared to the tasks that utilized the written answer formatting.

The groups utilized the physical materials efficiently, marking their suggestions for each other as it is viewed in Image 2. It was evident to see that the students were more focused and engaged when working with the physical materials, as the Chromebook was

utilized only for the guide thus being irrelevant when the groups worked with solving the tasks.
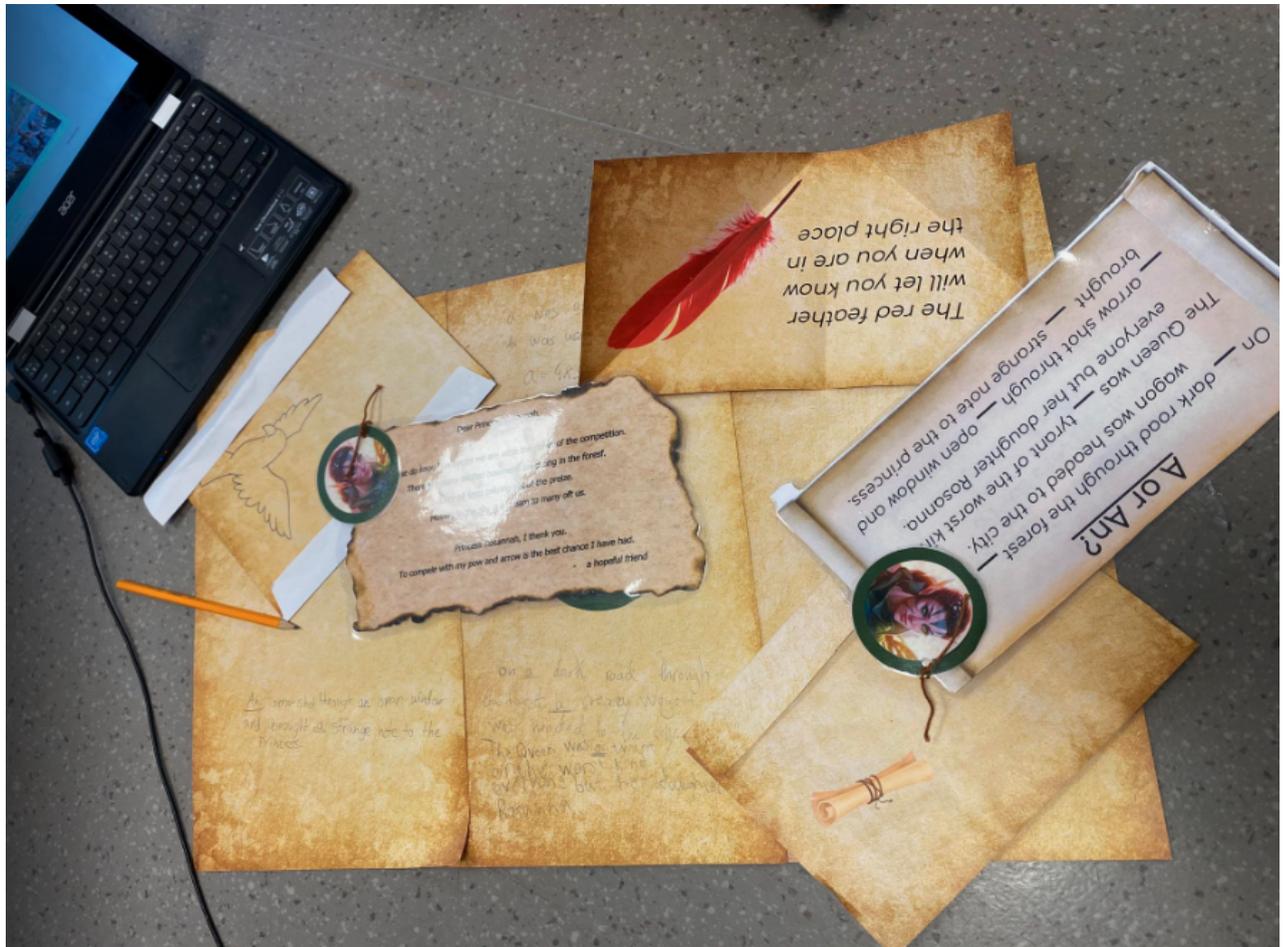
Image 3: The image above shows the common area mat, containing written notes in pencil for solving the task focusing on indefinite articles. The first task, the second task and the note with the feather is also present. It is interesting to note how the Chromebook with the digital guide is almost entirely set aside, whereas the common area mat is covered in the physical materials provided to the students, placed in various directions. This can be an indicator of how physical elements dominated the lesson, while the digital implementation was only accessed when they wanted to input their answers in order to advance.

4.4 Review and adjustments

After reviewing the feedback from the first phase, it was possible to come to some conclusions. The first task, featuring rules regarding indefinite articles, created a natural environment in which the students were able to discuss the rules and ascertain their theories

using their textbooks in a group setting. This environment was observed and mentioned by the teachers observing as well as the students themselves. The feedback regarding this task was positive among the students and it was mentioned several times in the interviews, even though it was the very first task they had to complete. The planning of this task was relatively simple - constructing sentences using the target words and selecting a grammatical rule to focus on. In conclusion, this is a task that was simple to design, needed little scaffolding, provided an environment for group discussion and was enjoyable for the students.

The second task was mainly focused on locating spelling mistakes in a text. After completing the task, the students were able to see the mistakes highlighted which revealed the hidden message. Many students commented positively regarding this opportunity to review, and noted how it opened up a discussion that talked openly about mistakes in the group, giving them an opportunity to reexamine their answer and learn collectively in a group setting. Some mistakes were placed in story related proper nouns which provided confusion; the issue was noticed too late in the planning process of the first phase and there was no opportunity to adjust it at this stage. The students mentioned this as well, which confirmed the initial suspicion that proper nouns would prove difficult to them in this specific puzzle. The mistake the students overlooked the most was the word bowman spelled with two n's, as follows "bowmann". This could be related to the fact that there are many words in Norwegian that have a similar structure and use a double consonant, such as nordmann, sidemann and brannmann. A few students did mention this task when asked whether there were any tasks they enjoyed. Overall, this task was quite simple to design and it gave the students an opportunity to review their work collectively.

The aim of the third task was to focus on punctuation. It received the least amount of feedback from the students. It was neither mentioned as one they enjoyed or struggled with. Although this task was simple to design, it provided little student engagement and interaction.

The aim of the final task was to work on decoding and spelling target vocabulary. One of the observations made by the teacher-researcher and the other teachers present observed that the phrase "failed debut" was quite challenging for the students. There was uncertainty present regarding this phrase initially in the planning process, however, it was decided to leave as is in order to observe how the students would respond to it. After the lesson, it was possible to observe that some phrases were too "abstract", more concrete word combinations

would be needed if implemented later on. When evaluating the feedback, several observations were noted. Teacher-researcher and the other teachers present observed that the students were using the method of elimination and discussing their ideas continuously throughout the task. This observation presented a positive group discussion, in which the students were able to collectively discuss the methods they could use in order to solve the problem. Looking at the student reviews, this task has overwhelmingly positive feedback from students compared to any other tasks. It is also mentioned in every group interview in a positive light. This could be due to the fact that these students have experience with and enjoy scrambled words. However, this could also be due to the fact that this was the last task that the groups worked with prior to the group interviews. Based on the great positive feedback from the students, combined with the fact that this task was quite simple in design a similar task would have definitely been a smart choice to implement in the second phase. The students were familiar with the design, enjoyed it and it highlighted the target vocabulary. Furthermore, it can easily be used as a way to implement the text used in the other tasks as well, highlighting the student's awareness of needing to read closely.

4.4.1 Review of the digital guide

The digital guide was one of the elements that took a while to design when planning the first phase. The two different layouts of the tasks were used in order to get an overview of how students would interact with them, and whether their approach would vary. It is interesting to notice that the two tasks that used the multiple choice format in the digital guide, were the tasks that received the least attention from the students during the interviews. It might suggest that due to the choices already being presented for them, parts of the critical thinking approaches that they demonstrated in other tasks were not utilized to the fullest extent. The general feedback from the students regarding the guide was that it was easy to understand and navigate. Some teacher observations showed that the groups seemed to miss information that was written on some of the headings in the digital guide. This issue was already noted in the planning phase, thus being able to move as much of relevant information away as possible. In their excitement, several groups rushed past information that could help them. Some groups mention this as well - "We ended up skipping past information that could help us because we were so eager."

Overall, the digital guide performed well considering its intended function. Although it took some time to design and develop, the students were able to utilize its functions and the information within quite well. As a note regarding planning the digital guide for the second phase, the section headings will not contain any information that the students need to solve the tasks.

4.4.2 Review of the physical materials

The physical materials needed for this lesson were utilized quite efficiently by the students. The groups used the common area mats they were provided as a gathering point, as well as a space for notetaking in order to collectively solve the puzzles. The teachers observed that the students were excited due to the design of the materials, as they had a visual relation to the story, thus enhancing the immersive feeling that was desired. Due to the tasks being in physical format and hidden around the classroom, an activity similar to a scavenger hunt was created. It operated through providing hints implemented into the digital guide.

The students greatly enjoyed the scavenger hunt elements, physically looking for clues. All of the groups mentioned this element in a positive light, often as one of the parts they enjoyed the most. The teacher-researcher and the other teachers present observed that the students noticed that everyone enjoyed physically looking for the tasks and therefore took responsibility in taking turns, so that most of the students in each group could get an opportunity to hunt for physical clues. However, as a result of having one physical, written task per group, the students read the tasks for each other, therefore providing an opportunity to listen to each other read English. This was such a positive experience for them, that it almost worked too well - several groups mention students reading different tasks out loud at the same time and therefore struggling to hear each other. This will be mentioned in the rules and structure section of the digital guide for the second phase.

4.5 Student interviews after the second phase

The student interviews were conducted immediately after the second phase was finished. The interviews were conducted in the groups which were assigned to the students during the lesson.

The first group stated that they enjoyed all the tasks quite a lot. They stated that the first task, containing various parts of sentences, required them to carefully think over the cohesion of sentences and whether those sentences made sense when put together. The second task was really enjoyable due to the layered puzzle mechanic that they encountered. The students stated that they really enjoyed that a part of the task was digital, while a different part was physical - it made them work together as a group. The third task was described by the group to be entertaining and engaging, and the students mentioned that the difficulty of it made it just challenging enough. The fourth task, the maze, was really enjoyable because of all of the multiple choice options, it made the digital guide feel like a real digital game.

When asked whether they struggled with any of the tasks, the students mentioned that they struggled a bit with the third task, but it made it all the more fun to figure out. The second task was mentioned as well, but in a different way - the students felt that it was not challenging enough, as they were able to solve it really quickly. Their general feedback regarding the lesson was that it was very enjoyable, especially due to the way that it felt different from what is usually done. They also mentioned how they were looking forward to finding out what happened in the story, a continuation of the previous lesson.The feedback regarding the digital guide was that it was fine, with the exception of the issue regarding the first task. Everything worked fine after that was resolved. The students also mentioned that there was quite a lot of text in this digital guide, compared to the previous one, which worried them at first, but they were relieved to hear that it would be read aloud so they could follow along. The only other comment they had was that they wished there were more scavenger hunt elements, as in the previous lesson.

The students from the second group all collectively agreed that the fourth task was the most enjoyable and memorable. Additionally, they mentioned that the second task was quite fun, due to the fact that it contained riddles. When asked whether they felt that they struggled with any of the tasks, this group had quite a lot of valuable feedback. They felt that although they enjoyed the second task quite a lot, it ended up being a bit too easy to solve and they finished it much faster than the other tasks. The group really enjoyed solving the word scrambles in the third task, but some struggled with remembering word classes, which was what the digital guide required of them. Their feedback regarding the maze was that they

would have loved it if it was even larger and more difficult, had more tasks within and had hidden tunnels within. While answering the question regarding their thoughts about the lesson, they stated that they thoroughly enjoyed the lesson and they mentioned that listening to the story and seeing the images in the digital guide was their highlight. The feedback regarding the digital guide was that it was simple to navigate and understand, despite the technical issue that was encountered in the first task. When inquired whether they had any other feedback, the group voiced that they really enjoyed and appreciated that the third task had several different letters within it, which meant they could divide the work between them. They also said that they would have liked to have more scavenger hunt elements like last time.

During the interview with the third group, they declared that the fourth task was their absolute favorite, especially due to the variety of the small puzzles within the maze. They also mentioned that even though it might have been frustrating then and there, the implemented dead ends in the maze made it more fun. The third task, the letters, was also mentioned by several students in this group. They said that although it was challenging, it was also really fun to solve. An additional note was that this was extra enjoyable due to the fact that this task had a scavenger hunt element. Upon being asked whether they struggled with any tasks, the third task was mentioned again. The students discussed that they were struggling with solving the word puzzles, but looking more closely at the context surrounding the scrambled words helped a lot in their deduction. The overall feedback regarding the lesson was that they thought it was quite enjoyable. They mentioned that they thought the story was very exciting and it was really interesting to learn more about the characters in the story and how their development as the story progressed. When asked regarding their feedback on the digital guide, they stated that they only had an issue with the first task - everything besides that was easy to navigate and understand. The additional commentary that this group had was regarding a strategy they discovered while working on the third task. They stated that it greatly helped when they got a hint about crossing out letters as they were trying to solve the word puzzles. They felt stuck for a short while, so this easily executable suggestion was able to motivate them to keep trying.

The fourth group reported that they enjoyed the maze the most, stating that it was like a real, digital game and that the variety of small puzzles within the maze made it entertaining. They also enjoyed the third task, where each member had their own letter to solve, which

allowed for individual problem-solving as well as gave grounds for group discussion regarding strategies. The group struggled with the first task due to a mistake in the guide, causing confusion and leaving them stuck for a while. However, they overcame this challenge by asking for help from the teachers present, thus being able to continue onward. For the third task, they initially found it difficult, but once they were suggested to start crossing out letters on a paper they were able to make progress. Regarding the lesson in its entirety, the fourth group thought it was really fun and enjoyed the story-telling aspect of the lesson, finding it immersive and engaging. The images provided in the lesson also helped them visualize the story. In terms of the digital guide, they found it okay, but felt that the mistake in the first task caused them to struggle unnecessarily. As for other comments, the group expressed a desire for more scavenger hunt elements like those in the previous lesson.

During the interview with the fifth group, they mentioned that they enjoyed all the tasks, but the maze was a clear favorite among all students in the group. They also brought up the third task, which involved solving word scrambles, stating that it was challenging, but entertaining. When asked if they struggled with any tasks, the third task was mentioned again. They discussed that they had trouble with recalling rules regarding word classes in the task, therefore needing to discuss it after they had finished the word scrambles. There was confusion during the first task, which made the discussion temporarily halt. The group agreed overall that the first task was the most challenging one out of the ones they encountered in the lesson. Reflecting on the lesson as a whole, the group concluded that it was really entertaining and different. They appreciated there being various parts of the lesson, portions of time where they had to be very engaged in order to solve the tasks, as well as time reserved to sit and listen to the story. When asked about the digital guide, they stated that it was fine overall, except for the first task, which caused some confusion.

4.6 Teacher observations after the second phase

During the second phase, both the teacher-researcher and the primary teacher of the class were present and took part in the observation process as well as aiding the students when needed.

It was observed that the students were motivated to learn more about the story in this lesson, as the previous lesson from the first phase did not take part too long ago. The students seemed to remember several parts of the story, but were happy to hear that there would be a short repeat of what happened in the previous lesson. This short review consisted of the teacher-researcher reading some sections of the adventure aloud to the class, which allowed the students to ask questions. The implementation of this recollection had a positive effect on the class, as it assured the participants that they were all on the same page. The parts that were read aloud and translated helped them get started and remember the vocabulary. This also gave the opportunity for the students to discuss the story in a whole class setting, which they seemed to enjoy. Once the students understood what was happening, they became very motivated and eagerly awaited to begin solving the tasks.

Throughout the tasks, several groups asked questions regarding the tasks and strategies they might employ to the teachers present. The first task of the story required quite a bit of scaffolding, due in part to the technical difficulty that occurred in the digital guide related to this task. There had apparently been an issue regarding the programming of hints in this part of the digital guide, which made the correct answer appear incorrect and therefore refused the students to proceed to the next task. Upon discovering this, the teacher-researcher immediately accessed the digital guide for this lesson and disabled the mandatory part of this task, allowing the students to proceed. This issue was discovered approximately five minutes after the students were instructed to begin solving the task, and it was solved within two minutes of this. The groups were all instructed to reload the digital guide in order to be able to proceed. None of the students skipped the task, even after the mandatory function was disabled. Furthermore, once the digital issue was solved, the groups proceeded to finish the task with the same engagement and motivation as before. This task also required scaffolding in form of explaining the task design, due to it having several physical parts, which created logistical confusion in some groups.

Due to the issues with the digital guide that occurred in the first task, the teacher-researcher made a swift decision to collectively review the answers as the time limit for the completion of the task was announced. This implementation was originally in order to ensure that the students had completed the task as intended and could discuss among themselves in the cases where they did not. The students had a positive reaction to this opportunity to review their work, and this routine was therefore continued throughout the

second and the third task in the lesson. The teachers observed no decline in student engagement, on the contrary, the students seemed to be motivated and discussing with more vigor than without the opportunity to collectively review.

Interestingly, the groups seemed to have ended up selecting a leader to guide them through the tasks, suggest roles and have an overview of the physical materials. This unofficial election happened somewhere during the first task and appeared to remain throughout the entire lesson.

The main observation regarding the student engagement surrounding the second task was that it went by faster than anticipated by the teacher-researcher. Simultaneously, it was possible to note that the students divided the various sections of this task amongst themselves and were therefore able to efficiently work together. This distribution of responsibility occurred swiftly and naturally, without any conflict in the groups.

The third task was the one that the majority greatly enjoyed, according to the teacher's observations. The engagement was very good, which might have been due to the fact that this task has several parts that had to be completed at approximately the same time. The context surrounding the scrambled vocabulary was helpful to several groups, but not all. The students attempted to solve the puzzles within their groups, and if they felt uncertain, they asked the teachers questions such as "Can you help me figure out how to do it?". This allowed for several discussions regarding the strategies the students could employ and created an atmosphere where they felt comfortable asking each other for help or suggestions. The teachers concluded that creating several physical materials available for the task was a great choice, which therefore made it possible to divide the workload and generate efficient conversation.

Finally, the fourth task was very visibly a favorite amongst the students. Up until this point, all of the tasks required group collaboration and were focused on generating a healthy environment for discussion. The opportunity to work individually on this digital element of the lesson was very exciting to the students and was received extremely well. At the beginning of the task, several students asked questions regarding the directions within the maze and its navigation. Not long after, most of the class had figured out the mechanics of the maze simply by using trial and error strategies. The maze contained several riddles, which the

students needed to solve. Most of these riddles were solved without much issue by the majority of the class, with the exception of the riddle about the shadow. All of the students were able to solve it eventually, thanks to some form of scaffolding. The teachers discussed that the reason as to why so many students were stumped on the riddles could be due to the fact that they were much too focused on getting through the maze and therefore lost some of their focus when asked to solve the riddles.

4.7 Review of second phase

The feedback from the student interviews and the teacher observations provided data from different viewpoints. The first task provided the researcher with a lot of information, due to the technical issue that occurred with the digital guide, as well as being in a format that the students were not too used to. The technical issue was due to incorrect programming of the task, which caused the "incorrect input" hint to appear below the input line even when the correct answer was entered. This affected two important aspects of the lesson: the first being that the digital guide did not allow the groups to advance due to it registering a mistake. This issue was solved by removing the mandatory requirement within this section of the guide, therefore allowing the students to proceed. The second aspect that was affected was the fact that my students started to doubt themselves. After all, the program kept insisting they were incorrect, even though they had attempted several strategies in order to solve the puzzle. Luckily, the issue was discovered quickly, therefore allowing the teachers present to reassure the groups that they were, in fact, thinking correctly. The teacher-researcher gave an announcement to all the students regarding the issue, stating that the mistake that occurred was their fault and that it was now resolved. This statement, as well as the teachers' familiarity with the class, provided the groups with an opportunity to continue on with the lesson with a positive mindset. The students were able to efficiently proceed with solving the task, creating engaging discussions surrounding strategies they could implement. The groups had some questions regarding the manner in which they were supposed to begin, due to some not understanding the instruction note all too well. The design process of this task was slightly challenging, in large part due to the researcher having little experience in planning tasks of this format. Overall, the task in itself was suitable and could definitely be implemented if an ER lesson would be planned again, with some slight adjustments.

The most important observed notes regarding the second task were that it demanded a great deal of visual planning, compared to how quickly the students were able to solve it. On the other hand, students were really engaged when working with this task, instinctively delegating objectives to each other within the group. However, the fact that the students were able to solve this puzzle swiftly worked in the favor of upkeep of the timeframe for this lesson, considering that the previous task did cause delays due to technical issues. To summarize, this type of task could absolutely be implemented again in an ER lesson, the only change would be to simplify the visual design of it due to time management in the planning process.

The third task was the only task that retained the scavenger hunt element, which was heavily implemented in the previous lesson. It was a good decision to add this physical component, due to it generating excitement related to the tasks amongst the students. Furthermore, the timing of it was appreciated - the scavenger hunt detail took place in the middle of the set timeframe and could therefore positively affect the student engagement. The task itself, as earlier stated, took reference in the fourth task of the first phase. The feedback from the students regarding the word scrambles was overwhelmingly positive, the biggest critique being the lack of context which was taken into consideration in the design process. The additional comments regarding issues with there being only one physical task, causing people to talk over each other was also noted, therefore creating several pages that the students in a group could work on simultaneously. The students were observed as enjoying being presented with several options of the same task, providing them with an opportunity to work on a different part of the task if they ever felt stuck. It did not eliminate the possibility for collaborative work either - several students were observed working together in pairs on one part of the task. The design of this task was not a significant challenge and did not require significant time and or energy to create. Overall, this task would definitely be implemented if an ER lesson would be designed again.

Finally, the fourth task, which was positively mentioned in every group interview, provided the students with an opportunity to work individually and further immerse themselves into the story. The task was originally planned to be solved as a group, but the design process revealed that facilitating that would have been too demanding. The maze in the digital guide was undoubtedly the element that was the most demanding timewise, during the planning process. Although it was a task that the entire class enjoyed to such an extent, it

would be unrealistic to attempt to create such a task in a different ER. It took approximately two days to fully implement all of the parts of this maze into Google Forms, even needing to ask a colleague for help.

4.7.1 Review of the digital guide

The planning of the digital guide for the second phase took significantly longer, due to the fact that the fourth task would be entirely digital. The maze was the only task that utilized the multiple choice layout, in order to present the students with a continuous selection of directions. All other task related input was structured using the short answer format, given the observation that the students interacted better with the tasks in the previous lesson. This was effective, as the students were observed to actively engage in discussion in each task.

The digital issue that occurred related to the first task was able to be solved quickly due to the knowledge that the researcher was able to acquire after working closely with Google Forms when designing the guide. The issue was that the digital guide continuously presented an error message when the correct input was entered, therefore not letting students advance as well as creating confusion. This was solved by disabling the mandatory requirement of the task and informing students of the fact that they had to reload the digital guide in order for the change to be put into effect. Although some frustration was present, the technical difficulty was resolved quickly and therefore minimized the impact that it could have had on student engagement and motivation.

4.7.2 Review of the physical materials

The physical materials that were provided to the groups were all utilized quite efficiently this time as well. Although the scavenger hunt element was reduced compared to the last time, the students still enjoyed opening the marked envelopes and the hidden sections of the common area mat. The instructions of the first task should have been made more visible and apparent, in order to make sure that the students understood what had to be done with crystal clarity. The fact that the third task provided the groups with several parts of the task was based on student feedback and functioned very well.

4.8 Chapter summary

This chapter provided an overview of the findings from two phases of the AR, which were performed in an manner of an educational ER. The tasks implemented in the lessons focused on the students' grammar, spelling, punctuation, and vocabulary skills. In the first phase, four tasks were designed to teach students the rules of indefinite articles, locate spelling mistakes, focus on punctuation, and work on decoding and spelling target vocabulary. While the first and last tasks were well received by the students, the second task was enjoyable but had technical issues, and the third task received little engagement from the students.

The digital guide accompanying the lesson was well-designed but the multiple-choice format tasks had the least impact. The tasks that utilized this formatting were the least well-received and generated less discussion than the tasks which utilized the short answer format. The physical materials used in the lesson were utilized well by the students, with the common area mats acting as a gathering point and a space for note taking.

In the second phase, the (ER) consisting of four tasks, a continuation of the story and a new digital guide was designed. The first task had technical issues with the digital guide, slightly affecting the lesson but was quickly resolved. The second task required visual planning and was solved quickly by students. They were engaged and delegated objectives to each other within the group. The task was suitable but needed a simpler visual design to save time in the planning process. The third task contained a scavenger hunt element which generated excitement and was well-received. The task itself contained scrambled word puzzles which the student needed to solve in order to advance. Students enjoyed the task and appreciated having several sections of the same task, allowing them to work individually or collaboratively. The design of the task was not a significant challenge and was well received by students.The fourth task was enjoyed by every group and provided students with an opportunity to work individually and further immerse themselves in the story. The maze was the most demanding timewise, taking approximately two days to design and implement all parts into Google Forms. Although the entire class enjoyed the task, it would be unrealistic to attempt to create such a task in a different ER.

5. Discussion

5.1 Introduction

The aim of the study was to explore the effectiveness of implementing gamification through the use of ER in an EFL Norwegian classroom, specifically focusing on how it affected student engagement while working with tasks related to grammar and vocabulary. In this chapter, the findings will be discussed in relation to the main research question.

5.2 Comparing and discussing the results

This section examines the implications of gamification as an educational tool for teaching grammar and vocabulary, with a focus on student motivation. In order to do this, several topics related to this will be explored, including student engagement, task design and student interaction.

5.2.1 Student Engagement and Motivation

As discussed in the theory chapter, motivation is a vital component of language learning (Dörnyei & Ushioda, 2011), and gamification has the potential to enhance this by creating an engaging and effective learning environment (Dicheva et. al, 2015). However, motivation is a challenging concept to measure precisely and in a unified manner. In this study, student engagement was used as a collective indicator regarding motivation, based on students' self-reported engagement and interest, as well as group activity as observed by the teachers present in the lessons.

Student engagement was used as an indicator of motivation in large part due to the lesson design. In order to exclude parameters which would influence motivation through extrinsic factors, no points or ranking systems were implemented in the lessons. The tasks which were presented in the lessons were incorporated and designed in a manner which appealed to learners' intrinsic motivation, with focus on learning autonomy and immersion, in order to create an engaging and effective learning environment.

Firstly, I will examine the use of tasks and their design, focusing on the impact they had on student engagement. There were several tasks or other elements in the lessons which generated student engagement. The tasks that involved *physical activity* and looking for clues in the classroom were able to generate a considerable amount of enthusiasm, which was both stated by the students and observed by the teachers. The inclusion of physical tasks and the fact that all students were able to participate in them may have been a factor when considering their success. In fact, it was observed that tasks where everyone was able to participate seemed to create a stronger sense of student engagement than other tasks which relied more heavily on linguistic competence. This highlights the importance of creating tasks which are inclusive and accessible to all students, regardless of their language proficiency. Cameron (2001) supports this statement, by discussing that classroom tasks and activities play a crucial role in shaping the foreign language environment, thus emphasizing the need to design tasks that are relevant and meaningful to the students, considering their abilities and interests.

The tasks containing *vocabulary puzzles* where students rearranged letters generated positive feedback from students and the teachers observed that the groups worked with interest when being presented these tasks. The foci of these puzzles were vocabulary and spelling. The engagement might have been due to several factors such as familiarity with the puzzle structure, or the utilization of the task design which scaffolded them by providing them with the necessary letters, thus eliminating several misspellings.

The task regarding *rules about indefinite articles* also generated student engagement. It required them to review and discuss their findings efficiently, encouraged by their desire to advance in solving the puzzle. The teachers were able to observe students eagerly discuss and ask questions within their groups, focusing on sharing their knowledge regarding the grammatical rule in an environment which was connected to a puzzle they needed to solve in order to advance.

The task which aimed at *locating spelling mistakes* in a text generated an environment in which the students were comfortable discussing their theories, sharing their observations. One of the reasons for the engagement might have been the fact that the digital guide

provided the students with the solution to the task, giving an opportunity to review and note where they might have thought incorrectly.

The final task, *the maze*, was one that received a considerable amount of positive feedback. There are several possible factors which could have contributed to this response, thus making it difficult to determine the main factor of this task's success. One factor was that it provided the students with the opportunity to work individually, in contrast to the group setting of the previous tasks. Although the students had reported that they enjoyed working collaboratively, group work can often be tiring and cause frustration over time. Therefore, the task provided them with an opportunity to get immersed in the story alone, allowing them to advance at their own pace. Additionally, it was the only gamified digital task, thus being different from any other tasks implemented in the lessons. It contained the most gamified elements compared to any other task, with the students needing to navigate through a maze and solve riddles in order to progress.Another reason could also be the fact that the students interacted with this task directly prior to the interview, therefore being the task which they remembered clearly. The teacher's observations were that the students were immersed in solving the tasks and enjoyed the riddles implemented into the tasks. The questions revolving around this task were mostly regarding the possibility of receiving hints for some of the riddles.

It is also important to note instances in this study where the student engagement was less than desired. An example of this is the task that focused on *punctuation*, being the one which received the least amount of student feedback and engagement. This can be due to the fact that the layout of this task was more dull compared to the others, the fact that the digital guide required input in the multiple choice format or because the students felt that the difficulty of this task was not adequate to their level.

When considering the formatting of the digital guide, it is possible to observe that the tasks that utilized the short answer format generated a lot more engagement and discussion in comparison to the tasks which utilized the multiple choice formatting to input the answer. The short answer format generated meaningful discussions and engagement with the material, requiring students to articulate their thoughts and ideas. The only task that benefitted from multiple choice formatting was the maze, due to the fact that it was utilized as a navigational tool and therefore did not require any "solution" as the other multiple choice tasks did.

Student interaction throughout the lessons also served as an indicator of their perceived interest. Not only can it function as an indicator of motivation, but it also supports the possibility of peer scaffolding in a collaborative setting. Collaborative learning is a central component in ERs, in which students work together in small groups toward a common goal (Prince, 2004). Thus, it is possible to consider the implications of the collaborative environment on sustaining the engagement amongst the students. Each group was assigned a color for an overview of materials. The teachers were able to observe that the students utilized the physical materials efficiently, by taking turns while examining them to get a better understanding of the task, as well as scribbling and writing on them, thus attempting several strategies amidst their discussions.

Additionally, it must be noted that the groups elected a turn taking system for locating the physical tasks during the scavenger hunt elements. This was implemented by the students due to them finding this element very enjoyable and feeling that this is an element they wished to share with their peers. Furthermore, it was observed that the students naturally elected a leader of the group amongst themselves, leading the discussion and deciding which strategies should be tested out by the group. The leader oftentimes would also read the tasks aloud to the other students in the group, ensuring that all the members of the group were aware of the contents of the puzzle they had to solve.

Collaboration was recommended as a strategy to facilitate EFL learning through gamified activities rather than competition (Dindar et al., 2021; Li & Chu, 2021, as cited in Zhang & Hasim, 2023). As the students worked through the challenges and puzzles, they engaged in discussions about different strategies to approach the problems they were presented with. They were able to openly discuss their ideas and thoughts with their group members, and consider the viewpoints of others. As mentioned earlier, this peer-scaffolding had an effect on the student engagement. Students were comfortable with asking for help when they encountered difficulties in solving the puzzles. In contrast to formulating questions which would reveal the answer to them immediately, the students asked for hints or suggestions. This willingness to seek help in overcoming the presented problem, as well as sharing their ideas encouraged teamwork and helped foster a positive learning environment.

Throughout both lessons, the students were very eager and interested in a different type of lesson. This curiosity and eagerness was demonstrated by the continuous amount of questions asked throughout the lessons, high engagement in the lessons and several questions in between phases on when the next lesson would occur. This interest reflects the students' ability to take independent actions in their own learning process (Holec, 1979 as cited in Pawlak et al., 2017). The students' ability to initiate discussions, to formulate questions which show their determination to solve the tasks by themselves - only asking for hints, never for answers, while requiring minimal assistance from the teacher demonstrates their independence in their own learning process. This is in line with the ultimate goal of fostering learner autonomy, where students take charge of their own foreign language development (Pawlak et al., 2017). The tasks were designed in a way that interconnected with the story, which generated efficient discussions regarding strategies, even with the tasks which cause frustration for some students. This implies that although the encountered puzzles were challenging, they were still within the ZPD (Brown, 2014), which could have further contributed to the development of learner autonomy among the students. Throughout both lessons, a high level of learner autonomy was observed, considering the student initiated discussions, questions that were formulated and minimal assistance from the teacher was required, mostly in form of hints or suggestions on strategies.

According to Shortt et al. (2021, as cited in Zhang & Hasim, 2023), collaboration and meaningful feedback are feasible gamification elements when designing gamified learning activities. Dindar et al. (2021) and Li and Chu (2021, as cited in Zhang & Hasim, 2023) also recommend using collaboration rather than competition in the design of gamified learning activities to facilitate students' EFL learning. During the planning period of the first phase, there was a consideration whether the implementation of a point and reward system would be beneficial. It was discarded in the planning process, due to uncertainty of utilizing it efficiently in Google Forms as well as the fact that it potentially could negatively impact the students' motivation, by shifting the focus from the tasks to the points they would accumulate. During the second phase, a time frame element was introduced, which had a positive impact on student engagement. It provided breaks between tasks for the students and gave them an opportunity to review their strategies. Additionally, it created a calm atmosphere in which the students listened to the story together. Although there might have been a possibility to utilize more gamified elements in the study, considering its scale and purpose, the implemented elements were sufficient.

Recent studies have shown that gamification elements can increase student motivation in education (Dicheva et al., 2015; Papastergiou, 2009). Considering this, the study presented in this thesis suggests that certain gamification elements were successful in enhancing student motivation and engagement. Specifically, the elements which included physical activity, clear instructions and vocabulary puzzles were able to generate positive student feedback and observed engagement. The design of several of the tasks which were presented to the students aided in scaffolding them by eliminating possible mistakes, further contributing to their engagement. The use of digital guides in gamified lessons was also found to provide an opportunity for review, which was appreciated by the students. The gamified elements mentioned above positively influenced student engagement and motivation in the lessons performed in this study.

5.2.2 Structure of ER in the classroom

The abovementioned collaborative element is key when implementing educational ER in practice. Collaboration and meaningful feedback have been found to be feasible gamification elements when designing gamified learning activities (Shortt et al., 2021, as cited in Zhang & Hasim, 2023). Therefore, it is recommended to use collaboration in the design of gamified learning activities to facilitate students' EFL learning (Dindar et al., 2021; Li & Chu, 2021, as cited in Zhang & Hasim, 2023). Moreover, a gamification approach based on peer-assessment has been found to improve learners' motivation, outcomes, and problem-solving skills (Hwang et al., 2014). However, it is important to note that the only individual task which was implemented in the study received very positive feedback. This could suggest that some individual elements, especially towards the end of an ER, can provide an immersive environment for each of the students participating. It provided an opportunity for summary and revision at their own individual pace. Whilst planning and designing the tasks, the story and the guide took the majority of the time used in preparation, the careful planning in creating the groups was of utmost importance. The idea was to create mixed level groups, which were also comfortable enough with each other to create opportunities for discussion. Based on familiarity and good knowledge of student dynamics, groups were created with the potential for cooperation and engagement due to their confidence in one another.

The use of group work activities, as described by Richards (2013), is a highly effective strategy for promoting collaboration and increasing student participation in language classrooms. The group work activities provided in educational escape rooms reduce the dominance of the teacher and encourage learners to take an active role in their own learning, thus enhancing the interactional dynamics of the lesson. However, as noted by Richards (2013), successful group work activities require careful consideration of factors such as group size, the purpose of the task, and roles in the group. The tasks and puzzles in the educational escape room are designed to encourage teamwork and open discussion among the students, providing opportunities for individual students to practice new features of the target language. The careful design of these lessons and tasks is crucial to ensuring that they support effective language learning and promote a positive learning environment (Richards, 2013).

The success of utilizing ER relies heavily on the design and structure surrounding it. The formatting of the tasks within the digital guide and its impact was already mentioned above, thus highlighting that even a minor detail such as selection of the task format can have an impact on the student engagement. Although gamification can enhance motivation and engagement in education, it must be carefully planned to avoid certain pitfalls, such as frustration or discouragement (Landers & Landers, 2014; Mekler et al., 2017). Therefore, the design of gamified elements is crucial for creating fun and engaging lessons that align with learning objectives and allow learners to practice the target language in a meaningful context (Figueroa, 2015; Deci, 2001).

For example, in creating educational escape rooms, it is important to balance learning and gameplay while providing frequent, intense, and immediate feedback, and to use storytelling as a game design component to enhance student engagement (Makri et al., 2021; Nah et al., 2014; Kapp, 2012a). The successful integration of gamification elements in education can be a promising approach that enhances motivation and engagement, and ultimately improves learner outcomes.

5.2.2.1 The design of the digital guide and the tasks

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After discussing the importance of design and structure in ER, a discussion regarding the implemented digital guide is of the essence. Overall, the guide was well-structured, providing the students with visual separation of different tasks. This separation aided in enhancing the focus of the current task the groups were intended to be working on. Additionally, the guide contained imagery, which helped scaffold the students' comprehension of the provided texts, therefore enhancing their immersion and learning experience. In light of this, it is possible to consider that this implementation had an effect on student motivation and engagement. The use of sections created suspense and motivated students to work through the tasks in order to advance further in the story. Teachers were able to observe that the students were excited to learn more about the story, which is also supported by the student interviews.

The process of designing the digital guide and the physical tasks was cohesive, with the design of physical items being prioritized over the digital guide. Students were intended to look at the screen for a fraction of time compared to the time they would spend interacting with the physical items. Students were encouraged to write on the tasks using pencils and markers, which opened doors for multiple strategies they implemented themselves, such as crossing out letters or highlighting everything they thought could be a spelling mistake, eventually eliminating them during group discussion. This approach not only allowed for greater student autonomy, but also resulted in more active engagement, as students were mostly interacting with the physical elements.

5.2.2.2 Storytelling

Kapp (2012a) discusses how contextualized storytelling combined with carefully designed gamified elements can lead to learner engagement. This presentation of gamification and storytelling supports the use of storytelling as a way to increase student involvement and engagement in the learning process. Additionally, Kapp (2012a) discusses how a good storyline can help maintain motivation and interest throughout the learning process, as well as provide a context for learning and problem-solving. In addition, stories can be carefully crafted to keep the audience interested and engaged, leading to growth in vocabulary (Cameron, 2001). The storytelling approach used in the lesson was structured to capture the students' attention. In the second phase of the study, the teacher-researcher

announced when the story would be read, which immediately captured the students' concentration. To ensure comprehension and create suspense, the teacher-researcher occasionally asked the students questions about the story or what they thought might happen next.

The use of storytelling varied throughout the lesson, adapting to increase immersion. During the first phase, the story was limited and dependent on students' reading comprehension of the tasks. In the planning of the second phase, feedback gathered from student interviews was used to incorporate more story into the lesson, which students reported as enjoyable and exciting. Storytelling also served as a structural tool within the lesson, providing students with a moment to calm down and reset before proceeding to the next task. This change of pace united, calmed, and refocused the students while simultaneously capturing their attention. The function and structure of storytelling in the lesson were effective in engaging and motivating the students, which correlates with Nah et al.(2014) stating that storytelling can keep participants interested and involved.

The importance of design of an educational ER lesson was highlighted by Makri et al.'s (2021) theory. It is therefore important to review which designed elements were successful in this study, while simultaneously discussing the effectiveness of these elements on the learners.

The scavenger hunt elements were successful in maintaining student motivation as well as contributed to the immersion. Dividing tasks into sections, such as the third task in the second phase, allowed multiple students to work and discuss strategies simultaneously . The unplanned introduction of time limits in the second phase had a positive effect and provided opportunities for review. Providing the tasks in physical format allowed for a collaborative examination of the task, whilst the groups began debating which strategies to implement.

The use of scavenger hunt elements, time limits, physical tasks and task division were all successful in maintaining student motivation and engagement in the lessons performed in the study. These elements align with Makri et al.'s (2021) guidelines for creating a successful digital educational ER, which suggest adopting a game-designed framework, creating hybrid learning experiences and using sustainable materials to create these educational

environments. Additionally, the tasks division and utilization of physical material allowed for peer-scaffolding and dialogue, which is an important aspect of an educational ER.

5.2.3 Language learning with focus on vocabulary and grammar

The use of gamification elements such as puzzles and storytelling in educational ER can be effective in engaging students and promoting learning in different areas (Nah et al., 2014). During the first phase of the study, the students engaged in discussions about grammar rules and their use while working on tasks, which was observed by the teachers. Some groups were so invested in these discussions, that they asked whether they could retrieve their textbooks in order to cement their knowledge of their rule. The students were thus able to solidify their understanding through a collaborative method, in an environment where they were motivated and felt the task was contextualized.

In addition to the gamified elements, the use of stories has also been shown to be effective in promoting involvement and motivation in language learning (Cameron, 2001). The incorporation of stories can motivate students to participate in activities that reinforce the vocabulary and language used in the story they were presented with.

Cameron (2001) states that in order to provide a rich language experience for learners within their ZPD, EFL lessons should offer activities that build necessary language skills. The lessons presented in this study were able to create an environment in which the students were able to practice their conversational skills, considering several groups spoke English throughout the lesson. The teacher-researcher was able to facilitate a common theme and vocabulary that the students had encountered before, thus scaffolding the discussions by implementing these elements in the lesson design.

The impact of contextualizing vocabulary and grammar on learner engagement and outcomes can be perceived as positive in this study. Students gradually became more confident in recognizing target vocabulary due to it being contextualized and explained by the teacher during the story reading. In addition, grammar learning was observed to have had a positive impact, with students discussing grammatical rules among themselves and using several strategies to clarify their understanding. The engagement level was continuously positively impacted, as a normally quiet class was actively engaged in discussions regarding

how to solve the tasks in order to proceed. This would suggest that contextualizing tasks revolving around vocabulary and grammar, along with providing opportunities for collaboration, can enhance learner engagement and outcomes in vocabulary and grammar learning.

To summarize this section, a review of the main research question is in order. It stands as follows:

"Does the implementation of gamification through Escape Rooms have an effect on students' engagement when working with tasks related to grammar and vocabulary in a 6th grade EFL Norwegian classroom?"

The discussion presented above offers several points which argue for the fact that the above mentioned implementation of gamification can have a positive effect on students' engagement when working with tasks related to grammar and vocabulary in the setting of the study. Various integrated elements , such as use of storytelling as a component of task design, use of physical materials, a collaborative environment that still provided room for individual work, and a balance between learning and gameplay which was facilitated by the careful lesson and task design, were able to provide an overview of the impact a gamified lesson can have on EFL learning

5.3 Limitations of the project

5.3.1 General limitations

One of the limitations encountered during the project was time management in planning. Inexperience with implementing gamified lessons in various formats made it challenging to determine the amount of time required for each part of the lesson. As a result,

some time was spent on details that were ultimately not significant. Although the actual lessons were one hour long and worked well with the project format, creating and planning the ER was sometimes difficult to manage. The design decisions and necessary adjustments required more time than expected, which may be an important consideration for future practitioners looking to implement a similar project.

When considering resources utilized in the project, the most notable is the fact that the teacher-researcher was accompanied by the class teacher in both phases. The research benefited from having the opportunity to have two teachers present, which, additionally, the students were very familiar with. This ensured that the students could be efficiently scaffolded when needed throughout both phases, due to the teachers present being familiar with the strategies they are used to implementing.

The learners' abilities and task flexibility were two factors that were considered in the design of this project. The groups contained a mix of students from all three difficulty steps in which they were separated by homework. Learners' abilities and relations were taken into consideration when creating the groups in order to ensure that the students felt comfortable working together. Additionally, the adjustability of the tasks was considered in both the design process, by utilizing hints implemented in the digital guide, and in the selection of the students for each group. The teachers present were also there to scaffold the students if the need arose. Despite these considerations, some students still faced challenges during the lessons. Future projects could consider more ways to ensure that tasks are adjustable to the students' abilities and provide additional support where necessary.

The digital competency of both the teacher-researcher and the students was a factor considered in this project. The teacher-researcher only utilized Google Forms and Google Slides in the process of designing the materials and the digital guide for the ER. These tools are approachable and quite simple to learn - even practitioners with the most basic skills would be able to design a lesson of similar structure. Digital competency is not a requirement in order to create an educational escape room, as it does not always require a digital element. However, the utilization of a designed digital guide can be an effective tool to facilitate such a lesson. While the students perceived the digital guide as neat and easy to navigate, they struggled with noticing the information in the headings. Eventually, they were able to navigate the guide with little difficulty. There was an issue with one of the tasks in the digital

guide in the second phase, which was quickly resolved by the teacher-researcher due to their knowledge of the digital guide structure. This technical issue provided little impact on the study. These challenges highlight the need for digital competency when creating and utilizing gamified lessons, and the importance of considering the technical skills of both the teacher-researcher and the students when implementing these types of activities.

The group size and engagement were factors that needed to be taken into the account in this project. With approximately five students in each group, there was a possibility that some students might not have engaged as much as expected. Additionally, the dynamic between students in each group played a significant role in their engagement. The teacher-researcher's familiarity with the students was helpful in creating groups with bigger probability of success, but it was still an underlying concern. In a class of 27 students, some groups were more engaged than others, particularly those with several step 3 students. The less engaged groups were still quite active, but required more interaction from the teachers present. These interactions mainly focused on guiding these groups in the right direction and thus provide scaffolding to maintain their interest and motivation. The importance of scaffolding is evident, since students tend to lose interest if they cannot overcome a struggle, which would hinder the overall success of the project. This resonates with statements provided by Brown (2014), which highlight the importance of ZPD and the role of teachers as facilitators in these environments.

5.3.2 Teacher-researcher experience with AR

Kemmis et al. (2014) discuss the importance of an educator developing a greater understanding of their own practice through AR and I would also like to reflect on this dimension of the study.

Several elements stand out in regards to professional improvement due to AR. The most important lesson was time management in task design, which proved to be highly beneficial. A lot of time was spent adjusting and reviewing material, asking colleagues for feedback and implementing visual elements which would interest the students. Additionally, the importance of setting aside time in order to clarify instructions was emphasized. Creating contextualized environments for students to generate discussion and engaging them in a cohesive story made tasks much more appealing. Group dynamics were also taken into

consideration as an important factor in student engagement, therefore making the researcher carefully select the participants for each group. The design of the digital guide created an opportunity for the teachers present in the lessons to scaffold much more efficiently since the guide was, in a way, responsible for structuring the lesson. Listening to and implementing student feedback efficiently was a great learning experience for the teacher-researcher, as it opened a conversation with the class regarding which tasks they would enjoy seeing more of. Overall, the use of action research allowed the researcher to improve their skills and knowledge, as well as led to a more successful implementation of the educational escape room.

It is important to note recommendations for future practitioners who wish to implement gamification in education. Several points can be considered when implementing gamified lessons. Design of the lesson is vital and future practitioners are recommended to have a set idea for each task and for the story ready early on in the planning process. Time management is crucial in creating gamified lessons. It is of utmost importance to identify the most significant aspects of the lesson and focus on those in order to avoid spending time on details, which could be unnecessary.

Utilization of available resources also plays a big role in conducting gamified lessons. Future practitioners should consider collaborating with other teachers, in order to provide additional support and insights in the design and implementation of gamified lessons. Following on this, being familiar with the students allows for greater success when designing groups. Researchers who are unfamiliar with the students may create groups which hinder the desired collaborative element of gamification. In the future, the design of groups should include this dynamic relational element in addition to student abilities. Additionally, future practitioners should be aware of the group size. Aim to keep group sizes small enough to ensure student participation, thus maximizing the engagement in the lesson. Scaffolding should be provided to maintain student motivation and interest, especially for less-engaged groups.

By considering these recommendations, it is possible to develop and implement effective gamified lessons which can engage and motivate students. However, it is important to note that gamification is a process which requires continuous reflection and improvement, thus

suggesting practitioners to be open to feedback and to create adjustments in order to improve student learning outcomes.

6. Conclusion

The AR study presented in this thesis investigated the impact of implementing gamified tasks through an educational ER seeking student engagement in a 6th grade EFL Norwegian classroom. Data for this study was gathered through group student interviews following each AR phase as well as unstructured teacher observations made in the AR lessons. The qualitative data was analyzed and implemented into lesson design of the second phase.

The main intention of this thesis was to focus on student engagement and motivation in language learning, specifically on the impact of the format of glossary and grammar exercises. Many students tend to disengage from repetitive tasks, such as standardized glossary or grammar exercises, which can negatively affect their attitude towards language learning. The thesis aimed to explore whether varying the format of these exercises can increase student motivation and perception of the tasks mentioned above. Moreover, the thesis investigated whether implementing glossary words and grammar rules in a meaningful context, where students are required to actively recall previously learned material, can aid their ability to retain vocabulary and apply it in real-life situations. By doing so, the thesis aimed to contribute to the ongoing discussion about effective strategies to enhance student engagement and motivation in language learning.

To address these issues, this study was based on a theoretical foundation that incorporated the principles of gamification, scaffolding, and task design within learners' zone of proximal development (ZPD). Specifically, the focus of this research was to investigate the impact of gamification on student motivation and engagement. The gamification elements which were implemented utilized scaffolding through the use of task design and relied on peer collaboration among students. By leveraging the ZPD, students were challenged in a way that was neither too easy nor too difficult, and they worked collaboratively to overcome obstacles and complete tasks. This approach was intended to improve learning outcomes by providing a rich learning environment which maximizes student engagement and motivation.

The Norwegian curriculum (LK20) acknowledges digital competency as a fundamental skill and emphasizes the importance of feedback, student ideas, and a variety of

strategies in enhancing student engagement and motivation in language learning. This study observes gamification as a potential method for integrating gamified elements into education to engage and motivate students. By using gamification techniques that prioritize feedback, student input, and a variety of strategies, educators can create a more engaging and effective learning environment that meets the goals of LK20. Based on this theory, this study aimed to investigate the impact of gamification on student engagement and motivation in language learning. To achieve this, the following research question was formulated:

"Does the implementation of gamification through Escape Rooms have an effect on students' engagement when working with tasks related to grammar and vocabulary in a 6th grade EFL Norwegian classroom?"

The study found that gamification can enhance student engagement and motivation in language learning, specifically in the areas of grammar and vocabulary. This is achievable when tasks are designed carefully to align with learning objectives and are inclusive and accessible to all students. The use of gamification elements such as puzzles and storytelling can promote engagement and learning in language education, and student interaction and peer scaffolding can further enhance intrinsic motivation. The study highlights that creating engaging lessons, which align with learning objectives and are able to provide learners with a meaningful language experience, requires effective collaboration, task design and storytelling.

The teacher-researcher utilized action research (AR) to improve their teaching practice and gather evidence to evaluate the improvements made. Through the spiral process of AR, the researcher was able to actively improve their practice, thus contributing in creation of healthy learning environments. Time management in task design, setting aside time to clarify instructions, creating contextualized environments, and implementing student feedback were all important lessons learned during the study. The digital guide designed for the educational ER allowed for efficient scaffolding and group dynamics were also acknowledged as an important factor in student engagement. Overall, the use of AR allowed the teacher-researcher to improve their skills and knowledge, leading to a successful implementation of the educational escape room.

|The limitations of the study were also discussed, including difficulties in time management, concerns about group dynamics and engagement, and the need for digital competency. However, the teacher-researcher's experience with action research allowed them to improve their skills and knowledge and led to a more successful implementation of the educational escape room.

To summarize, the study was able to yield insights regarding effectiveness of gamification in enhancing student engagement and motivation in EFL. It also emphasizes the importance of careful task design and implementation, while considering student feedback. This study highlights that not all gamified tools are equally effective, and educators must experiment with different tools to find ones that keep students engaged and focused. The findings presented in this study imply that gamification can be utilized as a tool in improving learner motivation.

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8. Appendices

Appendix 1: NSD confirmation

Sikt

Notification form / Masteroppgave i Literacy Studies / Assessment

Assessment of processing of personal data

Reference number	Assessment type	Date
574461	Standard	14.03.2022

Project title
Masteroppgave i Literacy Studies

Data controller (institution responsible for the project)
Universitetet i Stavanger / Fakultet for utdanningsvitenskap og humaniora / Institutt for grunnskolelærerutdanning, idrett og spesialpedagogikk

Project leader
Peter Paul Ferry

Student
Olga Gritsenko

Project period
01.02.2022 - 11.05.2022

Categories of personal data
General

Legal basis
Consent (General Data Protection Regulation art. 6 nr. 1 a)

The processing of personal data is lawful, so long as it is carried out as stated in the notification form. The legal basis is valid until 11.05.2022.

Notification Form 🗗

Comment
OM VURDERINGEN
Personverntjenester har en avtale med institusjonen du forsker eller studerer ved. Denne avtalen innebærer at vi skal gi deg råd slik at behandlingen av personopplysninger i prosjektet ditt er lovlig etter personvernregelverket.

Personverntjenester har nå vurdert den planlagte behandlingen av personopplysninger. Vår vurdering er at behandlingen er lovlig, hvis den gjennomføres slik den er beskrevet i meldeskjemaet med dialog og vedlegg.

TYPE OPPLYSNINGER OG VARIGHET
Prosjektet vil behandle alminnelige kategorier av personopplysninger frem til 11.05.2022.

LOVLIG GRUNNLAG
Prosjektet vil innhente samtykke fra foresatte til behandlingen av personopplysninger om barna. Vår vurdering er at prosjektet legger opp til et samtykke i samsvar med kravene i art. 4 og 7, ved at det er en frivillig, spesifikk, informert og utvetydig bekreftelse som kan dokumenteres, og som den registrerte/foresatte kan trekke tilbake.

Lovlig grunnlag for behandlingen vil dermed være foresattes samtykke, jf. personvernforordningen art. 6 nr. 1 bokstav a.

PERSONVERNPRINSIPPER
Personverntjenester vurderer at den planlagte behandlingen av personopplysninger vil følge prinsippene i personvernforordningen om:

- lovlighet, rettferdighet og åpenhet (art. 5.1 a), ved at foresatte får tilfredsstillende informasjon om og samtykker til behandlingen
- formålsbegrensning (art. 5.1 b), ved at personopplysninger samles inn for spesifikke, uttrykkelig angitte og berettigede formål, og ikke viderebehandles til nye uforenlige formål
- dataminimering (art. 5.1 c), ved at det kun behandles opplysninger som er adekvate, relevante og nødvendige for formålet med prosjektet
- lagringsbegrensning (art. 5.1 e), ved at personopplysningene ikke lagres lengre enn nødvendig for å oppfylle formålet

DE REGISTRERTES RETTIGHETER
Personverntjenester vurderer at informasjonen om behandlingen som de registrerte og deres foresatte vil motta oppfyller lovens krav til form og innhold, jf. art. 12.1 og art. 13.

Så lenge de registrerte kan identifiseres i datamaterialet vil de ha følgende rettigheter: innsyn (art. 15), retting (art. 16), sletting (art. 17), begrensning (art. 18) og dataportabilitet (art. 20).

Vi minner om at hvis en registrert/foresatt tar kontakt om sine/barnets rettigheter, har behandlingsansvarlig institusjon plikt til å svare innen en måned.

FØLG DIN INSTITUSJONS RETNINGSLINJER
Personverntjenester legger til grunn at behandlingen oppfyller kravene i personvernforordningen om riktighet (art. 5.1 d), integritet og konfidensialitet (art. 5.1. f) og sikkerhet (art. 32).

For å forsikre dere om at kravene oppfylles, må dere følge interne retningslinjer og eventuelt rådføre dere med behandlingsansvarlig institusjon.

MELD VESENTLIGE ENDRINGER
Dersom det skjer vesentlige endringer i behandlingen av personopplysninger, kan det være nødvendig å melde dette til oss ved å oppdatere meldeskjemaet. Før du melder inn en endring, oppfordrer vi deg til å lese om hvilke type endringer det er nødvendig å melde:
https://www.nsd.no/personverntjenester/fylle-ut-meldeskjema-for-personopplysninger/melde-endringer-i-meldeskjema. Du må vente på svar fra oss før endringen gjennomføres.

OPPFØLGING AV PROSJEKTET
Personverntjenester vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Kontaktperson hos oss: Markus Celiussen
Lykke til med prosjektet!

Appendix 2: Letter to parents

Vil du delta i forskningsprosjektet

«Gamification in the classroom with a focus on vocabulary»?

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er å undersøke undervisningsopplegg som tar i bruk elementer av spill. I dette skrivet gir vi deg informasjon om målene for prosjektet og hva deltakelse vil innebære for deg.

Formål

Dette forskningsprosjektet er relatert til min masteroppgave, som tar i fokus implementering av spillelementer i engelsk undervisning for å øke motivasjon og innlæring av vokabular. Elevene skal jobbe i grupper for å løse oppgaver som blir presentert som gåter og vil bruke elektronisk spørreskjema til å komme seg videre til neste gåte. Denne typen undervisning vil følge vanlig timeplan.

Hvem er ansvarlig for forskningsprosjektet?
Universitetet i Stavanger er ansvarlig for prosjektet.

Hvorfor får du spørsmål om å delta?
Dette året er det kun denne klassen jeg har i engelsk, som gir en da en mulighet til å utføre en annerledes type økt enn vanlig.

Hva innebærer det for deg å delta?
Elevene kommer til å samarbeide i grupper for å løse oppgaver basert på engelsk vokabular. Hver av disse oppgavene kommer til å bli presentert som en gåte og da må gruppene følge instruksjoner for å komme seg videre til neste utfordring. Det kommer til å være bruk av elektronisk spørreskjema (Google Forms) som gir gruppene de neste utfordringene. Skjemaet er anonymt.
Hvis det er ønskelig for foreldre/foresatte å se skjemaet som vil bli brukt i undervisningsopplegget, så er dette mulig. Undervisningsopplegget kommer til å ha samme varighet som en vanlig skoletime (60 minutt).

Det er frivillig å delta
Det er frivillig å delta i prosjektet. Hvis du velger at ditt barn kan delta, kan du når som helst trekke samtykket tilbake uten å oppgi noen grunn. Alle personopplysninger vil da bli slettet. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil la ditt barn delta eller senere velger å trekke samtykket. Det vil ikke påvirke ditt eller ditt barns forhold til skolen eller lærer.

Prosjektet innebærer at elevene jobber med glosene fra ukeplanen på en interaktiv måte, en sammenhengende serie av gåter og rebuser. Prosjektet har ingen påvirkning på timeplanen.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger
Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket.
Ingen navn vil bli registrert i forskningsprosjektet. Elevbesvarelser blir ikke lagret. Skjemaet er kun for enklere praktisk gjennomføring av undervisningsopplegget.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?
Opplysningene anonymiseres når prosjektet avsluttes/oppgaven er godkjent, noe som etter planen er umiddelbart. Skjemaet blir slettet senest 11.05.2022.

Dine rettigheter

Så lenge du kan identifiseres i datamaterialet, har du rett til:
- innsyn i hvilke personopplysninger som er registrert om deg, og å få utlevert en kopi av opplysningene,
- å få rettet personopplysninger om deg,
- å få slettet personopplysninger om deg, og
- å sende klage til Datatilsynet om behandlingen av dine personopplysninger.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi behandler opplysninger om deg basert på ditt samtykke.

På oppdrag fra Universitetet i Stavanger har NSD – Norsk senter for forskningsdata AS vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Hvor kan jeg finne ut mer?

Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:
- Universitetet i Stavanger ved Olga Gritsenko.
- Universitetet i Stavanger ved Peter Paul Ferry.

Hvis du har spørsmål knyttet til NSD sin vurdering av prosjektet, kan du ta kontakt med:
- NSD – Norsk senter for forskningsdata AS på epost (personverntjenester@nsd.no) eller på telefon: 55 58 21 17.

Med vennlig hilsen

Veileder: Student:

Peter Paul Ferry   Olga Gritsenko

Samtykkeerklæring

Jeg har mottatt og forstått informasjon om prosjektet» Gamification in the classroom with a focus on vocabulary», og har fått anledning til å stille spørsmål. Jeg samtykker til:

☐ at mitt barn deltar i gruppeoppgave som bruker anonymt elektronisk skjema.

Jeg samtykker til at mitt barns opplysninger behandles frem til prosjektet er avsluttet.

(Navn, dato)

Appendix 3: Digital guide (First phase)

The tale of princess Rosanna

Work together to solve tasks to find out what happens!

How does this work?

1. You are assigned to a team.
2. This form will be your adventure guide - read everything carefully.
3. You will need each others help - talk together to solve the tasks.
4. You only need one Chromebook.
5. If you do not understand a task after talking together as a team - find an adult to help.

Etter del 1   Fortsett til den neste delen

The story so far...   ⌄   ⋮

Beskrivelse (valgfritt)

10 years ago......

A beautiful castle stands tall in the kingdom of Erelion. There are two young girls playing in the gardens, running after each other and laughing loudly. The sun is shining on their smiling faces as they sit down on the grass to take a break.

"It is so warm out here", says one of the girls. She lifts her red hair from her neck to cool down.

"Maybe we should go inside for a while. Even my brain feels warm in this sun.", says the other girl. "Let us go get some water from your mom in the kitchen."

"Carry me. I do not have the strength to go on. Be my hero, Rosanna. Save me from the sun."

"You are being so dramatic, Ingrid.", Rosanna laughs. "Race you to the kitchen!"

But now, some things seem to have changed......

Etter del 2   Fortsett til den neste delen   ▾

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Registration

Beskrivelse (valgfritt)

What is your team color? *

- ◯ Red
- ◯ Blue
- ◯ Green
- ◯ Yellow
- ◯ Black

Etter del 3   Gå til del 4 (Where is the first clue?)

Where is the first clue?

You should check under your desks - one of you have received a very old letter!

Bildetittel

Etter del 4   Fortsett til den neste delen

Appendix 3.1 The first task

The first task - A or An?

Beskrivelse (valgfritt)

Work together to solve the task. *
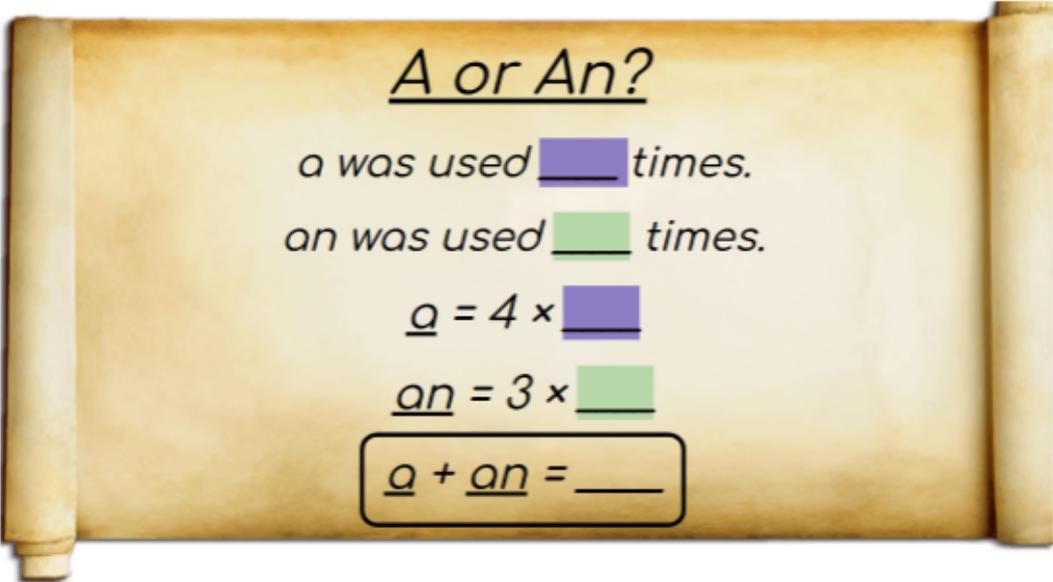
Kort svartekst

Etter del 5   Gå til del 6 (Have you read any ...ewspapers lately?)

Have you read any newspapers lately?

Find the clue and read it together with your group.

Bildetittel

Appendix 3.2 The second task

The second task - The Note

Beskrivelse (valgfritt)

Something is not quite right about this note.... Count how many mistakes you manage to find! *

○ 13

○ 14

○ 15

○ 16

○ 17

Etter del 7   Fortsett til den neste delen

So close - keep trying!   You are missing some mistakes...

Tip: The name of the princess is Rosanna.

Etter del 8   Gå til del 6 (Have you read any ...ewspapers lately?)

So close - keep trying!   You have counted too many mistakes...

Look over the text once again!

Etter del 9   Gå til del 6 (Have you read any ...ewspapers lately?)

Good job! Now, let's find out what the letter really said...

Beskrivelse (valgfritt)

After reading the note closely, you find out that the mistakes formed a secret message!

Dear Princess Rosannah,

Please do know how happy we are witth the niews of the competition.
There are many excited bowmenn practicing in the foresf.
They oll keep talkring about the preize.
Moving to the sity is a dream to many oft us.

Princess Rosannah, I thenk you.
To compele with my pow and arrow is the best chance I have had.

- a hopeful friend
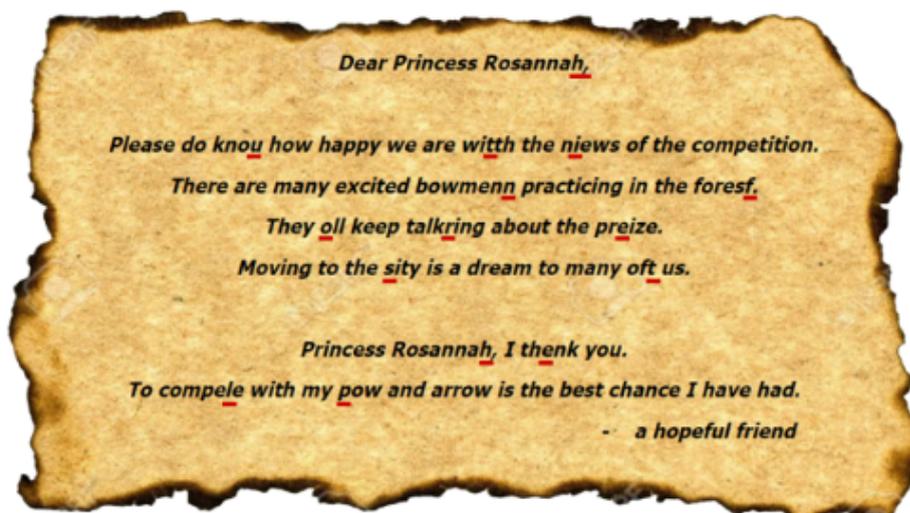
The wrong letters spell out this message - "hut in forest help"! So strange...

Beskrivelse (valgfritt)

You may now open the bird envelope.

The vikings hold the next clue for one of you. Look to your books for help!

Find the clue and read it with your group.

Bildetittel

Etter del 11   Fortsett til den neste delen

Appendix 3.3 The third task

The third task - The Journey

Beskrivelse (valgfritt)

What happened to this text?! Everything got mixed into one long text! Read it carefully and answer - how many sentences are in this text? *

○ 4

○ 5

○ 6

○ 7

○ 8

○ 9

Etter del 12   Fortsett til den neste delen

So close - try again!

You have not counted enough sentences.

Etter del 13   Gå til del 11 (The vikings hold t...r books for help!)

So close - try again!

You have counted too many sentences.

Etter del 14   Gå til del 11 (The vikings hold t...r books for help!)

Good job! ⌄ ⋮

Beskrivelse (valgfritt)

Rosanna has found a hut in the forest. She sees the painting of red wings and remembers the red feather from the note. Unsure, she puts her feather to the painting on the door. There is a sound of a lock opening and the door opens slightly.

Bildetittel

127
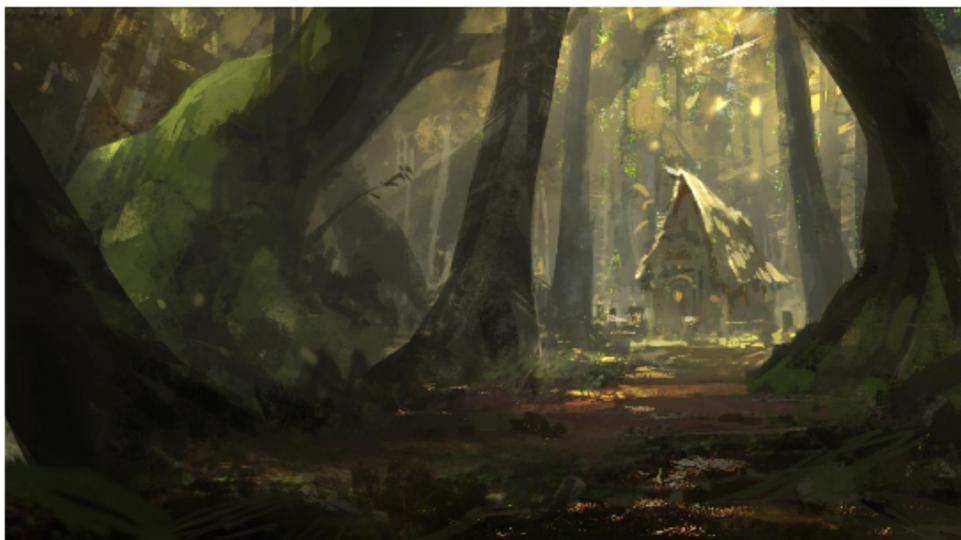
When entering the hut, she finds a stack of letters and a note. She also sees a strange box with a lock that has letters on it.

Beskrivelse (valgfritt)

You may now open the the scroll envelope.
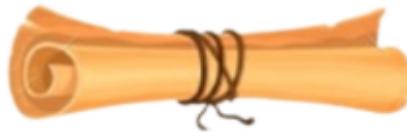
Etter del 16   Gå til del 17 (Solve this riddle ...ue:)

Solve this riddle to find the next clue:

"I will keep your books safe in my pack - zip me up before you sling me on your back."

Find the clues and solve the puzzle together.

Etter del 17   Fortsett til den neste delen

Appendix 3.4 The fourth task

The princess hears the lock click open. She opens the box to find ...

Beskrivelse (valgfritt)

... a magic wand!

Etter del 19   Fortsett til den neste delen

130

The Wand

Beskrivelse (valgfritt)

Rosanna picks the wand up and feels a wave of energy go through her. The knowledge of magic rushes through her head. The princess wonders why her mother never told her of this magic. "I need to find this wizard from the letters and get some answers", she thinks to herself as she turns around to leave the hut.

Beskrivelse (valgfritt)

Bildetittel
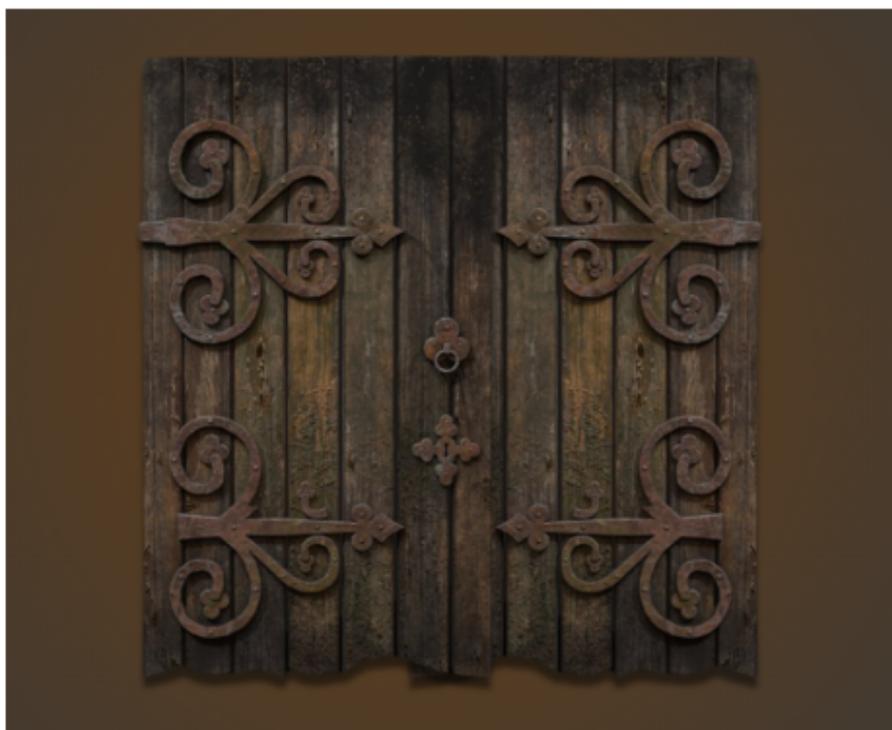
The hopeful friend?

Beskrivelse (valgfritt)

As Rosanna turns to leave the hut, she sees a hooded person stand in the doorway. Surprised, she freezes where she stands. Something about this person feels familiar...

Appendix 4: Digital guide (Second phase)

Del 1 av 74

The tale of princess Rosanna 2

Work together to solve tasks to find out what happens!

How does this work?

1. You are assigned to a team.
2. This form will be your adventure guide - read everything carefully.
3. You will need each others help - talk together to solve the tasks.
4. You only need one Chromebook.
5. If you do not understand a task after talking together as a team - find an adult to help.

Etter del 1   Fortsett til den neste delen

The story so far...

Beskrivelse (valgfritt)

10 years ago.....

A beautiful castle stands tall in the kingdom of Erelion. There are two young girls playing in the gardens, running after each other and laughing loudly. The sun is shining on their smiling faces as they sit down on the grass to take a break.

"It is so warm out here", says one of the girls. She lifts her red hair from her neck to cool down.

"Maybe we should go inside for a while. Even my brain feels warm in this sun.", says the other girl. "Let us go get some water from your mom in the kitchen."

"Carry me. I do not have the strength to go on. Be my hero, Rosanna. Save me from the sun."

"You are being so dramatic, Ingrid.", Rosanna laughs. "Race you to the kitchen!"

But now, some things seem to have changed.....

The hopeful friend?

Beskrivelse (valgfritt)

As Rosanna turns to leave the hut, she sees a hooded person stand in the doorway. Surprised, she freezes where she stands. Something about this person feels familiar...

The hopeful friend!

Beskrivelse (valgfritt)

The light from the window shines on the face of the person in the hut. A girl, the same age as Rosanna looks right at her. "Ingrid! Is that you? I haven't seen you in years! I can't believe you're here! What is happening? What is all this?" Rosanna asks.

Ingrid and Rosanna

"I am so happy to see you - but we do not have much time. I had to make sure you got your magic powers back. I need you to use your gift of vision - touch this scarf and help me find the person who owns it. I am afraid they are in danger."

Registration

Beskrivelse (valgfritt)

What is your team color? *

○ Red

○ Blue

○ Green

○ Yellow

○ Black

Etter del 5   Fortsett til den neste delen

Appendix 4.1 The first task

The first task - the scarf

You may now open the scarf envelope and read the instructions.

What is the first sentence?

Kort svartekst

What is the second sentence?

Kort svartekst

What is the third sentence?

Kort svartekst

Etter del 6   Fortsett til den neste delen

The vision

Beskrivelse (valgfritt)

The scarf belongs to...

Rosanna tells Ingrid of the vision that she saw.

"That woman, was that your mother?" Rosanna asks.

"Yes. I have to hurry to the cave to see if she is hurt. My mother is a mage - go to the attic to find a way to contact the other mages to help us. There is a note on the table that will help you figure it out." Ingrid says.

"I will do my best and I will hurry. I am just so happy to see you again - I've missed my closest friend. Please, be careful."

Rosanna rushes to Ingrid and gives her a big hug.

"Of course I'll be careful, Rosanna - or have you forgotten that I can turn invisible? I will wait for you by the cave." Ingrid replies, smiling.

Bildetittel

Appendix 4.2 The second task

The second task

You may now open the attic.

Rosanna sees a shelf filled with different flasks and potions. She looks closely and notices a note with a drawing of the shelf on it. The drawing has a word written on each row of the shelf.

On a table next to the shelf, she finds a series of riddles. Every riddle is for a row on the shelf that points to a potion. Each potion is a letter. What word do these letters make? *

1st: The middle flask is not for you - twice to the left will be your clue.

2nd: Between these potions that are green, find the one that is most threatening.

3rd: It's not the forest, not the ocean - the second from the right will be your potion.

4th: The potion that you need from here is to the right of the bright green.

5th: The last ingredient you need is neither green nor blue nor pink. It stands so tall close to the middle - it is the last one you need to solve the riddle.

Kort svartekst

Etter del 8   Fortsett til den neste delen   ▼

141

The Potion

Beskrivelse (valgfritt)

Rosanna puts the potions in the right order and spells out the word with her wand. Suddenly, the mirror right above the table starts to darken and she sees a face of a woman.

The woman in the mirror

Beskrivelse (valgfritt)

Questions, answers and more questions...

"Who are... Princess Rosanna? How did you..." the woman begins to ask.

"Yes, it is me and I have a message from Ingrid." Rosanna interrupts. "I had a vision of Hilda seeing a magic wall. She was hit by someone right before my vision ended."

"A vision? Your powers have returned? When did this happen? Where did you see Hilda exactly? Where is Ingrid?" the woman asks, overwhelmed.

"They have returned today, thanks to Ingrid. I have some questions of my own as well - let us start with a simple one: Who are you and what is going on?" Rosanna replies.

"My apologies, Your Highness. My name is Moria and I am the leader of the Mage Circle. I am beyond happy to hear that your powers have returned. It is only those of the royal bloodline that are blessed with the gift of vision. I will give you an explanation of what has been going on in the past years. We have found that there is a wizard that has been working with the Queen to make the citizens of Erelion suffer. However, without your gift of vision it has been difficult to find out who he really is. He has been very, very clever. Hilda and Ingrid are part of the Mage Circle. Ingrid, as you know, can turn invisible. Her mother, Hilda, is the best potionmaker that we have in the Circle. The vision of her that you saw may very well be the wizard's secret hideout. We must get there as soon as possible. I hope Hilda is still with us..." Moira says.

"Thank you. I assume then that it is the wizard that has made me forget my magic. I cannot remember mother talking about it even once... The vision showed that the magic wall was hiding a cave across the river. Ingrid has already left to observe the area and is waiting for me to meet with her." Rosanna replies.

"We will meet you there as well. This magic barrier should prove a simple task for our mages. I will see you soon, Your Highness." Moira says before disappearing from the mirror.

Rosanna gathers her things and leaves the hut. She finds her horse, Nina, eagerly waiting her return.

"Off to the cave we ride, old friend!" Rosanna says to Nina as they begin their journey.

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The Cave

Beskrivelse (valgfritt)

Rosanna arrives to see the mages already working on the magic wall. Ingrid sees her approach and rushes over. "I knew you could do it! They just arrived a minute ago." Ingrid says. Rosanna notices the worry in her friend's face. "Any sign of Hilda?" Rosanna asks. Ingrid shakes her head, looking down. "Magic wall is down!" Moira says, loudly. Ingrid turns around and rushes in the cave.

Etter del 11   Fortsett til den neste delen

Appendix 4.3 The third task

The Cave

Beskrivelse (valgfritt)

Hilda is the first thing they notice, her arms and legs tied to a chair. One of the mages tells everyone to be still as he checks for traps around Hilda. Luckily, there is none and she is quickly freed. Ingrid rushes over with some of the mages to make sure everything is alright. Hilda slowly wakes up, smiling when she sees her daughter. "I knew you would find me, little one. I didn't manage to see his face. I'm sorry." Hilda says. Everyone else is now looking for clues in the cave. Rosanna seems to notice something under the bookshelf in the back.... Can you help her look for it?

Etter del 12   Fortsett til den neste delen

The third task

This envelope has the wizards notes and a picture of a young girl! But all these pages have so many words that have been scrambled...

How many verbs are there amongst the scrambled words? *

Kort svartekst

Etter del 13   Fortsett til den neste delen

The picture in the envelope

Beskrivelse (valgfritt)

"That girl! I remember! That is Elena - the daughter of Maglure; I remember she got sick and passed away from the fever." Rosanna said. "Maglure? I cannot believe that Maglure is this wizard! He has been the Queen's advisor for as long as I remember!", Ingrid replied. "We must show the mages what we found! Mom could be in danger!" Rosanna said with worry, rushing to find Moira.

To save the Queen

"In one of his notes, Maglure said that he was going to give the Queen to this Mogal - Bal creature. We have to warn her!" Ingrid states.

"All these years we thought she was pure evil herself, but he had her under his spell! We found something as well - a potion of true sight. If this liquid was thrown in the Queen's eyes, the spell would be broken! Maglure has been gathering the ingredients for this potion so that no other mage could make it." Moira replies.

"We need to bring this potion to mother as soon as possible. She never leaves the castle, so I suggest we start looking there. If he had already taken her, then, I think, she would have been here." Rosanna says.

"All of us cannot go at once - it will cause suspicion. Some should stay here in case he returns, and Hilda should not move yet. The healers are doing their best, but she was hit pretty hard." Moira replies.

"Rosanna and I should go. It makes sense. Not only can I turn invisible, but I also remember the castle quite well. Rosanna will not cause any suspicion - if anything getting into the castle will be easier." Ingrid suggests.

"I agree" says Rosanna. "This is the best way." She looks at Ingrid with determination.

"It seems you too have made up your minds. Bring the potion with you and be careful. Maglure is a clever man." Moira says.
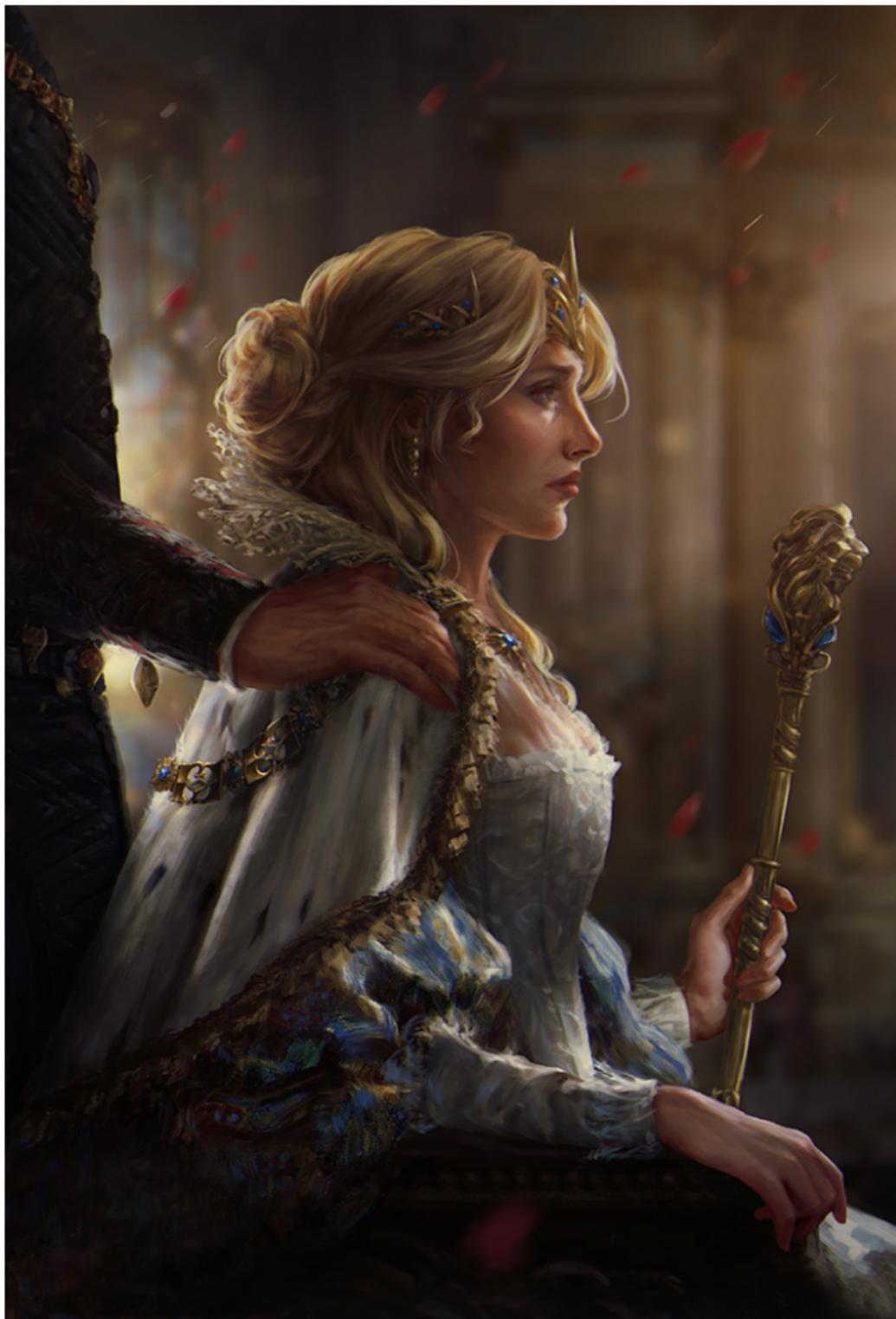
Where is the Queen?

Beskrivelse (valgfritt)

Ingrid and Rosanna make their way safely past the castle guards. As Rosanna stables her horse, she asks one of the servants if they have seen the Queen lately. She is told that the Queen went for a walk in the gardens not too long ago. Ingrid and Rosanna rush over to the garden maze. "I will go in - it is easier for me to sneak around undetected. Can you stay out by the entrance and make sure no one else comes in, Rosanna?" Ingrid asks. Rosanna nods in reply. Ingrid smiles at her and enters the maze.

Etter del 16   Fortsett til den neste delen

149

Appendix 4.4 The fourth task

The Maze

Beskrivelse (valgfritt)

You may now open the clue with this token. This will give you an old map of the maze. You have to make your way to the middle of the maze in order to find the Queen.

Etter del 17   Fortsett til den neste delen

The Maze

Beskrivelse (valgfritt)
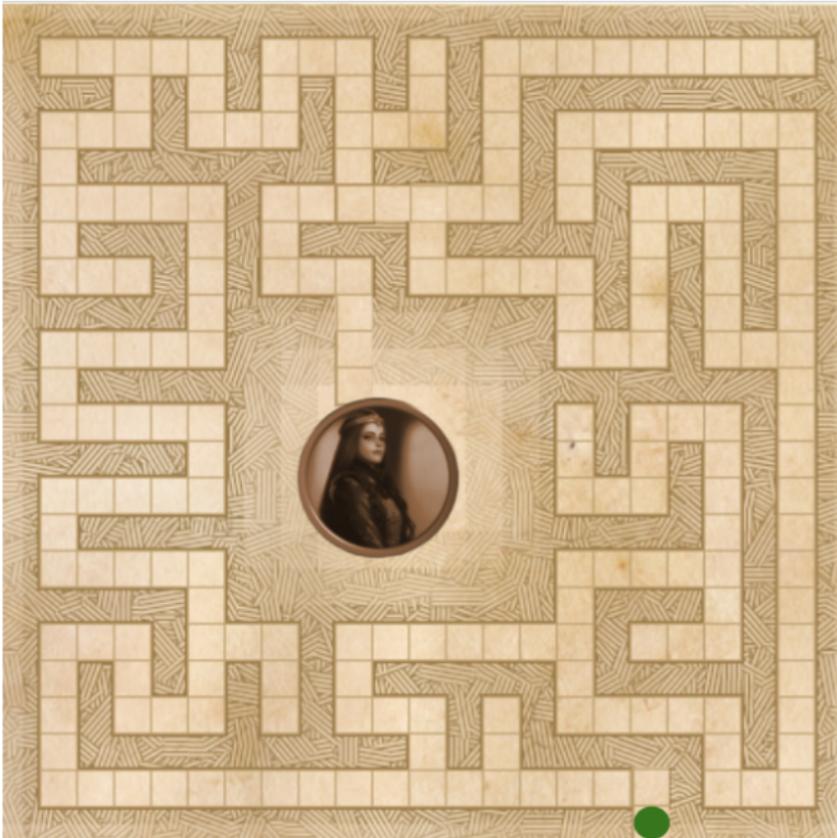
Which way? *

○ To the left

○ To the right

○ Straight ahead

Etter del 18   Fortsett til den neste delen

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)

Etter del 19   Gå til del 18 (The Maze)
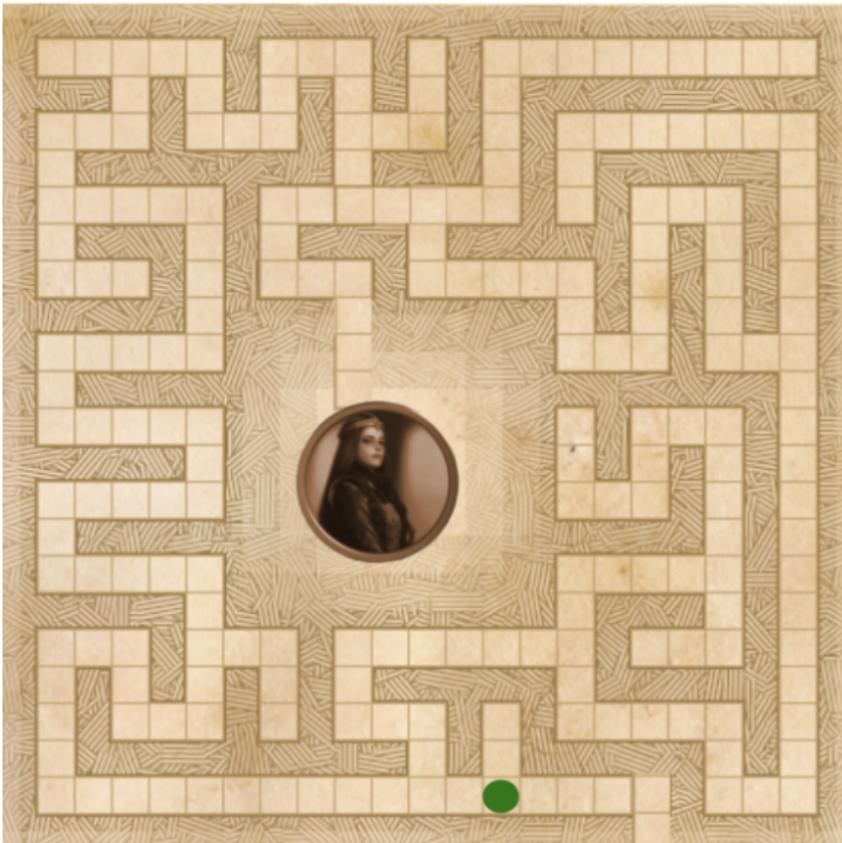
151

The Maze

Beskrivelse (valgfritt)

Which way? *

◯ To the left

◯ To the right

◯ Straight ahead

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)

The bushes here are too big -you can't get through. Choose a different way!

Beskrivelse (valgfritt)

Etter del 22   Gå til del 20 (The Maze)

The Maze

Beskrivelse (valgfritt)

Which way? *
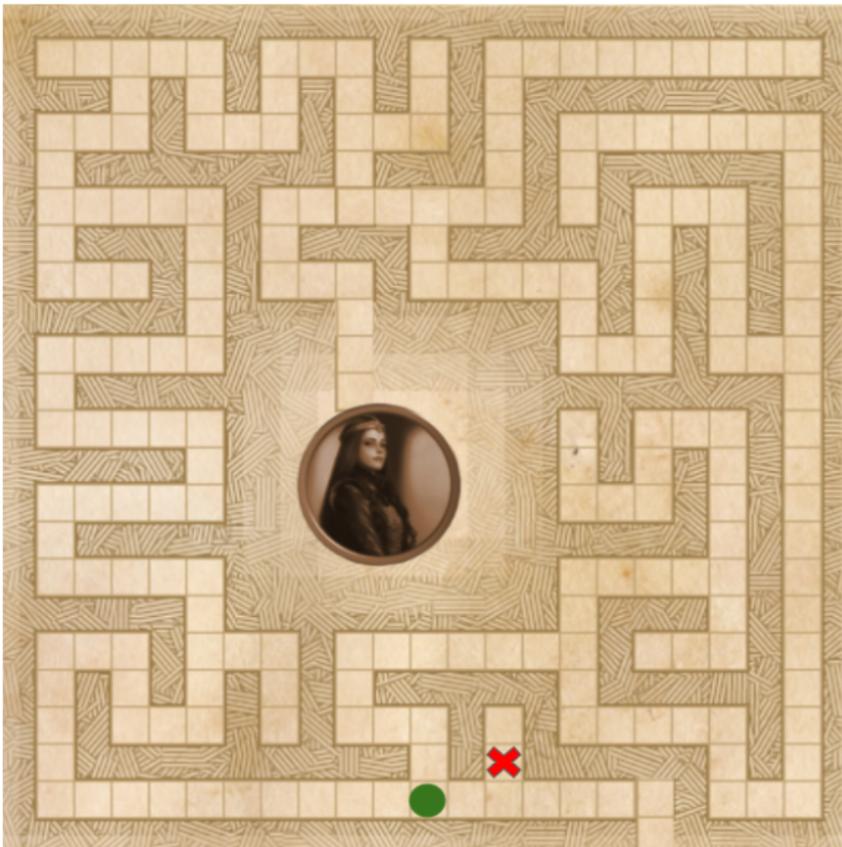
- ○ To the left
- ○ To the right
- ○ Straight ahead

Etter del 23   Fortsett til den neste delen

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)

Etter del 24   Gå til del 23 (The Maze)

There are a lot of guards standing in this path. Choose a different way!

Beskrivelse (valgfritt)

Etter del 25   Gå til del 23 (The Maze)

The Maze

Beskrivelse (valgfritt)
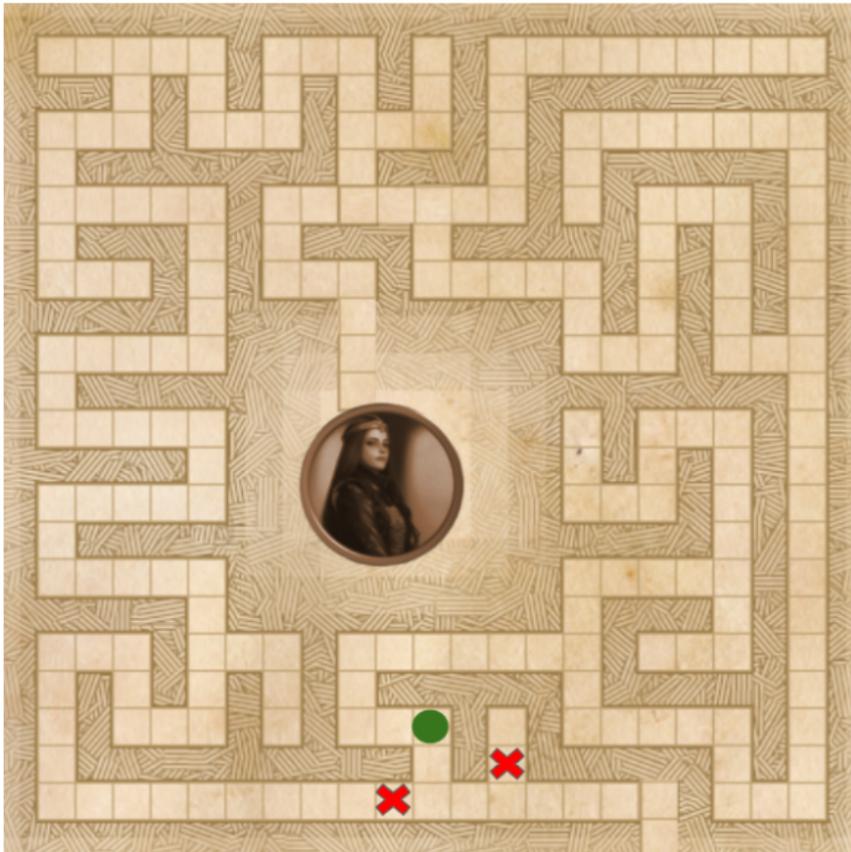
Which way? *

○ To the left

○ To the right

○ Straight ahead

Etter del 26   Fortsett til den neste delen

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)

Etter del 27   Gå til del 26 (The Maze)

The Maze
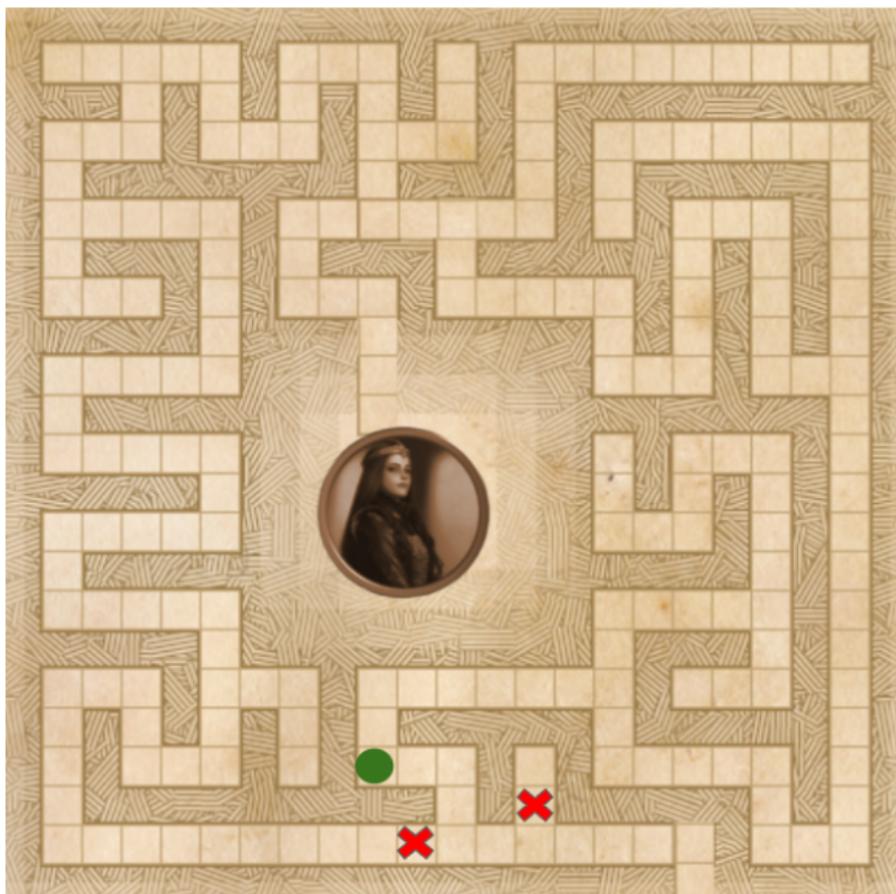
Beskrivelse (valgfritt)

Which way? *

○ To the left

○ To the right

○ Straight ahead

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)

The Maze

Beskrivelse (valgfritt)

Which way? *
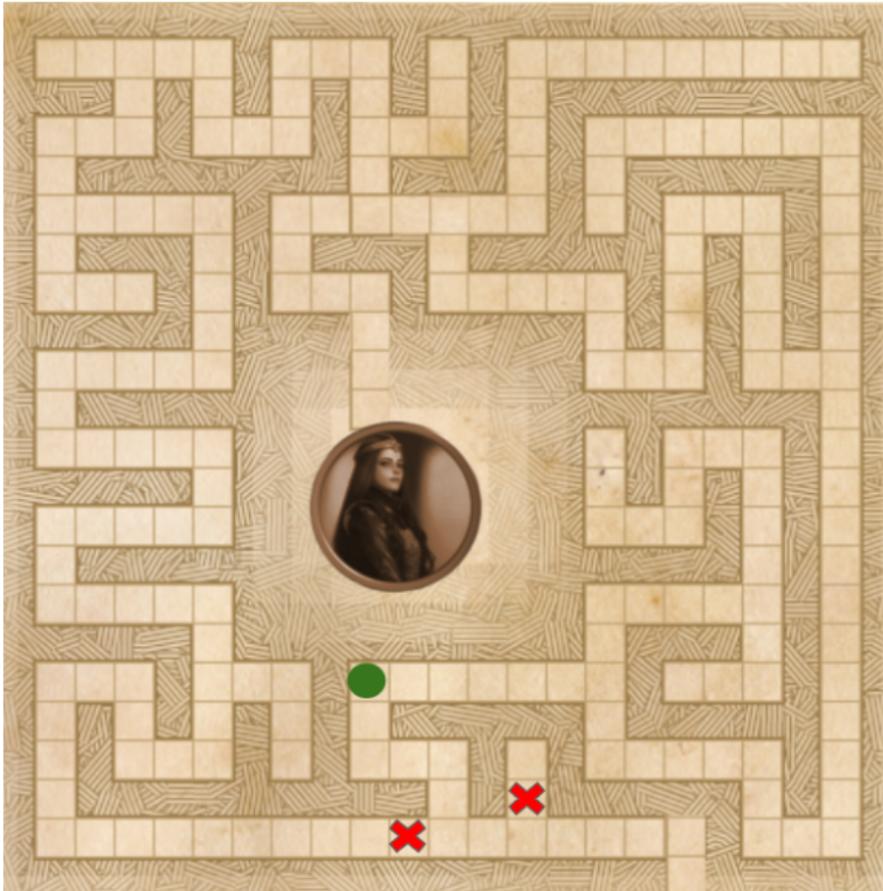
○ To the left

○ To the right

○ Straight ahead

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)

Etter del 31   Gå til del 30 (The Maze)

The metal gate

Beskrivelse (valgfritt)

There is a metal gate blocking your way. There are letters on one of the pillars. Answer this *
question to get past the gate. "What is a different word for smart?"

Kort svartekst

Etter del 32   Gå til del 33 (The Maze)

The Maze

Beskrivelse (valgfritt)

You got past the gate - Good job! Now then - which way? *
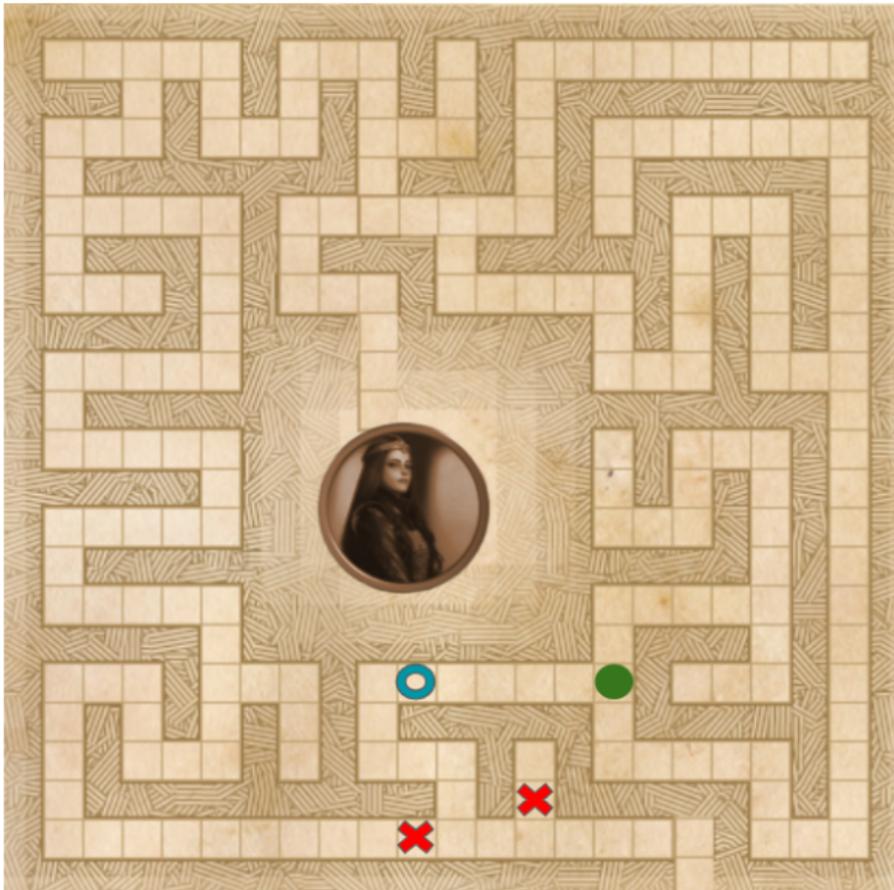
○ To the left

○ To the right

○ Straight ahead

○ Straight down

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)

Etter del 34   Gå til del 33 (The Maze)

The bushes here are too big -you can't get through. Choose a different way!

Beskrivelse (valgfritt)

Etter del 35   Gå til del 33 (The Maze)
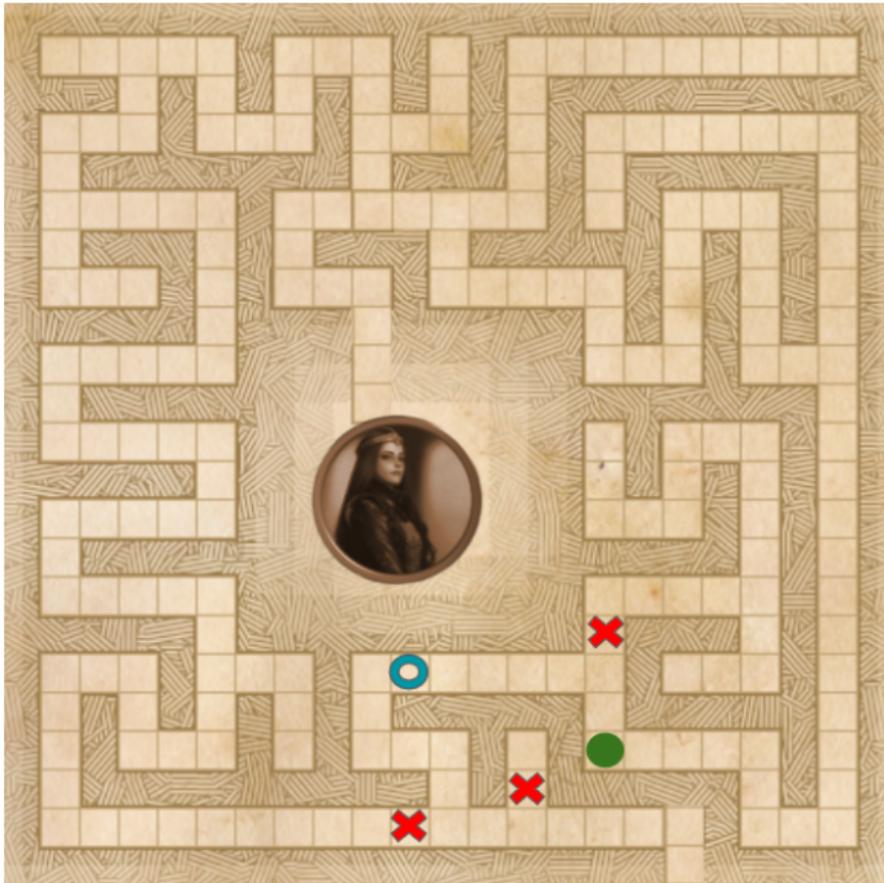
The Maze

Beskrivelse (valgfritt)

Which way? *

- ○ To the left
- ○ To the right
- ○ Straight ahead
- ○ Straight down

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)

Etter del 37   Gå til del 36 (The Maze)

The Maze

Beskrivelse (valgfritt)

Which way? *
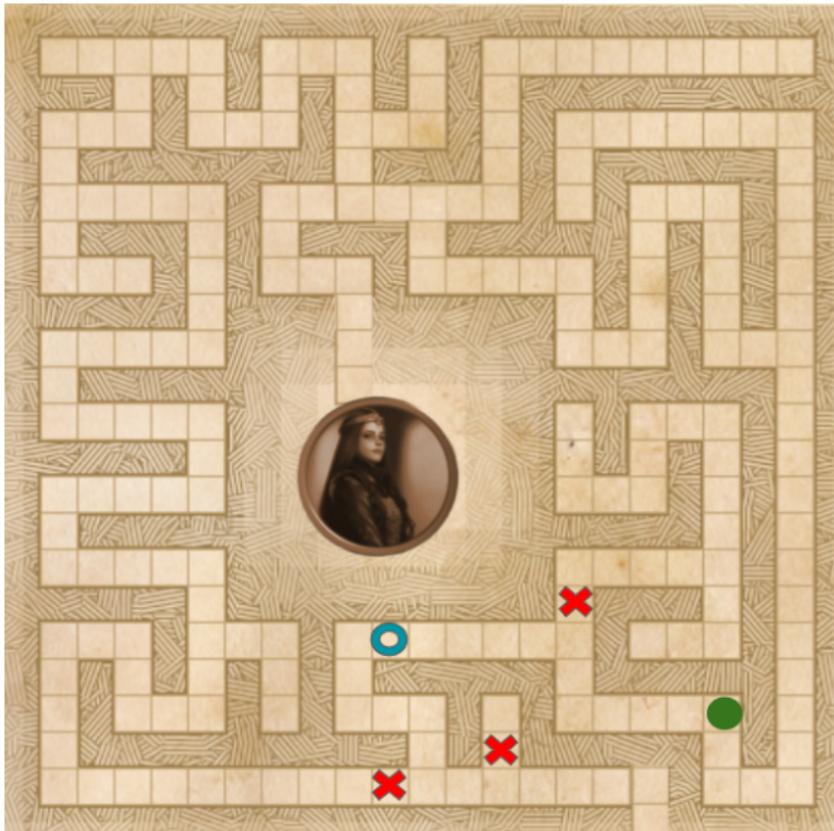
○ To the left

○ To the right

○ Straight ahead

○ Straight down

Etter del 38   Fortsett til den neste delen

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)

Etter del 39   Gå til del 38 (The Maze)   ▼
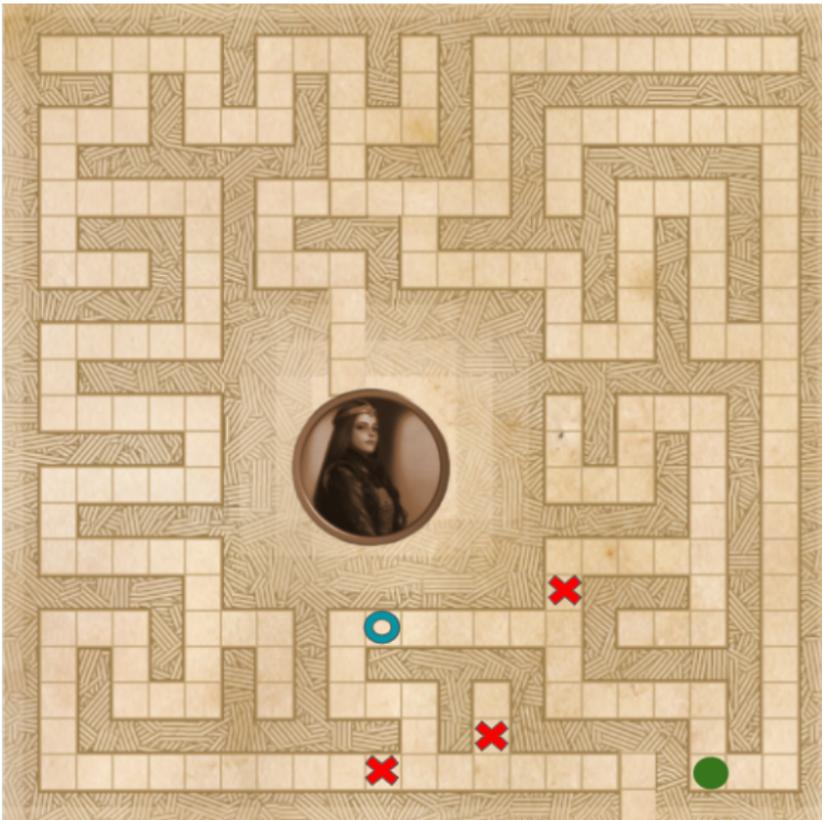
The Maze

Beskrivelse (valgfritt)

Which way? *

○ To the left

○ To the right

○ Straight ahead

○ Straight down

163

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)

Etter del 41   Fortsett til den neste delen

The metal gate

Beskrivelse (valgfritt)

There is a metal gate blocking your way. There are letters on one of the pillars. Choose the *
right word for the sentence to get past the gate. "The arrow was going _____ the window."

○ to hit

○ to shiver

○ to decide

Etter del 42   Fortsett til den neste delen

Good try! To shiver means " å skjelve" in Norwegian. Try a different word.

Beskrivelse (valgfritt)

Etter del 43   Gå til del 42 (The metal gate)

Good try! To decide means "å bestemme" in Norwegian. Try a different word.

Beskrivelse (valgfritt)

Etter del 44   Gå til del 42 (The metal gate)

The Maze

Beskrivelse (valgfritt)

You got past the gate - Good job! Now then - which way? *
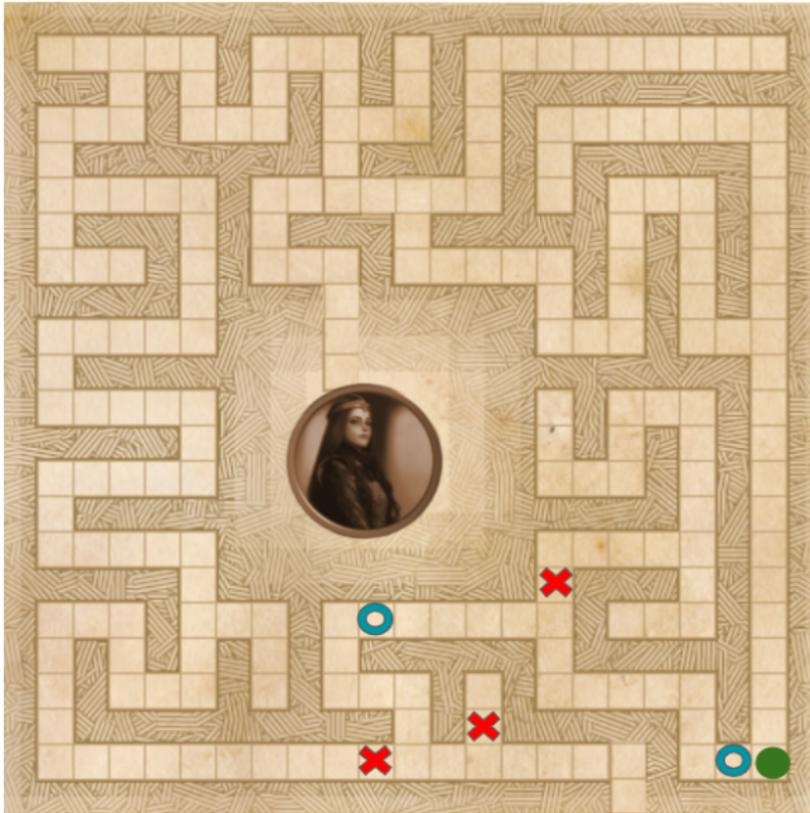
- ○ To the left
- ○ To the right
- ○ Straight ahead
- ○ Straight down

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)

Etter del 46   Gå til del 45 (The Maze)
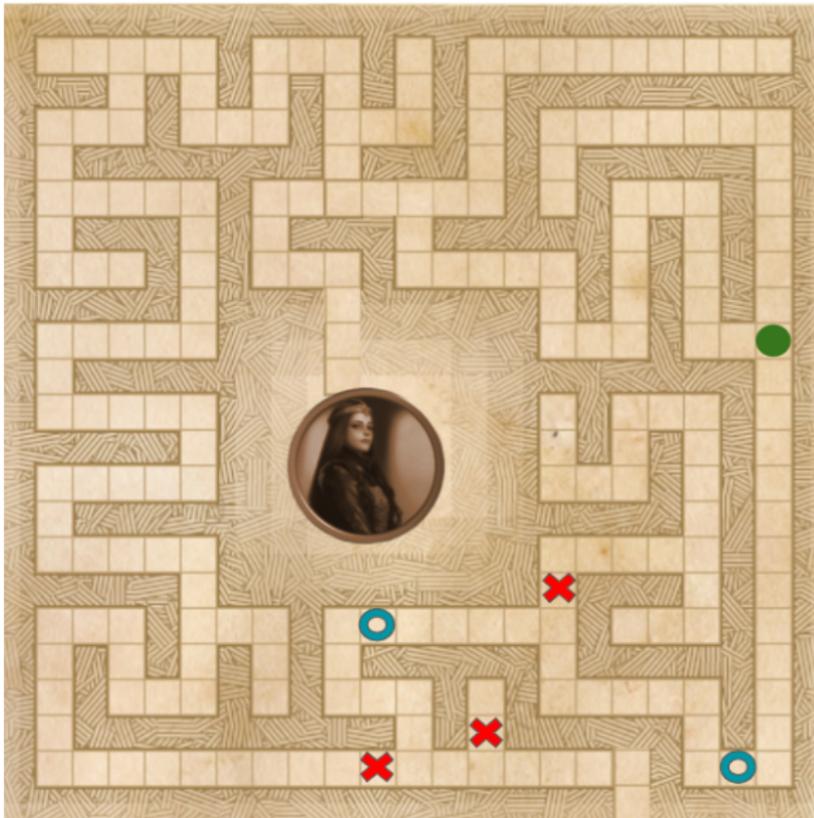
The Maze

Beskrivelse (valgfritt)

Which way? *


○ To the left

○ To the right

○ Straight ahead

○ Straight down

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)

Etter del 48   Gå til del 47 (The Maze)

There are a lot of guards standing in this path. Choose a different way!

Beskrivelse (valgfritt)

Etter del 49   Gå til del 47 (The Maze)

The Maze

Beskrivelse (valgfritt)
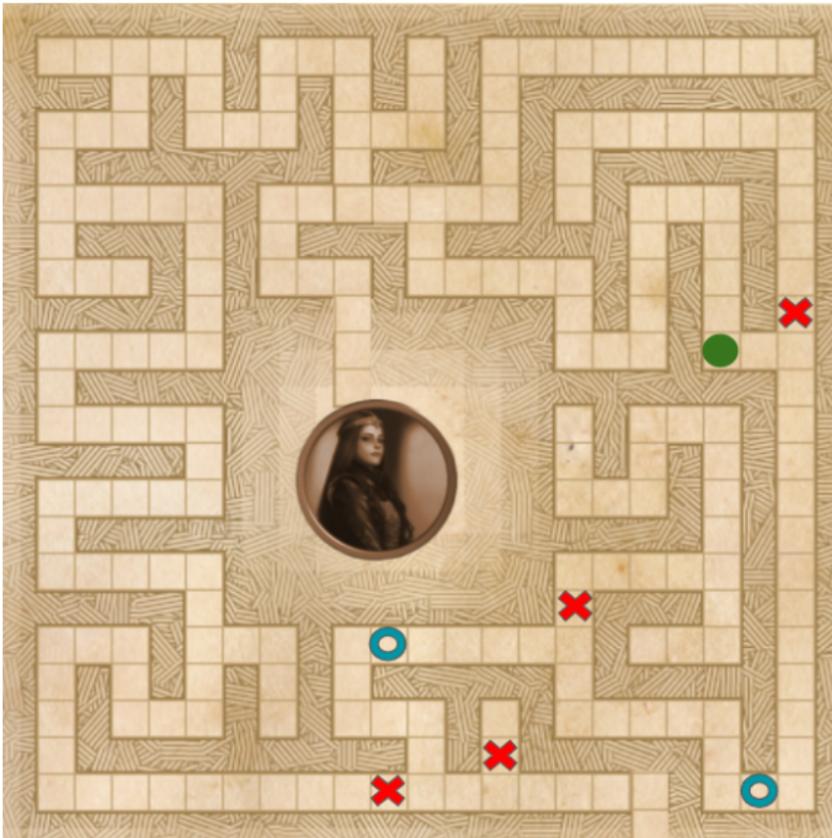
Which way? *

○ To the left

○ To the right

○ Straight ahead

○ Straight down

Etter del 50   Fortsett til den neste delen

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)
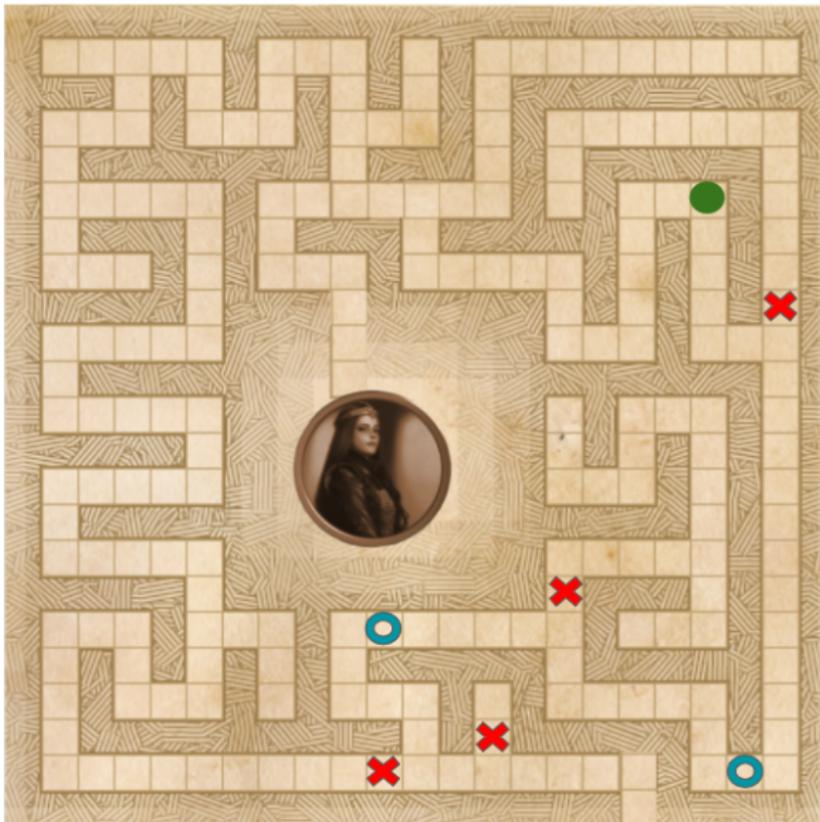
The Maze

Beskrivelse (valgfritt)

Which way? *

○ To the left

○ To the right

○ Straight ahead

○ Straight down

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)

The Maze

Beskrivelse (valgfritt)

Which way? *
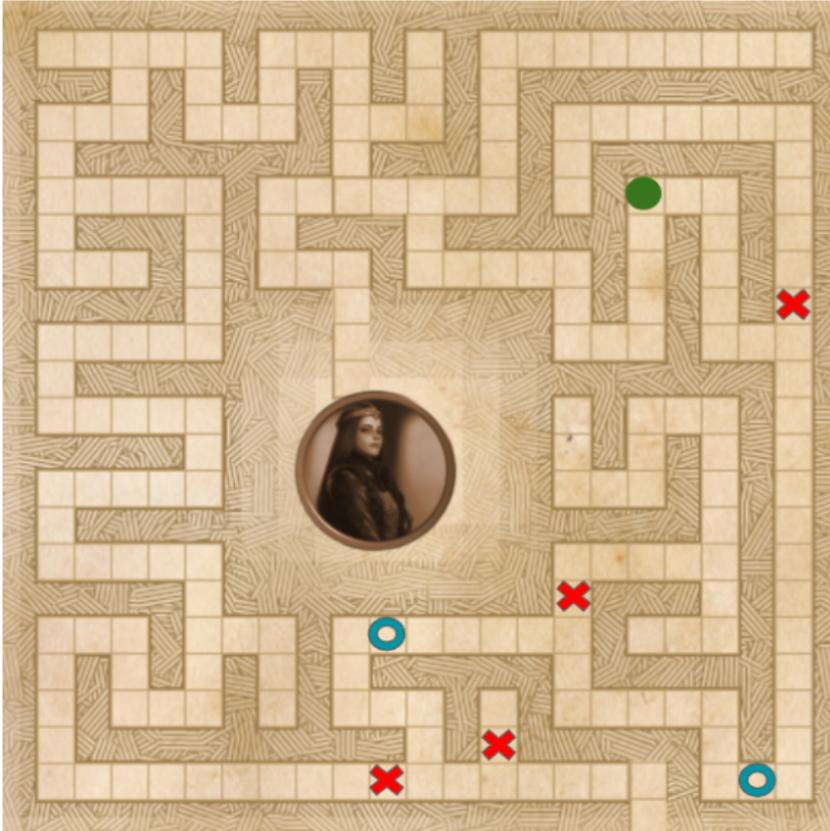
○ To the left

○ To the right

○ Straight ahead

○ Straight down

Etter del 54   Fortsett til den neste delen

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)

The metal gate

Beskrivelse (valgfritt)

There is a metal gate blocking your way. There are letters on one of the pillars. Answer this question to get past the gate. "Which of these words means you have just enough of something?" *

○ eventually

○ exactly

○ surely

Good try! Eventually means "eventuelt" or "til slutt" in Norwegian. Try a different word!

Beskrivelse (valgfritt)

Etter del 57   Gå til del 56 (The metal gate)

Good job! Surely means "sikkert" in Norwegian. Try a different word!

Beskrivelse (valgfritt)

Etter del 58   Gå til del 56 (The metal gate)

The Maze

Beskrivelse (valgfritt)

Good job - you got past the gate! Now then - which way? *
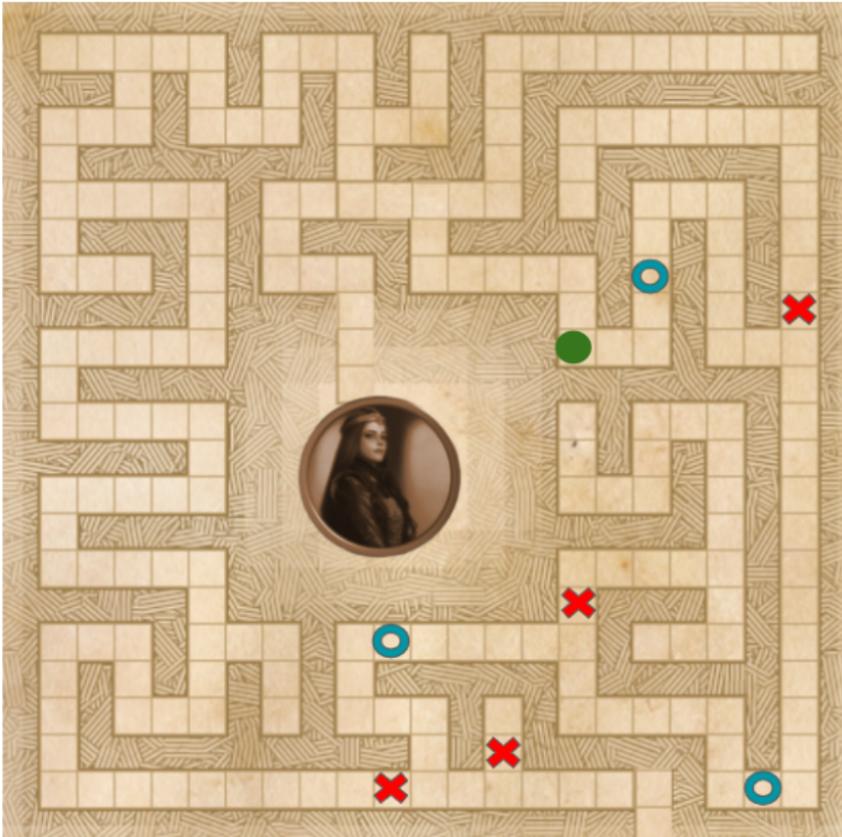
- ○ To the left
- ○ To the right
- ○ Straight ahead
- ○ Straight down

Etter del 59   Fortsett til den neste delen

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)

The Maze

Beskrivelse (valgfritt)

Which way? *
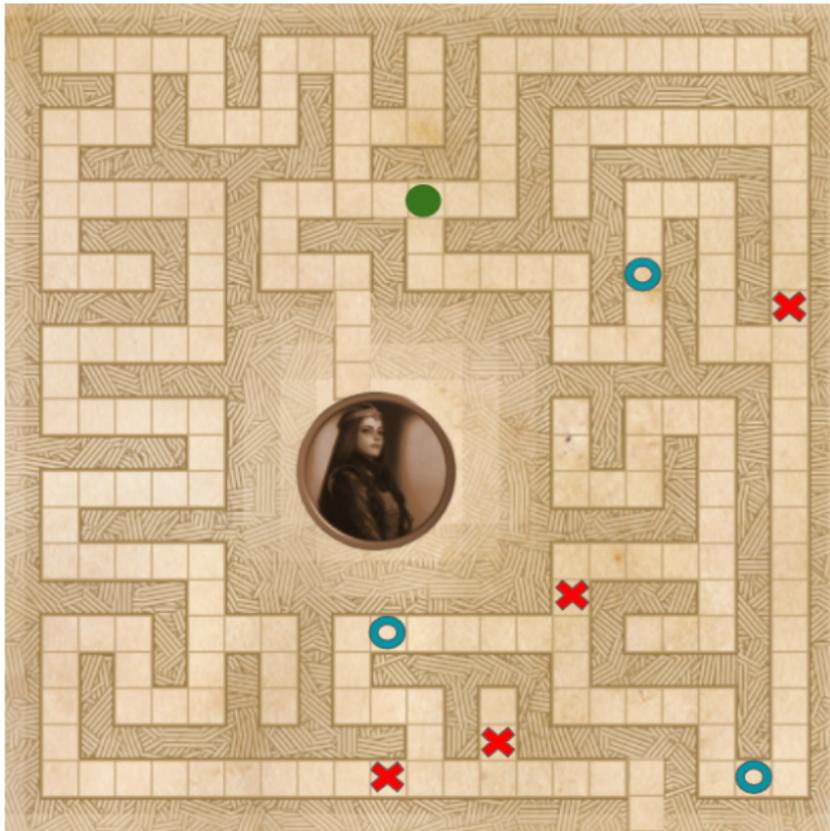
○ To the left

○ To the right

○ Straight ahead

○ Straight down

Etter del 61   Fortsett til den neste delen

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)

The bushes here are too big -you can't get through. Choose a different way!

Beskrivelse (valgfritt)

Etter del 63   Gå til del 61 (The Maze)
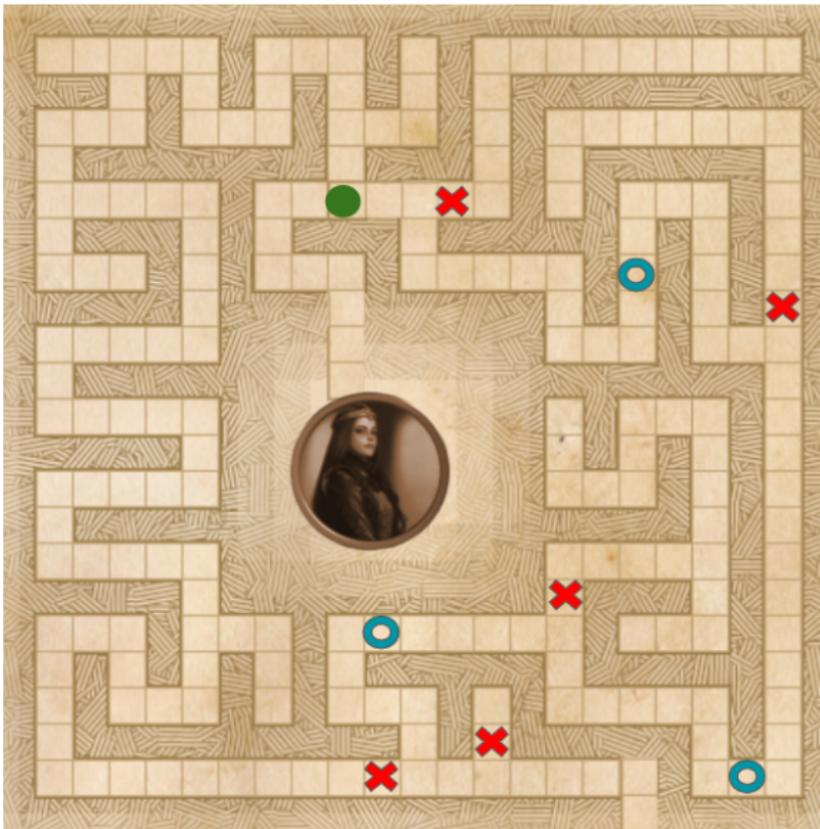
The Maze

Beskrivelse (valgfritt)

Which way? *

○ To the left

○ To the right

○ Straight ahead

○ Straight down

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)

Etter del 65   Gå til del 64 (The Maze)

There are a lot of guards standing in this path. Choose a different way!

Beskrivelse (valgfritt)

Etter del 66   Gå til del 64 (The Maze)

The Maze

Beskrivelse (valgfritt)
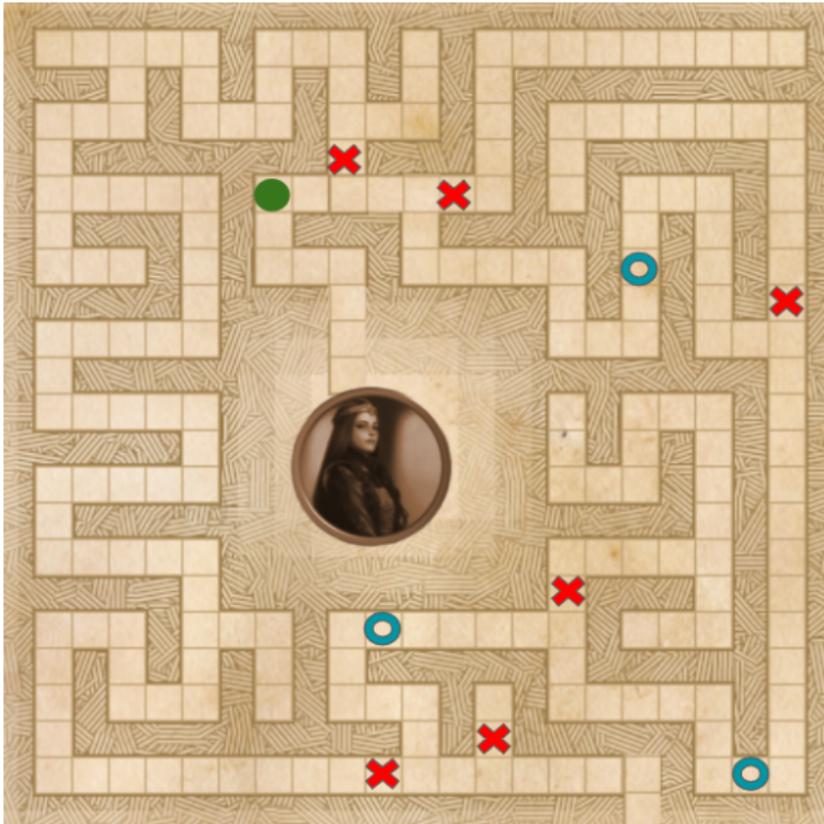
Which way? *

- ○ To the left
- ○ To the right
- ○ Straight ahead
- ○ Straight down

Etter del 67   Fortsett til den neste delen ▾

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)

The Maze

Beskrivelse (valgfritt)
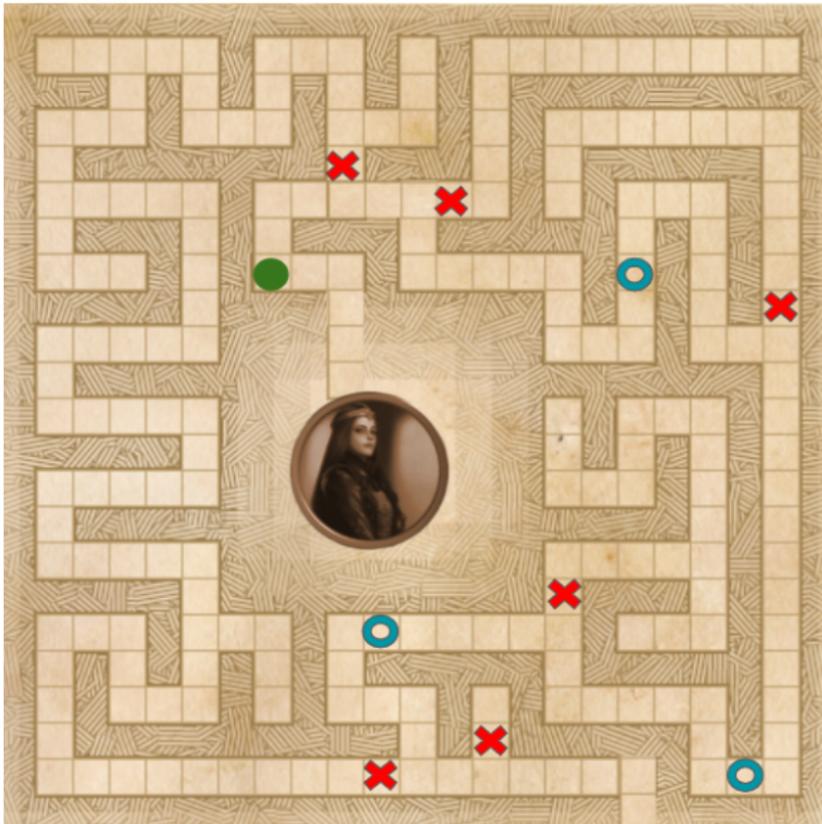
Which way? *

○ To the left

○ To the right

○ Straight ahead

○ Straight down

Etter del 69 Fortsett til den neste delen

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)

179

The Maze

Beskrivelse (valgfritt)

Which way? *
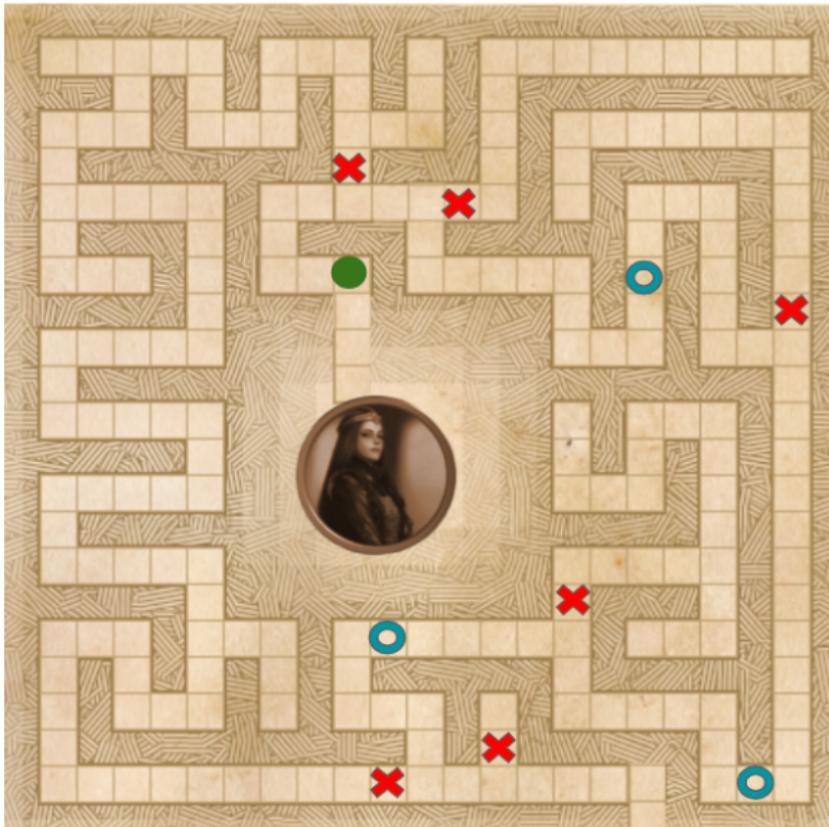
○ To the left

○ To the right

○ Straight ahead

○ Straight down

Etter del 71   Fortsett til den neste delen

Oops! That is the wrong way, try a different path!

Beskrivelse (valgfritt)

The metal gate

Beskrivelse (valgfritt)

There is a metal gate blocking your way. There are letters on one of the pillars. Answer this riddle to get past the gate. "You see me when the light is out, in rain and darkness I am gone. I'll follow you all day around, at night me and the dark are one." *

Kort svartekst

Etter del 73   Fortsett til den neste delen

The Queen

Ingrid walks silently, until she is right in front of the Queen. Then, she carefully opens the flask and throws the potion in the Queen's face...

Appendix 5: Physical materials (First phase)
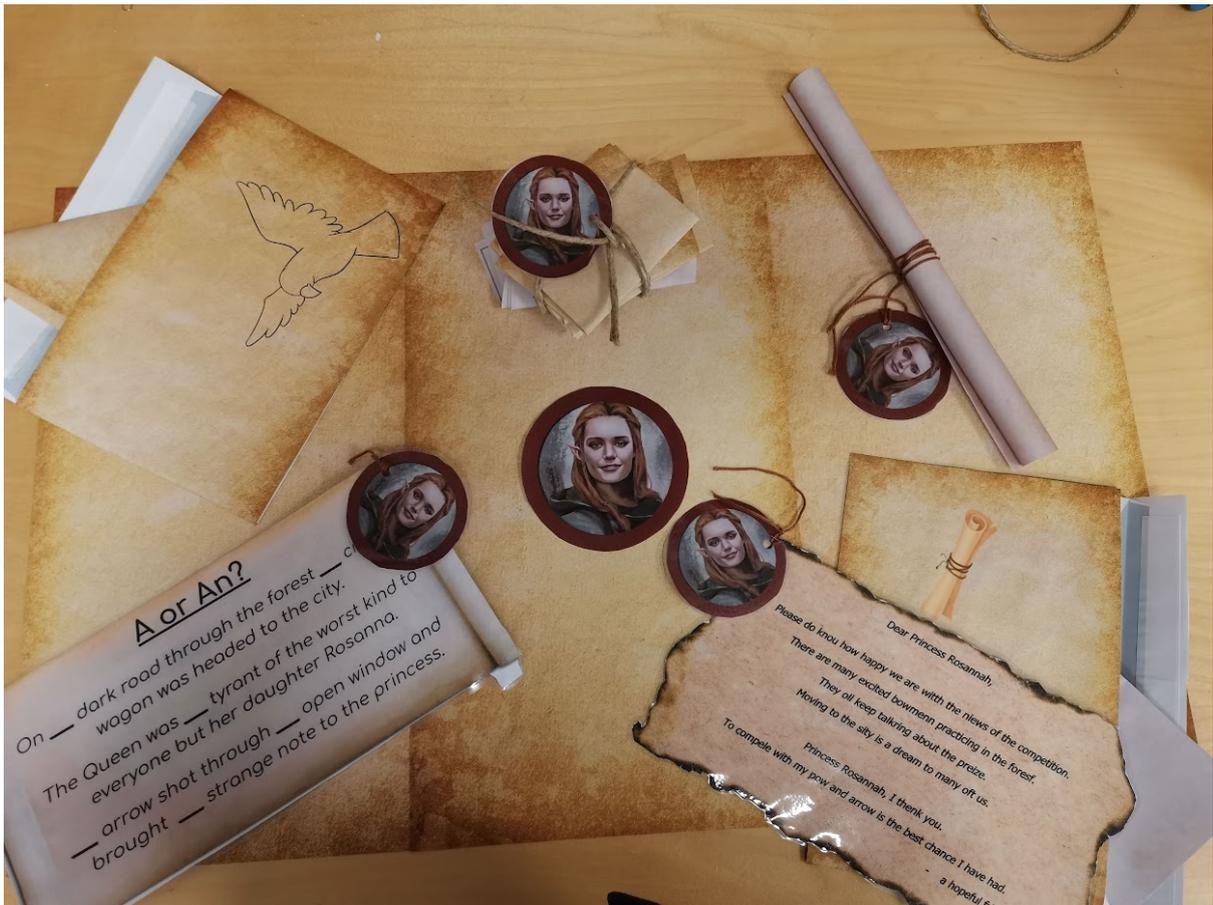
Appendix 5.1 The common area mat

Appendix 5.2 The first task

A or An?

On ___ dark road through the forest ___ creaky wagon was headed to the city.

The Queen was ___ tyrant of the worst kind to everyone but her daughter Rosanna.

___ arrow shot through ___ open window and brought ___ strange note to the princess.

A or An?

a was used ⬛ times.

an was used ⬛ times.

$\underline{a} = 4 \times$ ⬛

$\underline{an} = 3 \times$ ⬛

$\underline{a} + \underline{an} =$ ____

Appendix 5.3 The second task

Dear Princess Rosannah,

Please do knou how happy we are witth the niews of the competition.

There are many excited bowmenn practicing in the foresf.

They oll keep talkring about the preize.

Moving to the sity is a dream to many oft us.

Princess Rosannah, I thenk you.

To compele with my pow and arrow is the best chance I have had.

- a hopeful friend
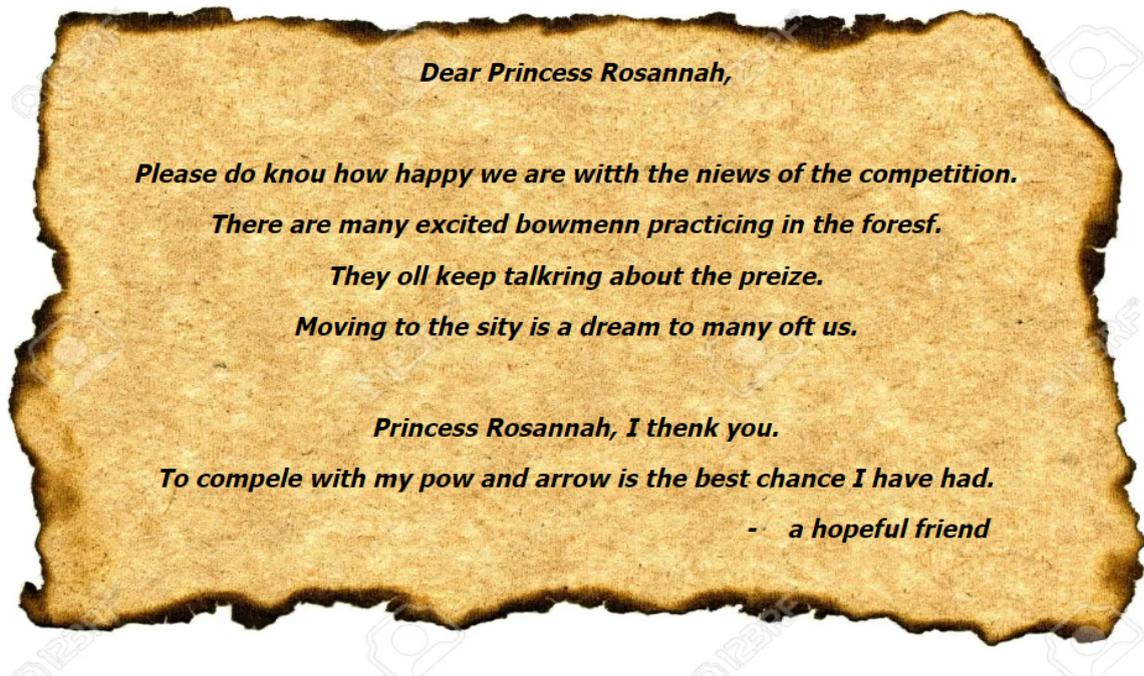
Appendix 5.4 The third task

The letter in the envelope:

The red feather
will let you know
when you are in
the right place
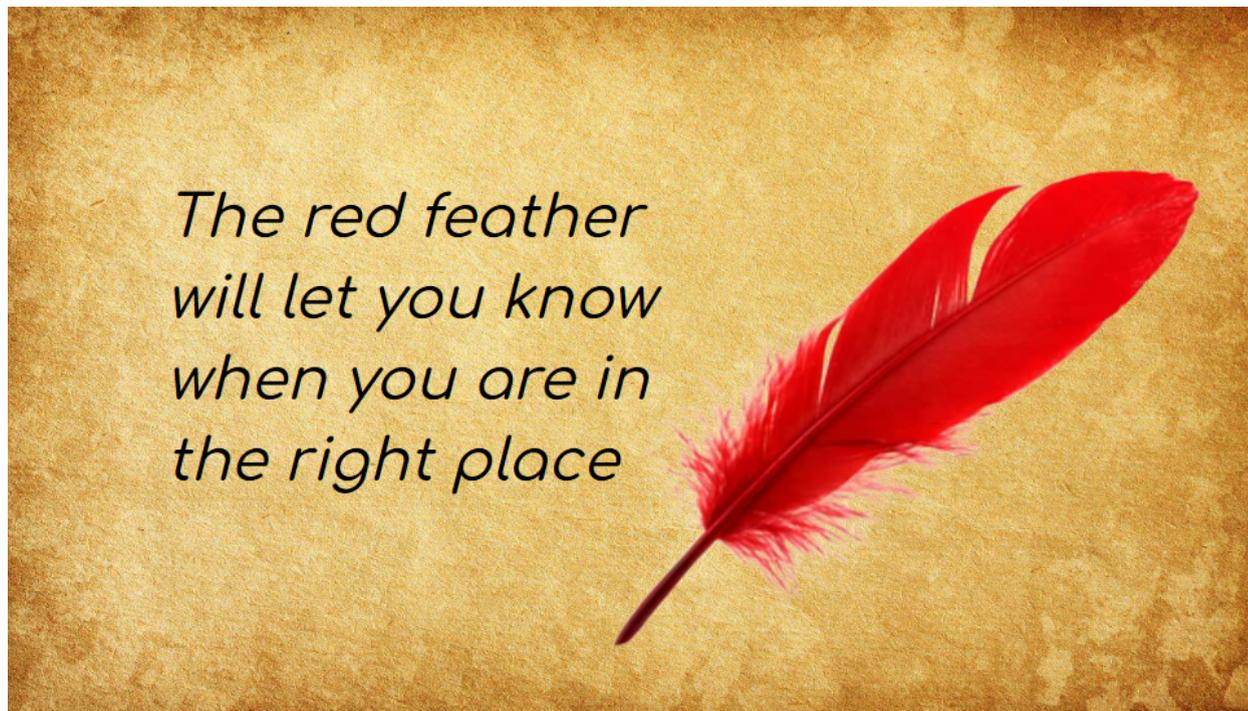
The task:

> the fearless princess sneaks from the castle because of the note she goes to the stables to find her dear horse named nina rosanna rides in the dark through the silent forest and can only hear the sound of hooves after a while she sees a hut the princess quietly walks to the door and sees that it has a painting of red wings on it she opens the door and finds an unusual box with numbers on it next to the box is a stack of papers and a note

Appendix 5.5 The fourth task

The task:

Rearrange the letters into words. The pink letters will reveal the keyword.	
Example: BWO NAD RWARO	___ ___ _____
EILV AWRDZI	____ ■_____
SACT A LPESL	_■__ _ _____
AKYRCE OGNWA	_____ ____■
LIAEFD ETBUD	_____ ■____
The keyword is: _ _ _ _	

Images used as hints:

"Why did i even try to compete....
I should have known I would not win..."
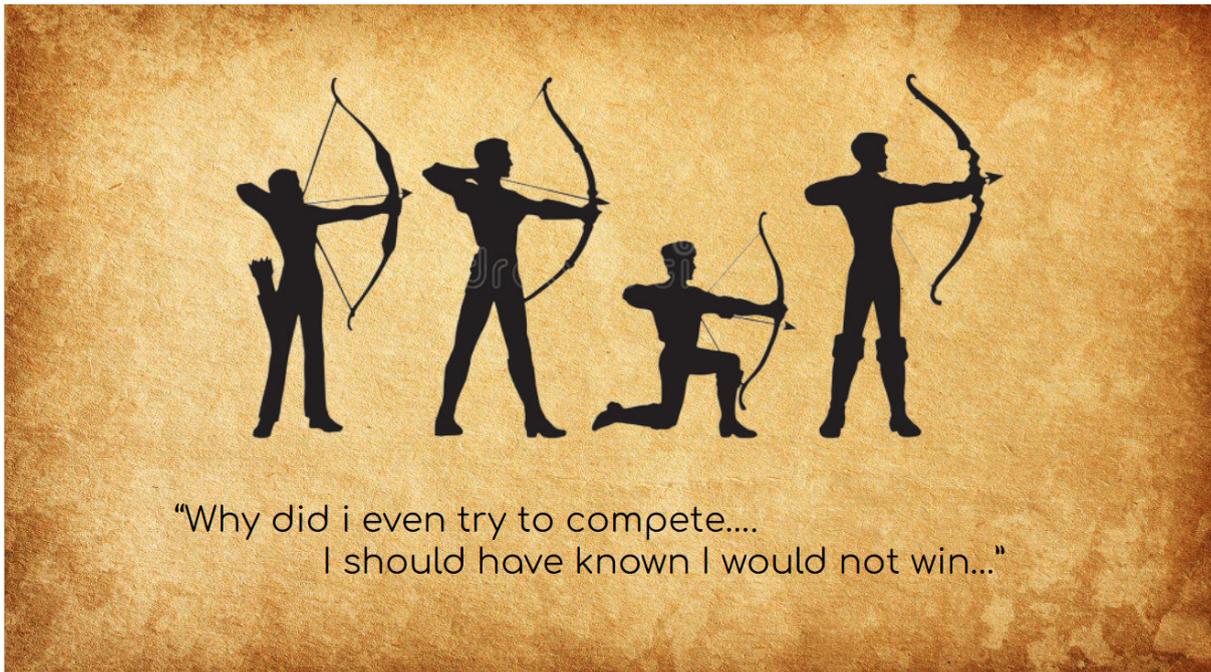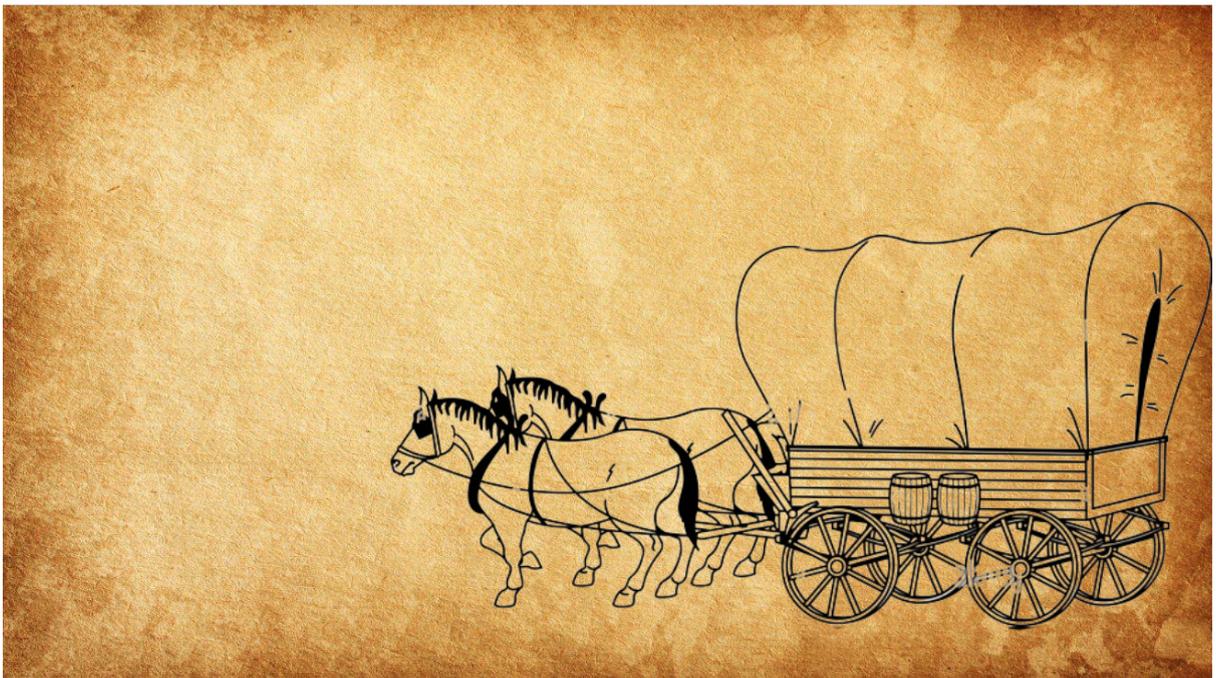
Appendix 6.1 The common area mat/map

Appendix 6.2 The first task

Task instructions:

Open one envelope at a time.

Each envelope has parts of 2 sentences.

You only need one sentence from each envelope.

Rosanna needs to move the wand the right way.

The symbols are the wand movements.

Each symbol has a number.

Cipher note:

The sentence mat:

The sentences. These were cut out and the corresponding number symbols were on the back of each sentence part.:

sentence						
1st Right	a woman		saw a magic wall		hiding a cave		across the river
1st Wrong	a wizard		decided to help		the people that are		suffering from a sickness
2nd Right	this clever trick		was		the explanation		that she hoped for
2nd Wrong	the tired bowman		sat		by the tree		and ate an apple
3rd Right	she shivered		when she noticed		a shadow		behind her
3rd Wrong	The boy decided to		look in the attic		for the book		that would surely help

Appendix 6.3 The second task

Appendix 6.4 The third task

I had almost lost all hope of ever seeing my _ _ _ _ _ _ _ _ (TGHDEURA) again. Then, suddenly, I saw the book about Molag - Bal. It was hidden away on a _ _ _ _ _ (HLFES) in the library. It was as if I was meant to _ _ _ _ _ _ (NETICO) it. It was _ _ _ _ _ _ _ (YTECLXA) what I needed.

Molag - Bal seems pleased with me so far. My plan is to put the Queen under my control. Then, it will _ _ _ _ _ _ (ESLUYR) be easy to cause the _ _ _ _ _ _ _ (OLETRBU) that he desires. My plan will _ _ _ _ _ (UEASC) them great pain - it will be their dear Queen that makes them _ _ _ _ _ _ (FFURSE).

I have been _ _ _ _ _ _ _ _ (MERIDANG) about her a lot. It is still so painful. I hope that this next event will make him happy _ _ _ _ _ _ (HEUGON). It is a _ _ _ _ _ _ (ERCELV) plan. The archery competition promises a great prize that will _ _ _ _ _ (EVERN) come true. I've made sure of that.

It is happening. He has _____ (IEDDEDC) to give me one last task. I will finally see her after all these years. All these plans will _____ (EEALULNVTY) pay off. I am so _____ (TIRDE) of the lies. He has _____ (KEDSA) for the Queen to be given to him. Her pain will be enough.

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Appendix 8: Student interviews

Appendix 8.1 After the first phase

First group:

1. The students stated that they enjoyed all of the tasks, but task number 4 mentioned the most. They also mentioned that the element of physically looking for clues was very fun.
2. The task that focused on a/an was challenging and they spent quite a bit of time on overcoming it.
3. The students described the lesson with adjectives such as interesting, fun and epic. They stated that it was a new activity they found engaging and fun.
4. The guide was ok, easy to navigate.
5. One of the students said the following quote regarding the lesson: "It was cooler than Kool-Aid."

Second group:

1. The students in this group stated that they enjoyed task 4 and the first task the most. These students also commented that looking for clues was an exciting addition to the activity.
2. The task that they enjoyed the most (a/an) was also the task that they struggled with the most. This is due to the discussion regarding the rules of a/an, which prompted the students to retrieve their english textbook and resolve this together.
3. The lesson was described as fun - the students enjoyed working together as a group. They noted that sitting on the floor was not optimal and also mentioned that it could become quite noisy at times.
4. The guide itself was ok, but they skipped past a clue in their excitement.

Third group:

1. The majority of students in this group agreed on task 4 as their favorite. One of the students also enjoyed task 2 (mistakes). The physical aspect of looking for clues was mentioned positively yet again.
2. The tasks that the students mentioned as challenging were task 2 (mistakes).
3. The lesson was described as fun, different and the students said that it was a fun way to learn.

4. The group had no issues with the guide.

5. The students mentioned that they had issues dividing the workload required to solve the tasks amongst themselves, as well as talking over each other. One of the students also mentioned that sometimes it was difficult to help in solving the puzzle, due to the task being "upside down" when the other students in the group worked on it.

Fourth group:

1. The students mentioned all the tasks except the task that required punctuation, but mentioned task 4 more than the others. They stated that this was due to the fact that it required them to think outside the box and use their problem solving skills. This group also mentioned that the physical clues were a fun addition to the lesson.

2. The students stated that they did not struggle with any tasks specifically, their issue was getting excited and not being careful enough to solve the puzzles efficiently due to not paying attention.

3. The group thought that it was a fun and new way to learn and asked whether this type of lesson could be implemented in other subjects, such as math or science.

4. The guide was easy to follow.

Fifth group:

1. The students favored task 4 as well as mentioning that looking for clues and working together in a group was very enjoyable.

2. They felt that task 4 was the most challenging.

3. The lesson was described as a fun, new way to learn. They also noted how this type of lesson required them to stay focused in order to complete the puzzle.

4. The guide was described as very neat and tidy.

Appendix 8.2 After the second phase

First group:

1. The students stated that the maze was their favorite, due to it having different types of tasks within as well as some challenges. They also enjoyed physically looking for clues in the third task, as well as the third task itself. They mentioned that it was fun but challenging at the same time.

2. They mentioned how they felt that the third task was challenging. The sentences surrounding the words helped a bit, but it was still difficult to rearrange the letters into words.

3. The students mentioned that they really enjoyed the story and the character development they could observe in it. They found the story very exciting.

4. They had no comments regarding the digital guide.

5. They liked getting the hint about crossing out letters in the third task. They mentioned again that compared to the fourth task in the previous lesson, the sentences surrounding the scrambled words helped when they started figuring out strategies.

Second group:
1. All of the students really, really liked the maze. Three students also mentioned the second task (potions) because they really liked solving riddles.

2. The students had various feedback regarding three of the tasks. They felt that the second task, although was very fun, ended up being a little bit too easy to solve. They really liked solving the word scrambles in the third task, but some struggled with remembering word classes, which was what the digital guide required of them. Their feedback regarding the maze was that they would have loved it if it was even larger and more difficult, had more tasks within and had hidden tunnels within.

3. They thoroughly enjoyed the lesson and they stated that listening to the story and seeing the images in the digital guide was their highlight.

4. The guide was easy just like last time. The only issue was with the first task.

5. They really liked that the third task had several different letters within it, which meant they could divide the work between them. They also said that they would have liked to have more scavenger hunt elements like last time.

Third group:
1. All of the students in this group mentioned the maze as their absolute favorite task. They mentioned how they enjoyed the small puzzles within and their variety. They also mentioned that even though it might have been frustrating then and there, the implemented dead ends in the maze made it more fun. The third task, the letters, was also mentioned by several students. They said that although it was challenging, it was also really fun to solve. An additional note was that this was extra fun due to the fact that this task had a scavenger hunt element.

2. The task that this group mentioned that they struggled with the most was the third task. They struggled to solve the scrambled word puzzles, but mentioned that the sentences surrounding the words helped quite a lot.

3. The students said that the lesson was very enjoyable. They mentioned that they thought the story was very exciting and it was really interesting to learn more about the characters in the story and how they developed.

4. The only issue with the guide was the first task. Everything was fine besides that.

5. In the third task, it really helped when they got a hint about crossing out letters as they were trying to solve the word puzzles. They felt stuck for a short while, so this suggestion really helped them out

Fourth group:

1. The students stated that they enjoyed the maze the most. It was fun for them to get to do a task by themselves even though the other tasks were fun as a group. They described that the maze felt like a digital game. The third task was also fun because almost everyone ended up with their own letter that they tried to figure out, so they didn't have to sit all together around one task.

2. They struggled with the first task, the mistake in the guide made them quite confused, so they felt as if they were stuck for a while. It was also a bit difficult with the third task in the beginning, but it got faster once they got a hint about starting to cross out letters on the paper.

3. They felt that the lesson was really fun. The parts where the story was read aloud were really enjoyable, feeling as if they were there in the moment as they solved the tasks. The images also helped to visualize the story as it was told.

4. The guide was ok, except for the part in the beginning that really made them feel stuck for a while.

5. The students wished there were more scavenger hunt elements like last time.

Fifth group:

1. The group stated that they enjoyed all the tasks, but the maze was a favorite amongst all the students in the group. They stated that the third task with the letters was really fun too, word scrambles were a type of puzzle that they enjoyed a lot.

2. They struggled with the word classes in the third task. There was confusion about the first task that stopped the discussion a bit and made it difficult to start it up again. They concluded that the first task is the one that they struggled the most with.

3. The students said that the lesson was really fun and different. They enjoyed that it changed up a bit, from being very focused and talking about how to solve the task, to sitting and listening to the story being read aloud.

4. The guide was ok except for the part in the first task.

Appendix 9: Teacher observations

Appendix 9.1 During the first phase:

General notes :
- Excited, curious
- It was smart to choose who has the chromebook in each group
- Students were good at delegating work to each other in order to stay fair (retrieving, sorting, reading out loud etc)
- Supported each other, motivated to proceed and discover what the next task was
- Focused and engaged when working with tasks
- Students enjoyed the mix between the physical and the digital elements
- Used the physical materials, wrote on them, marked suggestions for each other
- Did not use the Chromebooks for anything else besides the guide
- Some groups need to be changed
- Always asked for hints after having tried at least once to solve it themselves

Questions:
- "Can you give us a hint here?"
- "What do we do here, can you explain so we're sure"

  1st task questions:
    - Amongst themselves: "What was the definition for it?"
    - "What was the rule - can you give us an example?"

- "Can we get a textbook to check? "Is it allowed?"

2nd task questions:
- Amongst themselves: "It can be several of these, let's look over and see which ones it can be"

3rd task questions:
- "There are several places you can put the periods"
- "What if it's a comma? Is it commas here or periods?"

4th task questions:
- "What's the task here, what does the task want us to do?"
- Amongst themselves: "How are we to figure out what the words are?"
- After receiving a hint or an explanation "Oh, of course, it makes sense now"

Guide:
- Overall ok
- Lost information in the headings
- Some groups too excited, missed information

Appendix 9.2 During the second phase:

General notes:
- Curious, eager
- Supported each other, motivated to proceed and discover what the next task was
- Students enjoyed the mix between the physical and the digital elements
- Changed logistics from 1st lesson to sit at tables in order to gain better overview
- Students were good at delegating work to each other in order to stay fair (retrieving, sorting, reading out loud etc)
- Always ask for hints after having tried at least once to solve it themselves
- Focused and engaged when working with tasks
- Used the physical materials well. They enjoyed more pictures on the common area mat this time.

- Always asked for hints after having tried at least once to solve it themselves
- Maze good as a final task, calm. Working at their own pace. Reset the environment. Very quiet.

Questions:
- "What do we do here, can you explain so we're sure"
- "Can you give us a hint here?"
- "Can you give us suggestions as to what we should do here?"

1st task:
- Amongst themselves: "What are we gonna do with all these symbols?"
- "How is it gonna add to be 20?"
- Uncertain of how to progress in the beginning
- Did not notice the instructions or did not read them clearly
- Too many physical"parts" to this task, got confusing for them logistically

2nd task:
- Finished very quickly
- Delegated amongst themselves very efficiently

3rd task:
- Context around the words helped for some, but not for all
- Since it was vocabulary they are not used to actively using they still struggled
- "Can you help me figure out how to do it?"
- After getting hints about crossing out letters "Ah, it makes more sense now. Ok."

4th task:
- Worked in their own tempo, scaffolded when needed
- "Can you give me a hint with this riddle?"

Guide:
- The only issue was with the first task, the students got frustrated but it was quickly resolved so they were able to gather themselves after some encouragement
- It was a big amount of text compared to the previous guide. Worked out because it was read out loud and then they were asked questions to check if they understood it all