



Universitetet
i Stavanger

FAKULTET FOR UTDANNINGSVITENSKAP OG HUMANIORA

MASTER'S THESIS

Program:

Grunnskolelærerutdanning 1-7

Semester: Autumn

Year: 2023

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Title of the thesis:

Teaching English grammar to ESL learners through physically active learning methods

Key words:

PAL, EFL, grammar teaching, learner
experience

Word count: 22 002

Number of pages: 94

Number of appendices: 7

Stavanger, 15th of December 2023

Abstract

This study focuses on learning grammar through physically active learning (PAL) methods in the English foreign language (EFL) classroom. More specifically, the study focuses on whether the PAL method is an effective method to use when teaching EFL learners about verb tenses, and whether the learners enjoyed learning through the method. In short, PAL is a learning method which combines learning with physical activities. PAL is, for the most part, a known phenomenon in mathematics and is also used in some other subjects. Previous research on PAL indicates positive educational outcomes and suggests that it is a learning method that creates excitement and enjoyment among learners. However, little to no research has been conducted on utilizing PAL in English lessons, especially when it comes to teaching English in EFL classrooms. The current study surrounds one of the most difficult topics when it comes to English language learning, namely verb tenses. It looks at whether teaching verb tenses through physical activities is efficient as well as enjoyable for learners in EFL classrooms.

To address the research gap, the current study utilized a mixed methods research design. The research was based on two classes in Year 5. The learners in both classes completed a pre-test before one class engaged in a 3-lesson PAL project and the other class engaged in a 3-lesson non-active learning (NAL) project (non-active here refers to a lack of organised physical activity). The learners then completed a post-test and a delayed post-test. Both classes got to experience the PAL project and the NAL project, and at the very end, both classes responded to a survey looking at how the learners experienced learning through PAL and NAL methods. Last, two groups of three learners participated in group interviews focusing on their experiences from both lessons.

The study's findings coincide with previous research looking at learning other subjects through PAL and show that the educational outcomes were similar between the two groups. Most of the learners found PAL to be fun and engaging, and they experienced positive learning outcomes. There were a few learners who preferred learning through NAL. However, PAL created variations that all learners agreed were missing from English lessons. The study works with the voices of the learners and is important to keep in mind when working with classroom practices.

Acknowledgements

First, I would like to thank my supervisor, Cecilie Waallann Brown, for her help and guidance in the writing process and the support I have received throughout this year. I would also like to express gratitude towards the learners who contributed to this study and their parents for their willingness to let their kids participate. Furthermore, I would like to thank my co-workers for making time and helping me include the study in an otherwise hectic school year. Their willingness to make it work made the project possible. I would like to show my gratitude to my friends and family for their support and patience throughout these semesters. The motivation and encouragement received have been invaluable. Finally, I would like to thank my best friend and roommate, Rebecca McClure, for all the help which allowed me to delve into this project.

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List of Terms

ASK - Active Smarter Kids

CSPAP - Comprehensive School Physical Activity Program

EFL - English as a Foreign Language

LMPA - Low to Moderate Physical Activity

MI - Movement Integration

MVPA - Moderate to Vigorous Physical Activity

NAL - Non-active learning

PA - Physical Activity, movement without academic content

PAAL- Physically Active Academic Learning

PAL - Physically Active Learning

PE - Physical Education

SEFAL - Senter for Fysisk Aktiv Læring

WHO - World Health Organization

1. Introduction

This thesis presents a quasi-experimental study on English as a foreign language (EFL) learners in Year 5 regarding the topic of physically active learning (PAL). More specifically, the study investigates whether the learners' knowledge increases when learning grammar in English through a PAL method. The study also investigates the learners' perspectives when it comes to learning through PAL: Did they feel like they learned something, and did they enjoy learning grammar through a PAL method?

1.1 Physically Active Learning (PAL)

In the past 10 years, physically active learning (PAL) methods have drastically increased in popularity. PAL is a learning method that surrounds a physical approach to learning academic content (Bartholomew & Jowers, 2011, p. 51). In 2016 the World Health Organization (WHO) published a physical activity strategy for the European Region as a result of the increase in sedentary people (2016). The WHO recommend 60 minutes of daily physical activity (2016, p. 19). The Norwegian Directorate of Health (2019) has also recognized the increase in inactive people and recommends that schools and other lines of work, that work with children, should facilitate the joy of movement and promote physical activity. The WHO (2016, p. 19) recommends an activity level of moderate to vigorous physical activity (MVPA), which is appropriate due to findings from Daly-Smith et al. (2018, p. 14). Daly-Smith et al. (2018, p. 14) found MVPA to have the best results on learning outcomes regarding learning through PAL. Daly-Smith et al. (2020, p. 2) highlight how school is a suitable arena for learners to meet the recommended daily physical activity levels because schools reach children from all social, economic, and cultural groups. As a matter of fact, The Norwegian Education Act states that learners in Years 5-7 should have regular physical activity besides the subject of Physical Education. Physical activity should be facilitated for every learner regardless of functional level and should facilitate the experience of joy, mastery, community and variety in the school day (regulations to the Education Act, 2006, §1-1a).

As will be elaborated in section 2.3, the PAL phenomenon has been researched before. The learning outcomes of previous PAL projects have varying results, though the majority of previous research concludes with a minor to moderate increase in learning outcomes after learning through PAL. The previous studies often looked at PAL in the subjects of maths, natural science, reading and spelling in countries where English is the first language, but there is a lack of research looking into PAL as a method for teaching English in the EFL classroom. Especially when it comes to English grammar teaching in the EFL classroom. There is a minority of previous research looking into the learners' perspectives of learning through PAL, specifically regarding perceived learning outcomes. The previous research looking at learners' perspectives often commented on the teachers' perceptions of the learners' perspectives. The few studies working with learners as their primary source of information conclude that PAL is an enjoyable method of learning. The aspects of PAL that the learners enjoyed were the physical approach, the playfulness, the group work, and the variation it created.

The Directorate of Education (2017, p. 16) mentions that learners should have a say in how they want to learn. The learners should contribute to the school's practice and take co-responsibility for the learning community they create together with their teachers. By listening to the learners' concerns regarding how they want to learn, the learners could feel more ownership of the lesson plan and, as a result, feel more excitement about the lesson plan. Skaalvik and Skaalvik (2015, p. 11) elaborate on how teachers need to work with the learners to create teaching that arouses interest, curiosity and excitement.

1.2 Grammar teaching

The topic of explicit grammar teaching is controversial (Munden, 2014, p. 144). The history of language teaching consists of claims and counterclaims for and against teaching grammar (Thornbury, 1999, p. 14; Munden, 2014, p. 145.). As argued by Thornbury (1999, p. 14), “no other issue has so preoccupied theorists and practitioners as the grammar debate, and the history of the claims and counterclaims for and against the teaching of grammar”. One of the counterclaims is the teachers' frustrations over teaching grammar, pointing to it being a

complex topic to teach and that “many children don’t enjoy it much. Some of them actually hate it” (Munden, 2014, p. 145). Claims related to why one should teach grammar comment on the systematic presentation of language and how learners benefit from a tidy language learning process (Munden, 2014, p. 147). Bastone (1994, pp. 3-5) asserts that “language without grammar would be chaotic: Countless words without the indispensable guidelines for how they can be ordered and modified”. Bastone (1994, pp. 3-5) also mentions how grammar is deployed in communication and the close relationship between grammar and discourse.

Another issue discussed in relation to the teaching of grammar is that grammar instruction is perceived as necessary but not enjoyable (Jean & Simard, 2011, pp. 475-478). Previous research looking into attitudes towards grammar teaching found both the learners and teachers viewed grammar teaching as something necessary but boring (Jean & Simard, 2011, p. 478). Munden (2014) suggests that “the dominant view in Norwegian schools is that grammar should be taught through the presentation and practice of rules.” (pp. 146-147). Gardner (2008, p. 39) comments that grammar teaching has negative associations, and a change needs to be initiated. Gardner (2008, p. 39) elaborates on when teachers were asked why they wanted to change their approach to teaching grammar; one teacher responded: “I wanted children in my class to enjoy grammar more. Most of them don’t like rules very much. They find them boring.”.

In the Norwegian context, the Directorate of Education states that grammar should be a topic to work with explicitly and, therefore, settles the debate on whether to teach grammar or not. For example, after Year 7, the English subject curriculum states that learners should be able to “identify sentence elements in various types of sentences and use knowledge of verb conjugation and declension of nouns and adjectives in working on own oral and written texts” and be able to “follow rules for spelling, word inflexion and syntax” (The Directorate of Education, 2020, pp. 7-8). The only competence aim for Year 4 when it comes to grammar is to be able to “follow simple rules for spelling and syntax” (The Directorate of Education, 2020, p. 6). There are no explicit competence aims regarding grammar for Year 2. The reason being the cognitive maturity needed to learn grammar explicitly (Munden, 2014, pp. 154-155). At the same time, while explicit teaching of grammar is mandatory from Year 4,

individual teachers have much freedom regarding what grammar concepts to teach and how grammar should be taught.

Grammar could be perceived by the learners as a boring and frightening topic to work with (Munden, 2015, pp. 151-152). As a result, it would be interesting to investigate whether PAL could have a positive effect on teaching grammar to EFL learners. The grammar concept chosen for the current study is verb tenses; more specifically, simple present, present continuous, simple past and past continuous. Grammar tenses are something the learners often struggle with when it comes to grammar, and present simple and past tense are patterns that are often tested in national tests (Munden, 2014, p. 159).

1.3 Research questions

My personal motivation to investigate PAL for this study is because of the potential it could bring to Norwegian EFL classrooms. Similar to other teachers, the enticing part of PAL is the overall health benefit and the variation physical activities bring to the classroom. Merely looking at the quantitative data could give an insight into whether PAL methods are effective for learning. However, as Dystad et al. (2018, p. 7) comment, if the learners are not engaged or excited about using the method when learning, their participation decreases, and the point of utilizing the method is gone. As a result, the current study also looks at how the learners experienced PAL. The study also wants the learners to address their own learning process and see if the learners considered PAL to be an efficient learning method.

In line with this purpose, the thesis will explore the following research questions;

- Does Year 5 EFL learners' knowledge about the uses of and ability to correctly apply the present simple and the present continuous in sentences develop through PAL lessons compared to NAL lessons, and if so to what extent?
- What are the learners' perceptions of their own learning process and enjoyment of the two lessons after having experienced both?

2. Theoretical background and previous research

This chapter presents theories and previous research on teaching grammar to young language learners and the learning methods of PAL and NAL. First, section 2.1 introduces the central terms used in the current research. This is done to avoid misunderstandings throughout the study. Following this, section 2.2 discusses the topic of teaching grammar to young ESL learners. It looks at the advantages and disadvantages of different approaches to teaching grammar and looks at teaching verb tenses in a Norwegian context. Section 2.3 presents and compares the learning methods PAL and NAL and looks at PAL from the perspective of relevant theory on learning. Lastly, the previous research regarding PAL is going to be presented.

2.1 Central terms

In order to better understand the research, some central terms should be defined. Researchers utilise a multitude of terminology to describe similar phenomena. Commonly used terms in relation to the topic of the current thesis are physically active learning (PAL), movement integration (MI), physical activity (PA), and classroom movement breaks (CMB) when referencing active classroom interventions. The differences in the terms consider whether the process of learning is involved. CMB and PA have in common that they do not include a focus on academic content but rather on the physical activity aspect, while PAL and MI are terms used when addressing learning through a physically active method. PAL is a pedagogical approach where pupils are physically active while learning academic content (Bartholomew & Jowers, 2011, p. 51). CMB is defined as short bursts of activity between periods of academic instruction (Daly & Smith, 2018, p. 2). PA stands for physical activity and is referenced in studies where physical activity does not contain academic content. Physical Activity can vary from low to moderate intensity PA (LMPA) and moderate to vigorous intensity PA (MVPA) (Grieco et al., 2016, p. 98). The last term, non-active learning (NAL), is when learners are learning through non-active methods. Bacon and Lord (2021, pp. 362-363) define NAL as non-active desk-based learning.

McMullen et al. (2016, p. 322) define Movement Integration as “activities that seek to infuse physical activity into general education classrooms.”. MI is a more overarching term and can include CMB activities; PAL, conversely, excludes CMB activities and focuses primarily on learning academic content through physical activity/movement. The terms chosen in the different studies vary. For example, Kibbe (2011, p. 47) refers to classroom-based movement, but on the other hand, describes the concept of PAL. In the earlier stages of physically active learning, there was a lack of specific terminology for PAL; however, Donnelly & Lambourne (2011, p. 36) refer to it as physically active academic lessons (PAAL). Other researchers in the early stages of PAL also referred to it as PAAL (Bartholomew & Jowers, 2011; Dyrstad et al., 2018). In more recent research, the term physically active learning (PAL) is more commonly used. Daly-Smith et al. (2020, p. 1) defined PAL as “integration of movement within the delivery of academic content”. The term used in the current research will be PAL; however, when presenting previous research, I will use the same term as each study/research paper.

2.2 Grammar Teaching to ESL Learners

Munden (2014, p. 143) defines grammar teaching as the explicit teaching of language forms and their uses. On the other hand, Larsen-Freeman states that grammar should be looked at as a fifth skill. Stating that when teachers look at “grammaring” as a separate skill, it undermines the idea that grammar is a dynamic system which needs to be taught as a skill (Perez-Llantada, 2007, p. 158). Widodo (2006, p. 129) comment on how “language learning, particularly in the context of EFL, is a largely conscious process that involves formal exposure to the rule of syntax and semantics followed by specific applications of the rule, with corrective and encouraging feedback”. The two basic approaches to teaching grammar are explicit and implicit. An explicit approach considers the deliberate study of a grammar rule, and an implicit approach considers acquiring grammar naturally through exposure (Scott, 1990, p. 779). Research shows that explicit form-focused grammar instruction is effective, and explicit instruction can speed up language acquisition (Ellis, 2002, p. 145). Looking into grammar teaching, the questions of what to teach and how to teach it emerge.

There are several approaches to grammar teaching; the ones mentioned below focus on the three dimensions of explicit grammar teaching: form, meaning and use. The three dimensions cover what the grammar concept looks like, how it sounds, and when to use it (Munden, 2014, p. 163). Thornbury (1999, p. 24) elaborates on how grammar should be taught with communication as the primary goal; however, suggests that without some attention to form, learners run the risk of fossilisation. Fossilisation is the process where repeated use of incorrect grammar has become a habit. A communicative approach to language teaching looks at meaning rather than the practice of grammatical forms in isolation (Yacob & Yunus, 2019, p. 210). The communicative approach could also be called a meaning-based approach and is the opposite of a form-based approach, which focuses on linguistic and grammatical structures in isolation (Sysoyev, 2020, p. 152). One approach to teaching form is consciousness-raising. It is described as instruction in grammar through drills, grammar explanation, and other form-focused activities as a means to raise awareness of grammatical features of the language (Richard, Plat & Plat, 1992, p. 72). When using this approach, learners should be provided with data that illustrates a target feature and an explicit rule description or explanation (Widodo, 2006, p. 124). Communicative language teaching enables spontaneity in speech compared to form-based language teaching, which creates grammatically accurate speech. The accuracy is observed mainly in prepared speech and lacking in spontaneous speech (Syosoyev, 2020, p. 152). Larsen-Freeman highlights the importance of teaching all three dimensions of form, meaning and use. The form-based approach and meaning-based approach exclude a part needed to speak and use language accurately, meaningfully and appropriately (Perez-Llantada, 2007, pp.158-159).

The two main approaches to explicit grammar teaching are deductive analysis and inductive analogy (Scott, 1990, p. 779). The deductive approach involves the learners being given a general rule and applying it to their language. A deductive approach works from the general to the specific. One starts with a presentation of rules, principles, concepts or theories before their application is treated (Widodo, 2006, p. 126). Widodo (2006, p. 128) elaborates on how the teacher would teach a rule explicitly, through the deductive approach, to prepare the learners to cope with a given exercise. And to prepare the learners, the teacher needs to provide numerous exercises. The inductive approach involves rules inferred from examples, and the learners detect and notice patterns and work out a rule for themselves before

practising use (Thornbury, 1999, pp. 29-30). An inductive approach can also be called rule-discovery learning and works from particulars to generalities (Widodo, 2006, p. 127).

There are advantages and disadvantages to working with the inductive and the deductive approaches; however, according to Sik (2015, p. 2144), “deductive teaching of grammar is slightly more effective than inductive teaching”. She comments on how the learners learn more with a deductive approach and how the teachers feel better about a lecture when it is taught deductively. Thornbury (1999, p. 30) states that disadvantages to teaching through a deductive approach are the teacher-fronted transmission style of presenting a grammar rule and that starting a grammar lesson with a presentation could be off-putting to young ESL learners.

Other disadvantages could be that younger learners may not be able to understand the concept. It is less memorable than other forms of presentation, and it encourages the belief that language learning is about knowing the rules (Widodo, 2006, p. 127). The advantages of using the deductive approach are that many rules of form can be explained quickly, giving more time to practice and application. It acknowledges the role of cognitive process in language learning and benefits learners with a more analytic learning style (Thornbury, 1999, p. 30). It respects the maturity of learners and confirms many of the learners’ expectations about classroom teaching (Widodo, 2006, p. 127). The advantages of the inductive approach to teaching are that the learners are more active in the learning process, and it involves learners’ pattern recognition and problem-solving abilities. The disadvantages of the inductive approach are that it is time- and energy-consuming, and it could lead the learners to have the wrong concept of the rule (Widodo, 2006, p. 128). The advantages and disadvantages often depend on the learners’ preferred learning styles and the teacher’s explanatory skills (Thornbury, 1999, p. 38). It is important to note that the difference in academic achievement is small and that some learners are more amenable to a deductive approach, and some are more amenable to an inductive approach (Widodo, 2006, p. 129; Thornbury, 1999, p. 38). Against this backdrop, the current research used the deductive approach due to it being quick and efficient, providing more time to conduct the games. Moreover, the teachers of the researched class did not believe that the learners would require more practice in the deductive method in order to be able to identify the rules themselves.

When it comes to choosing what grammar concepts to work with, Munden (2014), who writes with a focus on the Norwegian teaching context, suggests that by the end of Year 7, most learners should understand the terms noun, pronoun, verb, adjective, adverb, preposition, article, singular, plural, present tense, past tense, regular verb and irregular verb. One of the most challenging parts of grammar for young Norwegian ESL learners to understand and use in written text is verb tenses (Munden, 2014, pp. 157-159). The current research looks at the verb tenses simple present and present continuous in the first iteration and simple past and past continuous in the second iteration. In addition to being the most difficult, present simple and past tense are two patterns that are often tested in the national tests at the beginning of Year 8 (Munden, 2014, p. 159). As a result of it being something the learners usually struggle with as well as it being expected knowledge in Year 8, the verb tenses simple present and present continuous was chosen to be taught in the first iteration. To keep the iterations as similar as possible, the second iteration worked with verbs in simple past and past continuous.

Apart from grammar concepts, teachers need to carefully consider methods of teaching when it comes to explicit grammar teaching. There has been a considerable change in the approach to teaching grammar, from a traditional approach to a more communicative approach (Gardner, 2008, p.39). When presenting a rule, Thornbury (1999, p. 48) recommends using illustrations, keeping it short, to check the learners understanding and giving the learners the opportunity to personalise the rule. Munden (2014, pp. 151-152) stresses the importance of not frightening the learners with complex grammar concepts. When it comes to what grammar concepts to teach, Munden (2014, pp. 152-157) suggests pedagogical rules, meaning grammar rules that work most of the time and that are simple enough for learners to implement into their own language. She highlights the importance of defusing grammar and providing context when working with grammar. Thornbury (1999, pp. 27-28) highlights how the lessons should be catered to the learners' needs, interests, and attitudes. Keeping that in mind, Larsen-Freeman mentions how teachers often look at grammar as something static, which results in grammar being taught in a static manner (Perez-Llantada, 2007, p. 158). To engage the learners, Skaalvik and Skaalvik (2015) express how the teacher needs to facilitate their teaching to arouse interest, curiosity and excitement (2015, p. 11). By listening to the

learners' concerns regarding the boringness of the school day, the learners could feel more ownership of the lesson plan and not experience grammar as insuperable and scary. Skaalvik and Skaalvik (2015, pp. 31-33) point out that the most essential source for creating an expectation of mastery is to have genuine experiences of mastery. As such, creating positive experiences with grammar could make the pupils feel like they mastered the topic and the threshold for failure and opting out was lowered. In summary, the recommendations state that grammar should be taught in a way that takes into account the learners' needs, interests and educational level.

Choosing a physical and playful approach could lower the threshold for participation and create a better learning atmosphere regarding practising grammar. Yacoob and Yunus (2019, p. 213) explain that language games often include activities that suit ESL learners' language needs and help them learn in an effective and encouraging environment. Working with grammar games encourage, entertain and promote fluency in learners (Adeng & Shah, 2012, p. 28). Language games are an efficient and advantageous option for teaching grammar, especially when learners are not cooperative or interested in grammar lessons (Yacob & Yunus, 2019, p. 215). According to Widodo (2006, pp. 123-124), practice is one of the keys to learning incorporated into a methodology with features such as specific grammatical features, production of sentences with the specific grammatical feature, opportunities for repetition and feedback on whether they use the grammatical structure correctly or incorrectly. Grammar games create an effective language practice and meaningful context for language use, which can benefit learning outcomes (Lilic & Bratoz, 2020, p. 60). Games are learner-centred and promote communicative competence as well as a reduction in learning anxiety (Lilic & Bratoz, 2020, p. 60; Yolageldili & Arikan, 2011, p. 227). Using games to teach grammar could lower the threshold for participating in complex grammar concepts in addition to increasing the learners' enjoyment of grammar lessons. In a way, using PAL to teach grammar is similar to using grammar games in the sense that it creates a competitive and playful aspect.

2.3 Physical Active Learning (PAL)

The World Health Organisation (2016, p. 11) created a Physical Activity (PA) Strategy for the European Region 2016-2025, which encourages schools to implement physical activity interventions. The mission of the PA strategy is to decrease sedentary behaviours and facilitate physical activity. The recommendation has been realised in several countries, resulting in different actions to increase PA levels. Actions such as ACTivate Your Class, Moving to Learn Ireland, Texas I-CAN!, Let's Move Active Schools (US), and Finnish On the Move (FSM) are school-based PAL interventions that promote learning through PA. PAL was developed as a response to government requirements as well as teachers' experience of PA interventions. Erwin et al. (2012, p. 32) found that teachers were generally positive toward PA interventions but felt constricted in finding sufficient time to implement non-academic interventions.

As stated previously, PAL works to increase the physical activity levels of pupils while being an engaging approach to learning (Daly-Smith et al., 2018, p. 2). The primary purpose of PAL is to improve the PA levels of learners while also being a more engaging approach to learning, and PAL often encourages teachers to use other environments that provide engaging experiences (Daly-Smith et al., 2018, p. 2). Norris et al. (2018, p. 1) discuss how PAL is often highlighted as an important teaching method justified by the increase in inactive children, also referencing the recommendation of 60 minutes of daily moderate to vigorous physical activity (MVPA) by WHO (2010, p. 19). Ottesen (2017, pp. 97-113) has divided PAL into five different types of PAL. The five types are play activities, structuring teaching, embodiment, situational exercise and creative aesthetic learning activities. Play activities are categorised as games and play activities. According to Ottesen (2017), play activities work to develop concrete skills within subjects through repetition and training. Structuring teaching relates to the organisation of tasks and includes the structuring of teaching to facilitate movement without the aspect of play. Embodiment is characterised by activities where the learners physically enact the academic subject. Situational exercises relate to moment activities in subject-specific situations. Finally, creative aesthetic learning activities focus on creative, aesthetic and productive dimensions (Ottesen, 2017). The current research has focused on play activities and situational exercises.

2.3.1 PAL in the Perspective of Relevant Theory on Learning

Physical active learning (PAL) is based on the holistic view of human development, which suggests that both the body and mind should be activated during learning (Vingdal, 2014, p. 38). The general thought surrounding the holistic view is that children evolve physically, cognitively and socially and that these factors affect each other. The holistic view of human development consists of five skills divided into two categories: Physical skills (physical and motor skills) and psychological skills (emotional, cognitive and social skills). Figure 1 is an illustration of how these factors are interconnected. This interconnectedness means that, theoretically, if a child excels in one factor, it could positively affect the other parts. Conversely, a lack of confidence in one of the factors could theoretically block the progress in another factor (Vingdal, 2014, pp. 38-40).

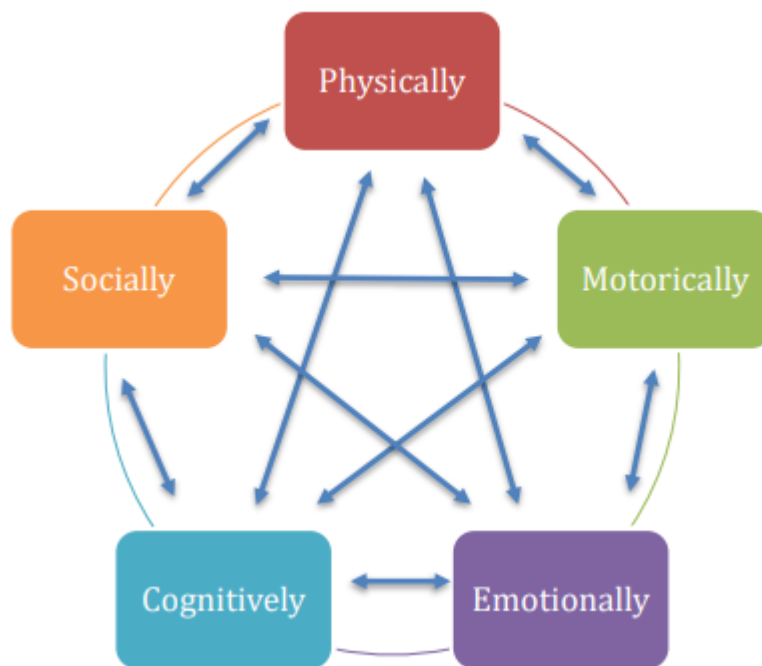


Figure 1. A holistic view on how pupils learn (Vingdal, 2014, p. 40).

Physical activity creates opportunities for cooperative learning, which proponents of the holistic view of learning believe is an essential part of human development (Vingdal, 2014, p. 42). The physical skills could have a positive effect on psychological skills due to the possibility of learning and developing social skills. PAL could facilitate self-concept

development and contribute to confidence in oneself and one's own abilities. As mentioned earlier, from the holistic view of learning, excelling in one factor could give energy, reassurance, attention, concentration, positive self-worth and experiences that promote cognitive learning (Vingdal, 2014, p. 42). Vingdal (2014, p. 61) highlights the importance of meaningful collaboration. Dividing a class into smaller learning groups gives the learners fewer people to interact with, which could create more opportunities to affect others. However, the groups must be well-thought-out and create learning opportunities for every learner. Grouping learners who struggle with a task with learners who master the task could result in feelings of failure and inferiority for the struggling learners. Dyrstad et al. (2018, p. 5) looked at teachers' and learners' experience with a PAL project and found the opposite, where the academically disadvantaged learners worked better in groups where they were supported by academically strong learners. Both Dyrstad et al. (2018, p. 5) and Vingdal (2014, p. 72) concluded that learning in groups works best in a good learning environment and community of practice.

PAL and social interactions are closely related and affect each other. Vygotsky believed that learning happened twice, first on a social level and second on a personal level (Manger et al., 2013, p. 195). He found thinking and problem-solving to be closely related to cooperative learning and that learning occurs faster when working with other people. In many language situations, working in groups could be beneficial. Vingdal (2014, p. 46) elaborates on how language is the most prominent tool of mediation and, therefore, places communication as a crucial factor for learning. Vingdal (2014, p. 44) also emphasizes the importance of viewing communication and physical actions as situated in context. Vingdal further elaborates on how an essential part of sociocultural theory is to see the connection between context and action. According to Manger et al. (2013, pp. 194-195), Vygotsky emphasized the importance of language for learning and development and that it was the key to acquiring knowledge. Vygotsky is a big part of the sociocultural perspective of learning. The perspective looks at learning and development as a social process within cognitive development. Fundamentally, from the sociocultural perspective, is the belief that humans are inherently social. The interaction with the environment through social relations creates the driving force in the learning processes. Bad relations to a teacher or the feeling of exclusion from the learning community could result in negative adaptations to school (Manger et al., 2013, pp. 183-184).

According to Vingdal (2014, p. 61), working in groups is beneficial for learning and utilizing PAL. She also adds the importance of acknowledging that learning does not necessarily happen in every group setting.

2.4 Previous research that has investigated physical active learning

PAL has gained increased popularity in the last few years due to the lack of physical activity among learners in today's society (Bartholomew & Jowers, 2011; Daly-Smith et al., 2018; Donnelly and Lambourne, 2011; Dyrstad et al., 2018; Grieco et al., 2016; Kibbe et al. 2011; Norris et al., 2015; Skage et al., 2020). The PAL method is most often used in topics such as mathematics, science, reading and spelling in Norwegian schools (Skage et al., 2020, p. 4) and internationally (Daly-Smith et al., 2018, pp. 4-6; Kibbe et al., 2011, p. 47). As mentioned in section 1.1, there is a lack of research on using PAL when teaching English, especially English in classrooms.

The majority of studies on the academic benefits of PAL find that there are minor to moderate benefits on academic achievement after a PAL intervention and suggest that it is a topic that needs more research and confirmation (Bartholomew and Jowers, 2011; Bacon & Lord, 2021; Bedard et al., 2019; Daly-Smith et al., 2018; Donnelly et al., 2009; Donnelly and Lambourne, 2011; Kibbe et al., 2011; Norris et al., 2015; Norris et al., 2020; Resaland et al., 2016).

Employing quasi-experimental designs and systematic reviews, most of these studies show a small benefit in utilizing PAL compared to a control group or a NAL group. However, researchers are unsure whether the increase in academic outcomes is a result of the learning in itself or a result of the increase in TOT (Daly-Smith et al., 2018, p. 14). A reason given to why PA could have positive effects is because it increases neurotransmission chemicals, cerebral blood flow, and oxygen delivery, which could have an impact on concentration (Bacon & Lord, 2021, p. 371). Another reason given is the academic motivation PA create in the learning environment, which could result in greater academic performance (Vazou et al., 2012, p. 260). When it comes to the concept of Time on Task (TOT), there were several studies that could conclude with an increase in TOT compared to control groups (Bacon & Lord, 2021; Daly-Smith et al., 2018; Grieco et al., 2016; Kibbe et al., 2011). Whether or not

the increase in TOT is a result of the learning task or the activity aspect is not researched, researchers still believe PAL to be a valuable method to use when teaching (Daly-Smith et al., 2018, p. 14).

Interestingly, when opening up the search for literature to include PA and PE, approaches that increase physical activity without academic content, there are several studies that indicate a positive increase in academic achievement as a result of increased PA or PE (Alvarez-Bueno et al., 2017; Carlson et al., 2008; Chacon-Cuberos et al., 2020; Haapala et al., 2017; Mahar et al., 2006; Resaland et al., 2016; Singh et al., 2012; Torrijos-Nino et al., 2014; Trudeau & Shephard, 2008). There are also studies that indicate small to no effect on academic achievement when working with PA (Donnelly et al., 2016; Sneck et al., 2019). Sneck et al. (2019, p. 8) conducted a systematic review of studies looking at academic achievement correlating to PA and found positive effects in 13 studies and neutral effects in 15 studies, which demonstrate the difficulty of stating with certainty that PA and PE have positive effects on academic achievement. Conclusively, several of the studies mentioned an “*indication*” of positive effects on academic achievement and, as a result, highlighted the need for more research regarding the topic (Chacon-Cuberos et al., 2020; Donnelly et al., 2016; Sneck et al., 2019).

In addition to increases in physical activity, utilizing PAL when teaching has been shown to increase time on task (Bacon & Lord, 2021; Daly-Smith et al., 2018; Grieco et al., 2016; Kibbe et al., 2011; Norris et al., 2020). Bacon and Lord (2021, p. 369) looked at PAL lessons compared to NAL lessons and saw an increase in learners' Time on Task by 10% with PAL lessons compared to NAL lessons. Bacon and Lord emphasized learning, repetition, and recalling multiplication tables. Grieco et al. (2016) conducted a 10-15 minute spelling relay in four different classes with four different intensities, ranging from the standard lesson (no physical activity) to a seated game, to LMPA (low to moderate) game, and the last group conducted an MVPA (moderate to vigorous) game. Both the LMPA game and the MVPA game had significant increases in TOT; however, the MVPA had the greatest increase in TOT. This coincides with Kibbe et al. (2011, p. 49) finding that MVPA reduced the Time off Task by 20.5% and Daly-Smith et al. (2018, p. 14) finding that 9 out of 11 PAL/CMB intervention increased TOT.

Another advantage mentioned when it comes to the PAL method is variation in the teaching, as well as increasing motivation and engagement (Dyrstad et al., 2018; Lerum et al., 2021; Mavildi et al., 2017; McMullen et al., 2016; McMullen et al., 2019; Martin & Murtagh, 2017). In the few studies looking at the learners' perspectives towards PAL, learners mention the experience of intrinsic motivation and perceived competence (Vazou et al., 2012, p. 259). Martin and Murtagh (2017, p. 224) worked with the subjects of maths and English when utilizing PAL and found that the learners shifted their view from maths and English being boring and sedentary to expressing enjoyment and excitement to the PAL lessons. The learners also expressed a shift in their view of learning as an individual process to learning as a collective activity. Teachers expressed how PAL helped them create more variation in their teaching, and they enjoyed how the lessons supplemented and reinforced what they were covering in class (Martin & Murtagh, 2017, p. 225). The learners also comment on the enjoyment of the added variation to the school day and being outside (Dyrstad et al., 2018, pp. 8-9). McMullen et al. (2019, p. 63) mention how the learners derive enjoyment from interacting and participating with peers as well as the physically active component. The learners also mention an "inherent enjoyment of movement, an appreciation of learning through movement and perceived physical benefits of moving the classroom" (McMullen et al., 2019, p. 56).

The studies researching learners' experience with PAL directly found that learners who received PAL lessons were more content with the teaching (Bedard, 2019, p. 13; McMullen et al., 2019, p. 64; Mavilidi et al., 2018, p. 515). A study conducted by Lerum et al. (2021, p. 5) examined why Norwegian teachers chose to adopt PAL into their own teaching. Based on the interviews, they found that teachers wanted to enhance their teaching and improve the learner's learning outcomes. The teachers observed how the learners enjoyed working with PAL, mentioning that "PAL brings smiles, laughter, engagement and joy to pupils" (Lerum et al., 2021, p. 5). Lerum et al. (2021, p. 5) mention how the teachers noticed the learners taking more risks when engaging with tasks introduced with PAL. Lerums et al.'s (2021) findings regarding enjoyment and creating variation in teaching are synonymous with other research from teacher-oriented PAL studies, such as Martin and Murtagh (2017) and McMullen et al. (2016).

In some cases, it is shown that the PAL method could improve academic achievement (Donnelly et al., 2009; Donnelly and Lambourne, 2011; Kibbe et al., 2011; Mavildi et al., 2017; Norris et al., 2020). Donnelly et al. (2009, pp. 339-340) looked at performance on standardized tests and found positive results in reading, math and spelling tests after a three-year exposure to active academic lessons. Donnelly suggests associations between PA and academic performance with concentration, memory, cognitive processing and classroom behaviour. Not only are there indications of increased academic achievement, but the learners' perception of academic competence significantly increased (Vazou et al., 2012, p. 259).

In relation to disadvantages of the PAL method, some teachers have expressed difficulties with time constraints, space and regaining control. Martin and Murtagh (2017, p. 225) questioned five teachers about their experiences with PAL, and four of the teachers expressed concerns about time and space. Even though there were difficulties, the teachers considered the PAL project a success and highlighted the learners' enjoyment of the lessons as a big contribution to its success. McMullen et al. (2016, p. 325) found similar tensions when it came to utilizing the PAL method, where teachers commented on time pressure, space constraints, number of learners as difficulties and lack of control. Even though there are constraints to the PAL method, teachers also clarify the importance of implementing PAL. Giving reasons such as the importance of movement for children throughout the day and the importance of variation when it comes to teaching and student enjoyment.

Studies have found that teachers experienced PAL as more time-consuming than initially thought, and they experienced difficulties with getting the learners to settle back down after an activity (Dyrstad et al., 2018, pp. 4-7; McMullen et al., 2016, p. 327). McMullen et al. (2015, p. 395) looked at international approaches to Whole-of-School Physical Activity Promotion and found that experts from each of the countries involved in the study had similar issues. The experts wanted more involvement from parents and school staff and needed more financial support to implement Whole-of-School PA. Some experts missed more free resources, and others missed more development of CSPAP (Comprehensive School Physical Activity Program) leaders.

To summarise, there are advantages and disadvantages to utilizing PAL as viewed both by teachers and learners. The previous research includes the perspective of teachers and the perspective of learners, however, there is a lack of research looking into PAL in the Norwegian EFL classroom. The previous research mentions the advantages and disadvantages of using PAL as a method of learning. The studies mentioned conclude with the highlight that even though PAL has its restrictions, teachers see benefits with the learning method and consider it a valuable method of teaching.

3. Methodology

The aim of this chapter is to describe the methodology used to answer the current study's two research questions. The first research question revolves around confirming previous research stating that physical active learning (PAL) creates a neutral or positive effect on academic performance (Bacon & Lord, 2021; Bedard et al., 2019; Bartholomew et al., 2011; Daly-Smith et al., 2018; Donnelly et al., 2009; Donnelly and Lambourne, 2011; Kibbe et al., 2011; Norris et al., 2015, Norris et al., 2020; Resaland et al., 2016). It asks the question of whether the neutral to positive effect on academic performance transfers to grammar teaching. The second research question revolves around the learner experience of learning through PAL lessons. It asks the question about the learners' perception of their own learning process and enjoyment of PAL lessons. To answer these questions, a mixed methods quasi-experimental case study was conducted, utilising both qualitative and quantitative data collection methods.

In the following, section 3.1 elaborates on the methodological approach to the current research and the reasoning behind the choice of approach. Section 3.2 describes the research participants and discusses the sampling methods. After that, in section 3.3, a description of the PAL project will be provided. The section also elaborates on the two iterations of the project, before moving on to the lesson plan in section 3.4. Subsections 3.5.1, 3.5.2 and 3.5.3 look at the three data collection methods chosen in the current research and the data analysis methods are elaborated on in section 3.6. Lastly, the ethical considerations are highlighted in section 3.7.

3.1 Methodological approach

The present study requires a methodology that gathers quantity data and in-depth data, hence the employment of a mixed-method research. A mixed-methods research uses a combination of qualitative and quantitative research methods. It is often used when studies have different research questions and helps create a more complete picture of the phenomenon under investigation (Mackey & Gass, 2022, pp. 400-401). Quantitative methods gather quantity

data, such as data considering learning outcomes and the learners' opinions. The purpose of utilizing quantitative methods is to standardize the information and create a clear overview of the information (Postholm and Jacobsen, 2018, p. 166). On the other hand, utilizing qualitative methods gathers in-depth data to understand human behaviour and opinions (Postholm and Jacobsen, 2018, p. 113). Postholm and Jacobsen (2018, p. 110) stress the importance and interconnection of qualitative and quantitative methods and state that "In many instances, both types of data are necessary.". Mackey and Gass (2022, p. 402) add that utilising both methods could better explain the other approach. For example, quantitative data can help explain qualitative results and vice versa. The current study utilizes both methods because it is about exploring different aspects of the same phenomenon. PAL is the central phenomenon, with sub-points being whether using physically active learning methods creates sufficient learning outcomes and whether the learners enjoyed working with PAL activities. With the addition of qualitative data, one can more certainly claim whether implementing PAL activities should be part of one's own teaching (Postholm and Jacobsen, 2018, pp. 110-112).

Mackey and Gass (2022, p. 269) state that "a typical experimental study usually uses comparison or control groups to investigate research questions. Many second language research studies involve a comparison between two groups.". A quasi-experimental design does not rely on randomly assigned groups as an experimental design does (Mackey & Gass, 2022, p. 269). The current study is a quasi-experimental design because it did not rely on random assignment to groups.

The current study works with a pretest/posttest design, including comparison groups rather than a control group. The pretest/posttest design revolves around measuring the effect of treatment through a pretest and a posttest (Mackey & Gass, 2022, pp. 270-271). The independent variable of the current study is the type of explicit grammar teaching the learners receive. The variables are physically active learning (PAL) and non-active learning (NAL). Including a comparison group compared to a control group was a more fair comparison between the two samples. The dependent variable that is going to be measured is the learners' grammatical knowledge when it comes to verb tenses. The current study compares explicit PAL teaching to explicit NAL teaching, and as a result, both groups had to learn the same

phenomena but through different learning methods. Because both groups experienced measures, the study is classified as a comparison group design, compared to a control group design where the other group would not experience any measure at all (Mackey & Gass, 2022, pp. 269-271).

The basis of the project was to compare the learner's knowledge before and after conducting a physically active grammar lesson to see how the learners respond to the physically active lesson. To answer the first research question regarding the comparison of learning outcomes, the quantitative data collection methods of pretest, posttest and delayed posttest were used. In a pretest/posttest and delayed posttest design, one can look at the immediate effect of treatment and investigate whether the treatment also resulted in longer-term learning (Mackey & Gass, 2022, p. 272).

To answer the second research question, a mix of quantitative- and qualitative data collection methods was beneficial, and both a questionnaire and interviews were conducted. A questionnaire is “one of the most common methods of collecting data on attitudes and opinions from a larger group of participants” (Mackey & Gass, 2022, p. 126). It allows subjects to report their opinions and beliefs directly. Interviews, on the other hand, look at fewer subjects' opinions but gather the subjects' self-reported perceptions and beliefs with the possibility to elicit additional data if initial answers are not sufficient (Mackey & Gass, 2022, p. 313).

3.2 The sample

The sample for the study consisted of two classes in Year 5 from an elementary school in Norway. Year 5 is an interesting age group; the grade begins their semester with national tests in English, Maths and Norwegian, the learners are finished with the subject curriculum targeting Year 4, and they begin working with the subject curriculum targeting Year 7. As mentioned earlier, it is in the shift from Year 4 to Year 7 that the grammar focus drastically increases in the subject curriculum. At the school in which the current study was conducted, the researcher had worked with the learners in Year 5 for a little over half a year and

continued to work with them during the data collection period. The close relationship made it easier to keep control of eventualities, and the learners knew what was expected of them, making it easier to conduct the lessons. The researcher also knew which levels the learners were expected to be at and could create lessons and tests that would be manageable.

The sampling strategy employed in the current study was a convenience sample due to the researcher's previous involvement with the classes. According to Mackey and Gass (2022, p. 20), a convenience sample is when the researcher uses more easily available subjects. Using a convenience sample is the least desirable due to the choice of subjects being out of practicality rather than the purpose; however, it is the most common sampling method. On the other hand, the subjects are more amenable, which is essential when sampling qualitative data (Høgheim, 2020, p.157). The sample pupils for the interviews were decided, in co-operation with the other Year 5 teachers, based on representing a wide range of abilities and usual activity levels. Moreover, based on observations done during the project, measures were taken to include pupils with a wide range of experiences with the project. This was done to encourage heterogeneous perspectives on the project during the interviews.

Using the sampling strategy described above, two classes were sampled from a mid-sized school with approximately 150-250 learners. The two classes consisted of 54 learners in Year 5, ranging from proficiency levels A1 to B1 in the Common European Framework of Reference for describing language ability (Council of Europe, 2001, pp. 24-29). Both classes had some learners with learning difficulties. The initial thought was to split the classes into three, where one class received PAL lessons, one received NAL lessons, and one functioned as a control group. However, the recommendation of keeping the classes intact emerged with the reasoning that additional variables should not be added because it could complicate the interpretation of data.

To ensure that the learners were offered equal opportunities to achieve the learning outcomes and to increase the number of pupils who could respond to the survey and interviews about their experiences of PAL, both classes received both a PAL and a NAL lesson but in different order. One of the classes, henceforth referred to as class X, received the PAL lesson first, while the other class, henceforth referred to as class Y, received the NAL lesson first. As

mentioned earlier, the decision of which class should be X or Y was made based on practical reasons related to the class schedule. The learners received a consent form prior to the research stating everything that the learners and parents needed to know to make an informed choice as to whether or not to participate in the pretest, posttest, questionnaire and interviews (see Appendix 1). Prior to the project, the learners were informed, by the researcher, orally about the project in detail. The learners were informed about the intention of the project, highlighting the desire to gather student voices regarding learning through PAL. Lastly, the learners were notified about the possibility of opting out whenever they wanted before the consent forms were handed out. The decision to include a delayed post-test was made later in the project and was therefore not included in the consent form. However, the parents/guardians were informed by text message that the delayed post-test would take place, giving them the opportunity to withdraw on behalf of the pupils. Similarly, the learners were informed verbally about the post-test and were also informed about their right to opt out of this. Class X consisted of 26 learners, where 24 consented to contribute to the project. Class Y consisted of 28 learners, where 25 consented to contribute to the project. Out of the 49 learners who consented, there were some who did not consent to the interview part of the project. Other than that, all of the 49 learners consented to carry out the pretest, posttest, and questionnaire parts of the project. During the project, merely one learner opted out and, as a result, did not answer the posttest, questionnaire and delayed posttest.

3.3 The physically active learning project (PAL project)

The physically active learning (PAL) project was a six-lesson intensive quasi-experimental project, where the research intention was to investigate whether PAL lessons positively affected academic performances and how the learners experienced the PAL lessons.

	Class Y	Class X
1st iteration (Simple Present & Present Continuous)	Pre-test	Pre-test
	3x20 min PAL-based lesson	3x20 min NAL-based lesson
	Post-test	Post-test
2nd iteration	3x20 min NAL-based lesson (Simple Past & Past Continuous)	3x20 min PAL-based lesson (Simple Past & Past Continuous)
	Questionnaire	Questionnaire
	Group interview	Group interview
6 weeks after the 2nd iteration (Simple Present & Present Continuous)	Delayed posttest	Delayed posttest

Table 1. *Overview of the project.*

Table 1 provides an overview of the project as conducted in Class X and in Class Y. The project's first iteration contained a pretest, three simple present and present continuous lessons, and a post-test. During the second iteration, the groups swapped learning methods, meaning the experimental group received NAL lessons, and the comparison group received PAL lessons. The second iteration contained three lessons on simple past and past continuous, a questionnaire and a group interview. The lessons on simple past and past continuous were not included nor a part of the tests. The second iteration ended with a survey asking how the learners experienced both lessons and how they perceived their own learning. The last part of the project was a delayed posttest, testing the verb tenses simple present and present continuous.

The project used 20 minutes at the end of each English lesson. In a 60-minute lesson, the first 40 minutes consisted of regular English teaching, and the last 20 minutes went to the project. This means that both the classes went through the same topic during the first 40 minutes, and the classes experienced different grammar lessons during the last 20 minutes of the lessons.

The first iteration resulted in a total of 120 minutes executing the project, where the PAL and NAL lessons took 60 minutes, including 30 minutes spent on the pretest and 30 minutes on the posttest. The second iteration also took a total of 120 minutes, where 60 minutes were used in PAL and NAL lessons, 30 minutes on conducting the survey, and 15 minutes on each of the two interviews.

The project contained two iterations to let both classes experience PAL and NAL lessons. The first iteration focused on gathering data to be able to compare learning outcomes and, as a result, answer the first research question. As such, in the first iteration, one class experienced PAL lessons and the other experienced NAL lessons. The aim of the second iteration was to provide the learners with experience of the other approach, a prerequisite for gathering data for the second research question. As mentioned earlier, both iterations work with verb tenses, however, the first iteration revolved around simple present and present continuous and the second iteration revolved around simple past and past continuous. The idea was that the learners were supposed to indulge in learning a “new topic” through PAL methods, hence the change in focus on tenses in the second iteration. To enable better comparison between the two groups, the PAL and NAL lessons shared very similar design and build-up. Both the PAL and the NAL lessons were built up with a short instruction about the tenses in the beginning, a quick explanation about the activity, and an ending with the learners completing the activity. The difference between the group experiencing PAL lessons and the group experiencing NAL lessons was that the activity was conducted outside with a physical approach with the PAL lessons, and the activity was conducted seated at their desks with the NAL lessons. The PAL group operated outside due to practical reasons, since groups of 26 and 28 learners running inside could result in chaos, and the availability of the gymnasium was limited. Moreover, previous PAL interventions commented on the positive effect of changing the learning environment (Dyrstad et al., 2018, pp. 8-9).

3.4 The Lesson Plan

During the current study's first iteration, the two classes experienced three lessons of 20 minutes each on present simple and present continuous tenses. As a result of time constraints, the tenses were going to be taught deductively with a primary focus on form and use.

However, as Larsen-Freeman states, one cannot teach grammar with only a form-focused approach. One needs to include some work with meaning as well (Perez-Llantada, 2007, pp.158-159). “What do the two different tenses look like? Are there any general rules regarding the writing form? When do we generally use the different tenses?” are questions that were going to be used as guidelines for teaching the tenses. The content of the lessons was the same for the experimental group and comparison group; however, the learning methods differed. The following learning aims were designed for the lessons:

- The learners should be able to form sentences in the present simple and the present continuous.
- The learners should be able to describe when it is appropriate to use the two tenses and choose the correct form in a given sentence.

For the PAL lessons, the 20 minutes were divided into roughly 6 minutes of explaining the grammar tense, another 4 minutes explaining the rules of the game, and the remaining time was spent on putting shoes and jackets on as well as conducting the game outside. The NAL lesson was divided similarly, although 4 minutes were spent explaining the task at hand, and the last 10 minutes were spent completing the task. The time was indicative and changed along the way depending on whether the learners understood what was supposed to be done. Sometimes, there was excess time at the end to recap what they learned, and sometimes the time fell short, and some minutes had to be borrowed from the lesson coming after.

The activities for the PAL lessons were physical versions of different tasks regarding verb tenses. The activities were inspired by activities mentioned in the book “Uteaktiviteter i skole og SFO” by Robert Flatås (2020). The class experiencing PAL lessons would use subcategories of PAL such as running and teamwork. The NAL activities were the same as the PAL activities, but they were made to be conducted at their desks with pen and paper. The NAL group were also given the opportunity to work together in groups. During the second

iteration, the tasks were identical, but the verb tenses were changed to simple past and past continuous. An overview of the lessons is presented in the table below (see Table 2). The overview shows the learning aim for each lesson, how the lessons were introduced and how the lessons differed from the PAL group to the NAL group.

	Learning aim	PAL activity	NAL activity
Lesson 1	The learners should be able to describe when it is appropriate to use the two tenses and choose the correct form in a given sentence.	The instructions given highlighted the difference between simple past and past continuous. It looked specifically at form and when to use the different forms. The researcher asked the learners to give examples of verbs that describe something that happens often. Examples such as play, take, go, read, need and live were written on the whiteboard. The researcher highlighted how the verbs look like verbs written in infinitive. The researcher then shifted focus to verbs in present continuous and asked for examples of verbs that are happening right now. Examples such as raining, watching, playing, looking and teaching were written on the whiteboard. And the researcher highlighted the -ing ending.	
Activity in Lesson 1		The first activity was a version of the Norwegian game “snipp og snapp” where the learners line up, back to back. Instead of being “snipp” and “snapp”, the learners were, in the first iteration, simple present or present continuous. The teacher yells a verb in one of the tenses, and the person with the right tense would run to the end of a court, while the person with the wrong tense would try catching them with a tap on their back (Flatås, 2020, p. 46).	Before starting the task, the researcher erased the words written on the whiteboard. During the first task, the learners were seated with their learning partners and given a piece of paper. The teacher said a verb out loud, and the learners had to write the verb under the section

			“simple present” or “present continuous”.
Lesson 2	The learners should be able to describe when it is appropriate to use the two tenses and choose the correct form in	The project lesson began with a recap of what they did last time. The researcher wrote Simple Present and Present Continuous on the whiteboard, asking for examples for each of them. The same examples were written on the whiteboard with the inclusion of the need for an auxiliary verb when working with the present continuous verb. The researcher did not recap the rules for each because they were going to be highlighted during the task. The summary of tasks and answer alternatives can be found in Appendix 2.	
Activity in Lesson 2	a given sentence.	The second activity was a version of the “husk svaret-kvissen”. The learners were in groups of three, and the court was divided into three sections. There was a learner in each section, and they could not leave their section. The groups were to answer different tasks, however, the tasks were on one side of the court, and the answers were on the other side of the court. Answering one by one, the learners had to run and whisper tasks and answers to each other (Flatås, 2020, p. 25).	During the second task, the learners were given all of the papers stating the questions and answers. The learners had to work together and match the correct question with the correct answer.
Lesson 3	The learners should be able to form	The last lesson had a lengthier activity/task, meaning the pre-instructions were cut out, and the lessons ended with a short post-instruction about what they had learnt during these	

	sentences in the present	three grammar lessons. The summary of tasks can be found in Appendix 3.	
Activity in Lesson 3	simple and the present continuous	<p>The third activity was a version of the Norwegian orientation activity “Stjerneorientering”. There were eight posts hung around the schoolyard with different tasks written on them. The learners got a piece of paper with all the different colours of the tasks. First, they received a colour and the position of the coloured post. The learners were to run to the post, write their answer in the correct colour block on their paper, and run back to a teacher stating their answer. If the answer were correct, the group got a new colour and position to find (Flatås, 2020, p. 45).</p>	<p>During the third task, the teacher had cutouts of the tasks and gave each group a task to begin with. The learners had to work as a group, find answers to the task, and write the answers down in their writing book. When a group had finished a task, they raised their hands, and the teachers checked if the answer was correct. If they answered correctly, they were given another task to answer.</p>

Table 2. *Overview of the lesson plan.*

3.5 Data collection methods

In order to answer the research questions, three methods for collecting data were chosen: a pretest, posttest and delayed posttest gathering data on learning outcomes, a questionnaire gathering data on how the learners experienced PAL and NAL lessons, and a semi-structured interview complementing the answers in the questionnaire with more in-depth information.

3.5.1. Pretest, posttest and delayed posttest

In order to measure learning outcomes, the learners completed a pretest and a posttest. Mackey and Gass (2022, p. 272) stress that it is important to keep in mind that a pretest and posttest design could indicate learning outcomes, but on the other hand, learning is a process and does not always occur at a single moment. However, to try and measure the learning outcomes of the brief project that was conducted, a pretest, posttest, and delayed posttest design was conducted. The pretest was completed by 46 learners, the posttest was completed by 36 learners, and the delayed posttest was completed by 45 learners. Both groups answered the same pretest and posttest at the beginning of and immediately after the first three lessons. The pretest was conducted on the 7th of February, and the lessons began on the 8th of February. The post-test was given straight after the first iteration while the knowledge was still fresh. The posttest was conducted on the 16th of February. Because there was a massive decrease in learners completing the posttest, the choice of having a delayed posttest was made. The number of sick learners who missed answering the posttest created difficulties regarding the analysis and interpretation of data. As a result, a delayed posttest became necessary. The tests were anonymous, and finding their individual answers would be impossible. However, looking at who was present during the pretest and giving the same learners the delayed posttest helped minimise the mortality rate and gave a more solid foundation to answer the first research question (Dimitrov & Rumrill, 2003, pp. 162-163). The delayed posttest was conducted on Tuesday, the 28th of March, which is 6 weeks after the posttest, which follows the recommendation given by Randall and Villado (2016, p. 53). The benefits of a delayed posttest are the maturation of the content and the wider snapshot of the treatment effect received (Mackey & Gass, 2022, p. 272).

Mackey and Gass (2022, p. 221) do not recommend using the same test for the pretest, posttest and delayed posttest due to the possibility of the practice effect. However, the tests were not returned nor collectively corrected to reduce the practice effect. The classes were not familiar with having tests, and to fully see the potential of the learning outcome, the tests were created a bit too difficult for the learners. Too easy tasks could affect the pre-tests as well as limit the measure of learning outcome. Being merely in Year 5 and having learners that initially responded badly to tests, it reassured the learners that they would receive the

same test multiple times. Prior to the pretest, the researcher made sure to clearly state that the learners were being tested on a topic they most likely knew nothing about. The researcher mentioned that the goal of the pretest was to see what they knew about the topic from before and that the researcher did not expect them to answer everything correctly in the pretest.

The pretest and posttest were divided into three parts, all related to the verb tenses simple present and present continuous. The first task was designed to indicate whether the learners know when to use the different verb tenses in sentences. The first task consisted of a fill-in-the-gap-inspired task where the learners were asked to underline the correct use of the verb in sentences. The second task asked them to produce three sentences on each verb tense with the correct use of the verb. The production task indicates if the learners know what the different tenses should look like and also allows the learners to show that they can use the different tenses when building sentences. The last task asked when to use simple present and when to use present continuous. There were four options to choose from, and the task was to cross out the correct use (see Appendix 4). The last task indicated whether they knew the rules for using simple present and present continuous.

Every task was given a predesigned point system to be able to systemize the answers and analyze them later on. The pretest, posttest and delayed posttest results would be compared to reveal whether the learners working through PAL and NAL methods actually learned something. To maintain anonymity, the pretest, posttest and delayed posttest were analyzed as group answers rather than individually. In class Y, there were 23 learners who completed the pretest, and in class X, there were 23 learners who completed the pretest. Due to absence, only 20 students in class Y completed the posttest, and only 16 completed the task in class X. Because of this, the decision was made to conduct a delayed post-test to enable more accurate comparisons. When conducting the delayed posttest, the teacher noted who was present during the pretest and managed to separate the answers from the pretest group and the answers from the learners absent during the pretest. Hence, 23 delayed posttests were received from class Y, and 22 delayed posttests were received from class X. One learner conducted the pretest and posttest but opted out of completing the delayed posttest.

3.5.2 Questionnaire

In order to gather data from all learners, one of the data collection methods used to identify the learners' opinions of PAL was questionnaires. The aim of questionnaires is to gather information from larger groups of people. The information could be factual, behavioural or attitudinal (Dörnyei & Csizér, 2012, p. 74). In the current study, the intention of the questionnaire was to obtain more data on how the learners had experienced the PAL lessons and the NAL lessons, hence collecting attitudinal information. The questionnaire was given on paper and was handed out to the learners to fill out at the end of the PAL project. Due to absence and some learners not wanting to participate in the questionnaire, 38 of the 49 learners consenting to answer the questionnaire completed it.

The questionnaire was mostly made up of close-ended items, meaning the learners did not need to produce any free writing except for one open question. The open question was included as it gave the learners an opportunity to elaborate on their thoughts regarding the PAL project. The questionnaire was made on a Likert scale of 1-5, where the learners had to express agreement or disagreement with statements (Dörnyei & Csizér, 2012, p. 75). The learners were to cross out on a line to what degree they agreed/disagreed, meaning they could give answers between "somewhat disagree" and "somewhat agree". The learners needed to indicate whether they liked learning through PAL/NAL, whether they felt like they learned through the different methods and whether they wanted to continue working with PAL and/or NAL lessons. In total, 10 different statements were created (see Appendix 5). To make sure there were no implications of PAL being more advantageous than NAL, it was decided to have statements in favour of PAL and statements in favour of NAL. There was one statement that considered both methods to be equally enjoyable and one statement asking if the learners felt like they experienced equivalent learning outcomes from both methods.

Due to some difficult wording in the questionnaire, the teacher read each statement aloud and rephrased the statements to be more suitable for the learners. For example, the statement "I enjoyed learning grammar through physical learning activities the best" was rephrased to "If you liked learning grammar through physical learning activities the best, you put a cross on the line near agree, and if you did not like learning grammar through physical learning

activities the best you put a cross on the line near disagree”. The rephrasing clarified what was expected of the learners and aided the learners with reading difficulties. To ensure a correct understanding of the statements in the questionnaire, both the questionnaire and the conduction happened in Norwegian (Dörnyei and Csizér, 2012, p. 79).

The statements were created with Dörnyei and Csizér’s (2012, p. 78) rules for writing good items in mind. They state that the items should aim to be short, use simple and natural language, and avoid negative constructions and double-barreled questions. The length of the questionnaire should be under the 30-minute completion limit, and in the current research, the 30-minute completion limit resulted in two pages for the learners to answer (Dörnyei & Csizér, 2012, p. 78). The statements in the questionnaire were created with the second research question in mind. The second research question looks at the learners' experience of both the lessons and how they enjoyed working with PAL and NAL lessons. The research question also covers the learners' perception of their own learning process, focusing on whether they felt like they had learnt something and whether they felt like it was easier or more difficult to learn outside of the classroom.

3.5.3 Interview

Following the questionnaire, group interviews were conducted. Six learners participated in group interviews, divided into two groups of three (see section 3.2 for sampling strategy for the groups). Interviews are communication methods that surround gaining knowledge on a specific topic (Postholm and Jacobsen, 2018, p. 117). Interviews are divided into levels of structuring, where a structured interview leaves little room for spontaneity, and an unstructured interview could be too unprepared for the current research. The interviews conducted for the current study were semi-structured, meaning the questions asked were pre-planned, but the interview opened up to spontaneous comments and follow-up questions. The interview surrounded the learners' experience with a phenomenon. The semi-structured interview needs an interview guide (see Appendix 6), but the order could be improvised depending on the interviewees (Postholm & Jacobsen, 2018, pp.118-121).

Since the interviews were mainly used to confirm whether the interpretation of answers in questionnaires was correct and give in-depth answers to the learners' experience of utilizing PAL, there was no need for interviews prior to or in the middle of the project. The interviews took place one day after the questionnaires were carried out and lasted no more than 10 minutes for each group. The learners had been prepared for the interviews two days prior and were asked if they wanted to elaborate on their thoughts regarding the project.

To try and keep the environment as natural as possible while simultaneously being uninterrupted, the interviews were in the neighbouring group room to the learners' classroom (Mackey & Gass, 2022, p. 314). Mackey and Gass (2022, p. 313) recommend using L1 when interviewing people to minimize the risk of misconception as well as enable clear communication from the interview subjects. The interviews were recorded with a handheld recorder borrowed from the school and transcribed verbatim in order to gather the data and systemize it. Postholm and Jacobsen (2018, p. 132) recommend recording the interview to keep the primary focus on conducting the interview.

3.6. Data analysis methods

Conducting a data analysis works with the organization, explanation, noticing patterns and common themes when it comes to the data collected (Postholm & Jacobsen, 2018, p. 193). Analysing mixed-methods data, the current study would benefit from both quantitative and qualitative data analysis approaches. When analysing quantitative data, the data needs to be coded, and a descriptive statistical analysis is beneficial to be able to indicate differences in learning outcomes and gather the collected learners' opinions. When analysing the qualitative data, the most common approach is a thematic analysis, which was utilized when analysing the interviews. A thematic analysis works by keeping the data as is by sticking to the subjects and their stories (Postholm & Jacobsen, 2018, p. 162). The current study was analysed in three stages, where each data collection method was worked with individually before looking at recurring themes. First, the pretest, posttest and delayed posttest were coded and analysed. Second, the questionnaires were coded and categorised. In the third stage, the interview data were transcribed and sorted into the same themes as the questionnaires were sorted into.

The answer options regarding the tests (pretest, posttest and delayed posttest) were also given numerical values. A correct answer equals one point. However, the last task needed a different approach, as several of the learners merely checked all the boxes instead of checking the boxes they believed to be correct. As a result, a correct answer gave one point, and a wrong answer gave a negative point. The answer options to each question in the questionnaire were given a numerical value, a process also named coding (Postholm & Jacobsen, 2018, p. 193).

The thematic analysis method looks at the data in relation to the research question and finds patterns within the data set (Braun & Clarke, 2006, p. 87). Beneficial to the thematic analysis method is the flexibility surrounding the method. With the lack of a specific framework, the thematic analysis method makes for a broader range of possible analyses compared to other methods that focus on patterning and thematizing (Braun & Clarke, 2006, p. 81). Braun and Clarke (2006, pp. 70-80) created a guide to employing the thematic analysis method. The first stage in the guide is to familiarize oneself with the data gathered. The interviews were transcribed and read several times before they were translated into English with a focus on employing the learners' meaning. The second stage works with generating codes, meaning gathering data that is interesting to the analyst. It is recommended to work systematically through the data set and identify aspects of the data that could form the basis of repeated patterns across all of the data set (Braun & Clarke, 2006, p. 89). The third and fourth stages are about searching for themes and reviewing the themes. The fifth and sixth stages are about defining themes and producing the report. The last four stages revolve around finding recurring themes and naming them. The overarching themes of the current study are 1) Learning Outcome, 2) The Learners Perceived Learning, and 3) Learners' perspective on the learning process, including their enjoyment of the lessons.

3.7 Quality Criteria and Ethical Considerations

Postholm and Jacobsen (2018, p.222) highlight the terms credibility, transferability, dependability and confirmability when working with the limitations and the different aspects influencing the research. Credibility looks at internal validity, meaning questioning whether

the conclusions made are valid. Transferability works with the external validity, meaning whether the results of the research could be transferred to other similar settings. Lastly, dependability and confirmability are more precise words that work with reliability and look at whether the research results could be reconstructed or reproduced by other researchers in other instances. Postholm and Jacobsen (2018, p. 223) mention how it could be hard to replicate a qualitative study because of the variables such as the researchers, the field of research and the humans participating in the research. In qualitative research, dependability and confirmability could be enhanced with how the researcher reflected upon one's own impact on the research as well as the transparency of the researcher to let others create their own opinions regarding the research (Postholm & Jacobsen, 2018, p. 224).

Govil (2013, p. 18) elaborates on four important areas where an educational researcher has responsibility. The areas are participants, responsibility towards users, area of knowledge and fellow researchers. Participants are those who are involved in the process both directly and indirectly. The participants have a right to maintain privacy, guaranteed anonymity and confidentiality (Govil, 2013, p. 19). To ensure complete transparency, the project was elaborated in a consent form, which needed to be signed by the learners' parents before they were allowed to participate in the data collection methods. The consent forms included a description of the project and highlighted the constant choice the learners had to opt out from the data collection methods without any form of consequence (see Appendix 1.).

The area “responsibility towards users” considers the customers of users of educational research. The customers are teachers, school administrators and policymakers. This means that the current research should look at classroom problems and try to seek solutions to them. Govil (2013, p. 20) states, “honesty should be the keyword for any process”, “limitation of research should be disclosed”, and “results should not be reported as the final voice”. The statements formed a strong guideline for the conduction of the current research. The current research recognized the responsibility towards the area in which the research is going to be conducted. To get an accurate picture of the current position of grammar teaching and the PAL method, extensive literature research was done. Lastly, the responsibility towards the research community revolves around being transparent, and the research should be well thought out.

Mackey and Gass (2022, p. 7) elaborate on the importance of keeping high ethical standards before, during and after the study. To maintain high ethical standards, the current study was registered and approved by the Norwegian Agency for Shared Services in Education and Research (SIKT) (see Appendix 7). The project would have to be in line with the SIKT guidelines to be approved. The SIKT guidelines are created to guarantee the subjects' safety regarding data collection, data storing, anonymity and the subjects' right to information. The ethical standards also revolved around the collection and storage of the data. The tests (pretest, posttest, and delayed posttest) and the questionnaire were conducted on paper, stored in a locked safe at the school, and maculated when the data was extracted. The interviews were recorded on a digital voice recorder borrowed from the school, and the recordings were transcribed in Microsoft Word on a computer that required a password. The recordings were anonymised during the transcription and the recordings were deleted immediately after the researcher ensured the data to be collected. A part of the ethical standard is also being aware of the impact the researcher had on the learners, which is also called the halo effect (Mackey & Gass, 2022, p. 313). During the qualitative part of the research, there was a possibility that the subjects answered what they thought the researcher wanted to hear. Another part to consider when it comes to research bias is the WIERD concept, where most of the participants in research are from Western, educated, industrialized, rich, and democratic contexts (Mackey & Gass, 2022, p. 21). It is an important thing to note in the whole of the research community.

3.7.1 Credibility and Transferability

Credibility examines to what extent the differences found for the dependent variable directly relate to the independent variable (Mackey & Gass, 2022, p. 212). If the credibility is valid, it strengthens the material presented. Postholm and Jacobsen (2018, p. 233) mention the importance of noting the difficulty in knowing whether an interpretation is the correct one. It therefore strengthens the credibility of an interpretation by presenting other possible interpretations. Considering the pretests and posttests, Mackey and Gass (2022, p. 221) elaborate on how the changes in tests could affect the results. They state that one should

consider the possibility of the practice effect, but on the other hand, changing the tests could also have an impact on the results. Another possible limitation of the study is the transparency chosen by the researcher; voicing the goal of the study could impact the behaviour of the learners in the study (Mackey & Gass, 2022, p. 222). Lastly, Mackey and Gass mention how the questions need to be precise and understandable to the learners. As mentioned in section 3.5.2, some of the statements could have been too difficult for some learners and as a result, the decision to go through the questionnaire together was made.

Transferability examines to what extent the findings in the study are relevant to the research population and to other similar populations (Mackey & Gass, 2022, p. 225). In a school setting it means whether a research project would have similar results if it were conducted at another school. Postholm and Jacobsen (2018, p.238) mention the term generalisation. Meaning, when other teachers read the research, they should be able to draw parallels to their own teaching and the teachers should be able to adapt the research and integrate it into their own teaching. Considering the current study is a master thesis looking at a small sample size as well as the study being a brief intervention study, it is important to argue whether the subjects are representative of other learners (Postholm & Jacobsen, 2018, p. 242). Lastly, Postholm and Jacobsen (2018, p. 243) highlight the importance of connecting the results to previous research and relevant theory.

3.7.2 Dependability and Confirmability

Dependability and confirmability address to what extent the study is trustworthy (Postholm & Jacobsen, 2018, p. 222). Mackey and Gass (2022, p. 234) identify a problem with being a sole researcher, is the fact that there is only one person who judges the dataset, without the influence of another researcher. The researcher needs to be aware of the biases that can affect the study (Postholm & Jacobsen, 2018, p. 224). It is inhumane to be 100% objective, and there will always be some sort of subjectivity; however, it is important to be aware of the facts. Postholm and Jacobsen (2018, p. 224) and Mackey and Gass (2022, p. 222) emphasise being transparent to make the research process as visible as possible to ensure that others can reflect on it. To strengthen the dependability, certain aspects of the research have to be

clarified. The aspects are the relationship between the researcher and subjects, the relationship between the thesis and participants of the research, the context of the research, who is included in the research and who is not, and is everything accounted for (Postholm & Jacobsen, 2018, pp. 225-228).

4. Context, findings, and interpretations

In the following chapter, the findings from the research will be presented. The chapter has been divided into three sections. The first section looks at the learning outcome. It looks at the learning outcome in itself, as well as, the perceived learning outcome from the perspective of the learners. Section 4.2 looks at the learners' enjoyment when working with PAL lessons compared to NAL lessons. Section 4.3 looks at the advantages and disadvantages of using PAL lessons from the perspective of the learners. The sections concentrate on the findings that regard the research questions. The research questions are:

- Does Year 5 EFL learners' knowledge about the uses of and ability to correctly apply the present simple and the present continuous in sentences develop through PAL lessons compared to NAL lessons, and if so, to what extent?
- What are the pupils' perceptions of their own learning process and enjoyment of the two lessons after having experienced both?

4.1 Learning outcomes from the pretest, posttest and delayed posttest.

To answer the first research question regarding whether the learners have learned how and when to use simple present and present continuous, one must look at the results from the pretest, posttest and delayed posttest. Data relating to the learning outcomes was gathered from the pretest, posttest and delayed posttest. However, considering the absence during the posttest, the numbers became skewed, making the data difficult to analyse and interpret. Hence, the pretest and delayed posttest were the only sources of data used in the analysis. The pretest was conducted by 46 learners, the posttest was conducted by 36 learners, and the delayed posttest was conducted by 45 learners.

As mentioned earlier, three tasks were included in the pre-, post- and delayed post-tests. The purpose of the three different tasks was to look at competencies when it comes to working with simple present and present continuous. According to the focus of the study, the learners were supposed to be able to separate the two tenses, know how to conjugate the different

tenses and know when it was appropriate to use the different tenses. In the following, the results from each task will be presented chronologically.

The tables illustrate the differences in learning outcomes from the pretest to the delayed posttest. The blue column represents points from the pretest, and the red column represents points from the delayed posttest. The answers from Group Y, who received the PAL lessons in the first iteration, are situated on the left side of the figure. The answers from Group X, who received the NAL lessons in the first iteration, are situated on the right side of the figure. The figure includes the mean score, the median and the standard deviation for each group. The mean is the number giving the most information to whether the learning outcome increased for the group overall. The median shows the centre of all the data. However, the standard deviation says something about the spread of the values in the data set and could give insight into large variations in the dataset.

The first task looked at being able to separate the two tenses and in which context it was appropriate to use the different tenses, and it gave the smallest increase in learning outcomes of the three tasks. An overview of the results from the first task can be found in Table 3. The task required the learners to underline the correct form of the verb. Every correct answer was given a point. The maximum score for the task was 10 points, and the minimum was 0.

Task 1

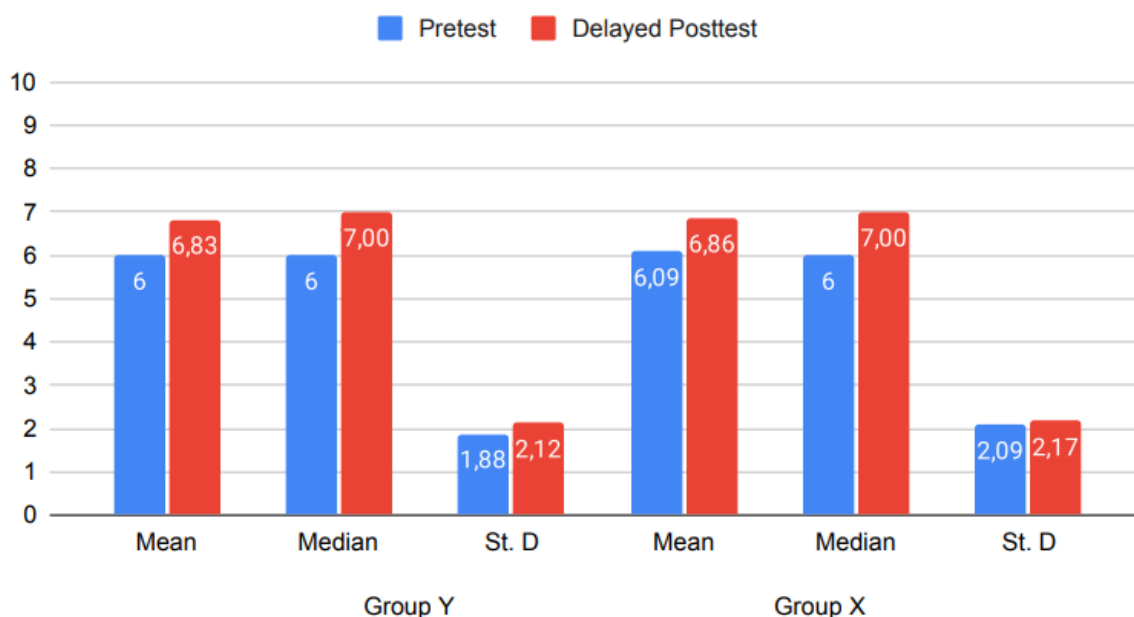


Table 3. *Task 1: Underline the correct verb form.*

The table illustrates the increase in learning outcomes where the learners in group Group Y had a mean score of 6 in the pretest and 6,83 in the delayed posttest. This means the learners in group Y, on average, answered 60% correctly in the pretest and 68,3% correctly in the delayed posttest, giving an increase of 8,3%. Group X's mean started at 6,09 in the pretest and 6,86 in the posttest. This means the learners answered 60,9% correctly in the pretest and 68,3% correctly in the delayed posttest, giving an increase of 7,4%. As such, the learners from both groups produced similar results in the pretest and delayed posttest. The median increased with one correct answer in both groups. Meaning, generally, the learners answered more correctly in the delayed posttest. In the figure below. The standard deviation is small, which indicates that the data is clustered around the mean.

In the pretest, sentences 4, 5 and 8 had the most wrong answers in Group Y. All three of these sentences had Simple Present tenses as the correct answer. Sentence 4 was: "I get up early every day for school, but I try to sleep in on Sundays." Sentence 5 was: "Crocodiles live in the water." and sentence 8 was "Kangaroos jump quite far." 17 learners answered sentence 4 incorrectly, 15 learners answered sentence 5 incorrectly, and 16 learners answered sentence 8 incorrectly. Looking at the same sentences in the delayed posttest, sentence 4 had 11 incorrect

answers, sentence 5 had 10 incorrect answers, and sentence 8 had 9 incorrect answers, which increases with 6, 5 and 7 correct answers. In the pretest, the sentences that had the most correct answers were sentences 3, 6 and 9, which all had Present Continuous tense as the correct answer. The same sentences had the most correct answers in the delayed posttest as well. Group X's answers were more spread, and there were no sentences that stood out in the number of wrong answers. Similar to Group Y, the sentences that had the most correct answers were sentences 3 and 6 in the pretest and 3, 6 and 9 in the delayed posttest.

The second task looked at the production of sentences with simple present and present continuous tenses. (An overview of the results from the second task can be found in Table 4). The learners were to produce three sentences with verbs in simple present and three sentences with verbs in present continuous. A point was given to each correct use form of the verb. The verb could have spelling errors, but the correct form had to be used. Spelling errors in the sentences were not corrected. The maximum score was 6, and the minimum score was 0.

Task 2

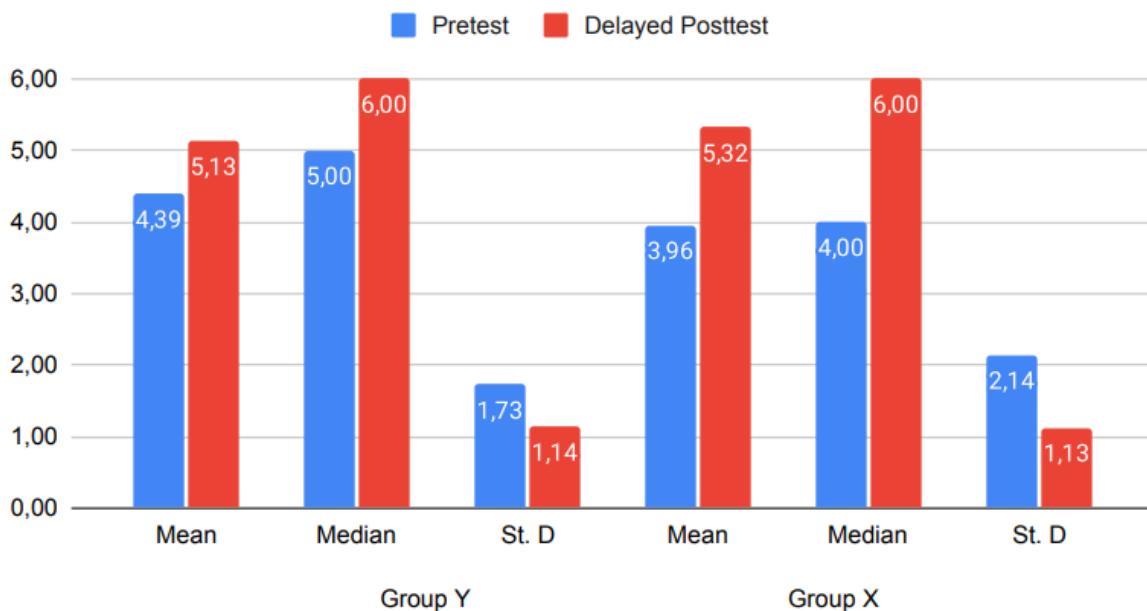


Table 4. Task 2: Write sentences including Simple Present and Present Continuous.

Group Y started off with a higher mean than Group X, 4,39 and increased that mean to 5,13. This means that the learners answered 73% correctly on the pretest and 86% correctly on the

delayed posttest, giving an increase of 13%. Group X started off with a mean of 3,96 and increased said mean to 5,32 in the delayed posttest. This means that the learners answered 66% correctly in the pretest and 89% correctly in the posttest, giving an increase of 23%. Group X had a larger increase in correct answers than Group Y. However, Group Y had a smaller room for an increase since they scored higher in the pretest. Once again, the standard deviation is small, which indicates that the data is clustered closely around the mean.

In both the pretest and the delayed posttest, there was a higher occurrence of correct answers when it came to creating sentences in Simple Present compared to Present Continuous. Group Y created 57 correct sentences in Simple Present and 43 correct sentences in Present Continuous in the pretest. Considering the high number of correct answers in the pretest, there was less room for improvement when it came to writing sentences in Simple Present. For Group Y, Simple Present had an increase of 3 more correctly written sentences, compared to the increase of 15 more correctly written sentences in Present Continuous. This means that in the delayed posttest, there were 60 correct answers in Simple Present and 58 correct answers in Present Continuous. Similarly, Group X had an increase in 8 more correctly written sentences in Simple Present and 18 more correctly written sentences in Present Continuous. Both groups had great improvements when it came to the production of sentences in Present Continuous.

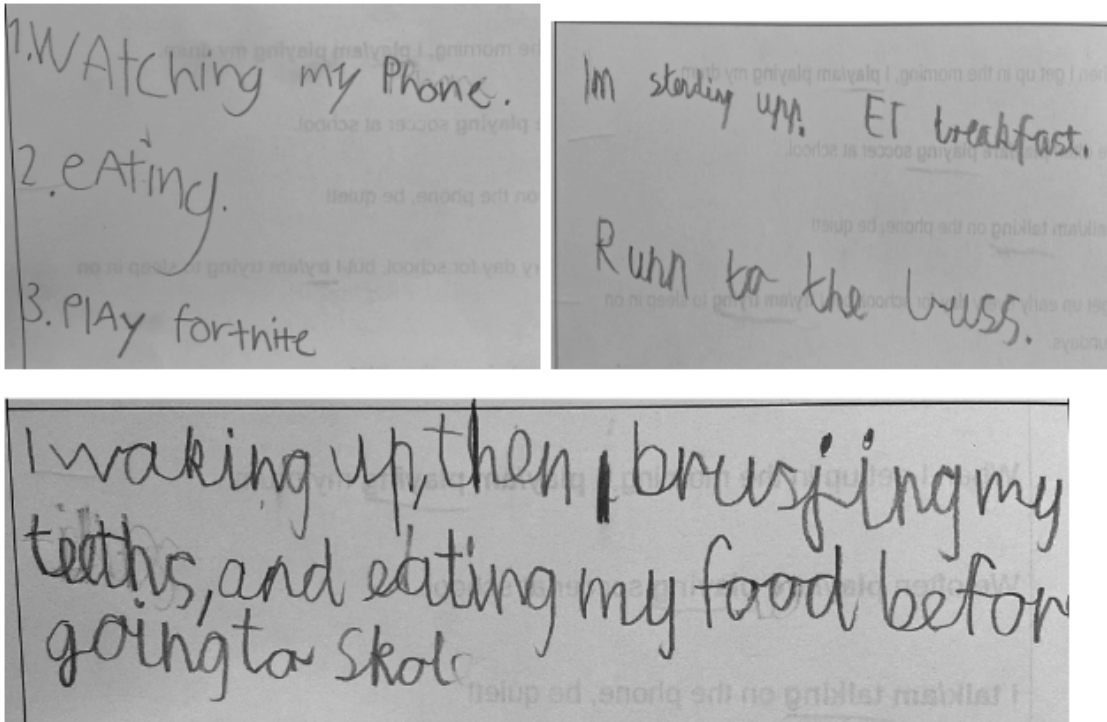


Figure 2. Excerpts of wrong answers in Present Continuous.

The third task looked at the rule in itself of when to use the different tenses. (An overview of the third task can be found in Table 5). The third task worked with the rules of when to use the simple present form and when to use the present continuous form. As mentioned in the data analysis methods, task three was the most complicated to score. Some learners had simply checked every box with suggestions on when to use the different rules. As a result, the decision was made to give negative points. This means the maximum score was 3, and the minimum score was -5.

Task 3

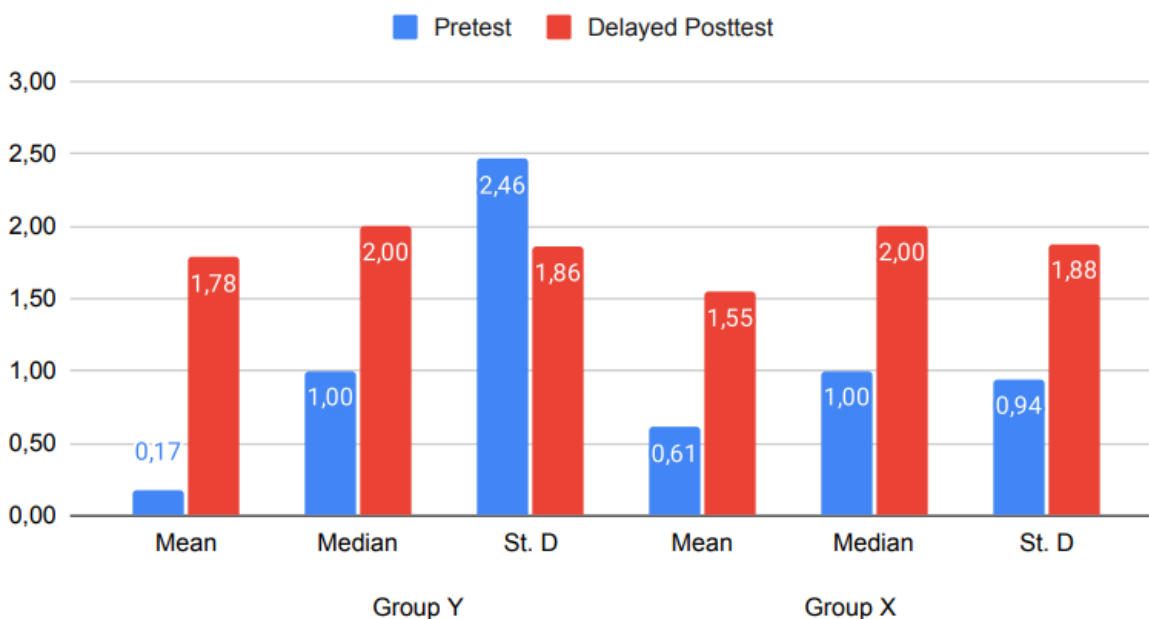


Table 5. Task 3: *When do we use Simple Present and Present Continuous.*

Group Y and Group X started off with different means. Group Y, who received PAL lessons in the first iteration, had a mean of 0,17 in the pretest, and Group X, who received NAL lessons in the first iteration, had a mean of 0,61. In the delayed posttest, Group Y's mean was 1,78, and Group X's mean was 1,55. This means that group Y started off with 4% correct answers and ended with 45% correct answers, which is an increase of 41%. Group X, on the other hand, started with 15% correct answers and finished with 39% correct answers, which is an increase of 24%. Group Y had a much bigger increase in end results when it came to identifying the rule of when to use simple present and present continuous. The standard deviation is slightly bigger, compared to the other tasks, which indicates that the data is more dispersed from the mean. In other words, even though both groups had an increase in correct answers, there were still learners who answered somewhat incorrectly.

Similarly to the other two tasks, the learners had more correct answers when it came to the Simple Present tense compared to the Present Continuous tense.

4.2 Pupils’ Perceptions of Their Enjoyment and Learning with PAL and NAL Methods

In answering the second research question regarding the pupils’ perception of PAL lessons, it was essential to get quantitative data as well as in-depth data. After experiencing both PAL and NAL lessons, the learners from both groups received a questionnaire with 10 statements. The statements were read aloud by a teacher, and the learners noted if they agreed or disagreed with the statements. The Likert scale had five answering options. 1=*disagree*, 2=*somewhat disagree*, 3=*neither agree nor disagree*, 4=*somewhat agree* and 5=*agree*. The statements that have means close to 1 and 5 give solid indications for unanimous opinions. The table below (Table 6) illustrates the learners' collective answers to the first three statements regarding how the learners preferred to learn. The colour red illustrates the answer *disagree*, and the colour green illustrates the answer *agree*. The color grey illustrates the answer *neither agree nor disagree*.

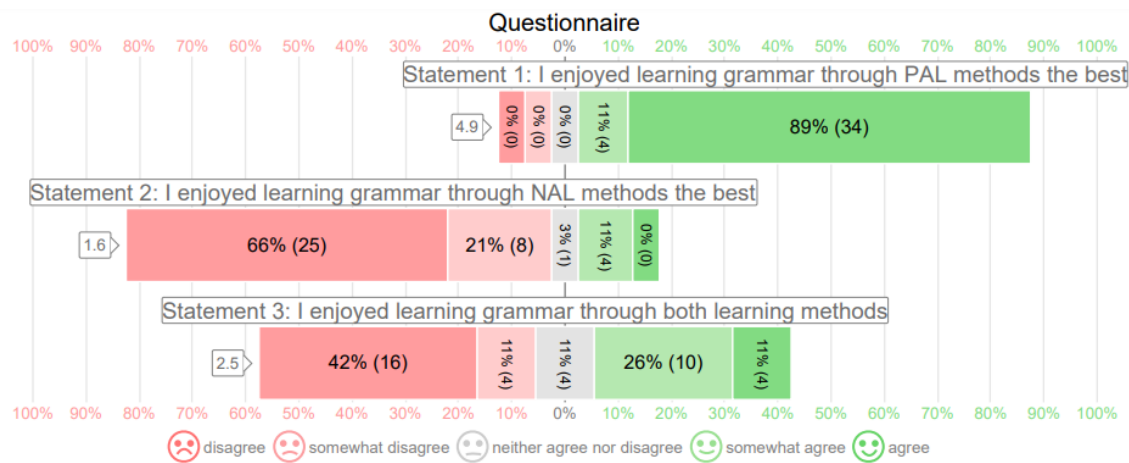


Table 6. Statements regarding preference towards PAL vs NAL.

The first two statements give indications of agreement among the learners when it came to their preferred learning method. Statement 1, “I enjoyed learning grammar through PAL methods the best”, received a strong indication of agreement. Merely four learners out of the 38 in question answered with *somewhat agree*, and no one disagreed. Statement 2, “I enjoyed learning grammar through NAL methods the best”, received a strong indication of disagreement. Statement 3, “I enjoyed learning grammar through both learning methods,”

received more conflicting answers. The answer could be interpreted as some of the learners enjoyed working with both methods, and, considering the answers in Statement 1, some learners did not enjoy working with NAL methods. However, Statement 3 indicates that even though the learners preferred learning grammar through PAL methods, there are some learners who also enjoy working with grammar through NAL methods.

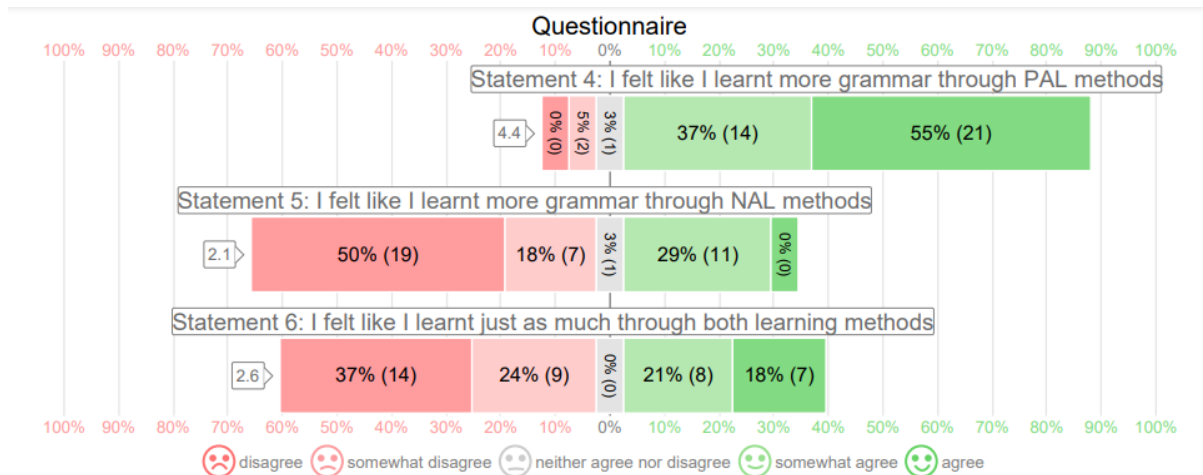


Table 7. Responses to statements regarding the learners' experience of learning outcomes.

The table above (Table 7) illustrates the learners' opinions on how they experienced their learning outcome. Statement 4, “I felt like I learnt more grammar through PAL methods”, received a strong indication of agreement where only two learners *somewhat disagreed* and one learner *neither nor agreed*. Statement 5, “I felt like I learnt more grammar through NAL methods”, had a mean score of 2,1, indicating that the learners *somewhat disagreed* with the statement. However, it is important to note that compared to Statement 4, the answers were more spread. 11 learners *somewhat agreed* with the statement. Statement 6, “I felt like I learnt just as much through both learning methods”, was a statement with a large spread. 61% of the learners answered *disagree* or *somewhat disagree*, and 39% answered *somewhat agree* or *agree*.

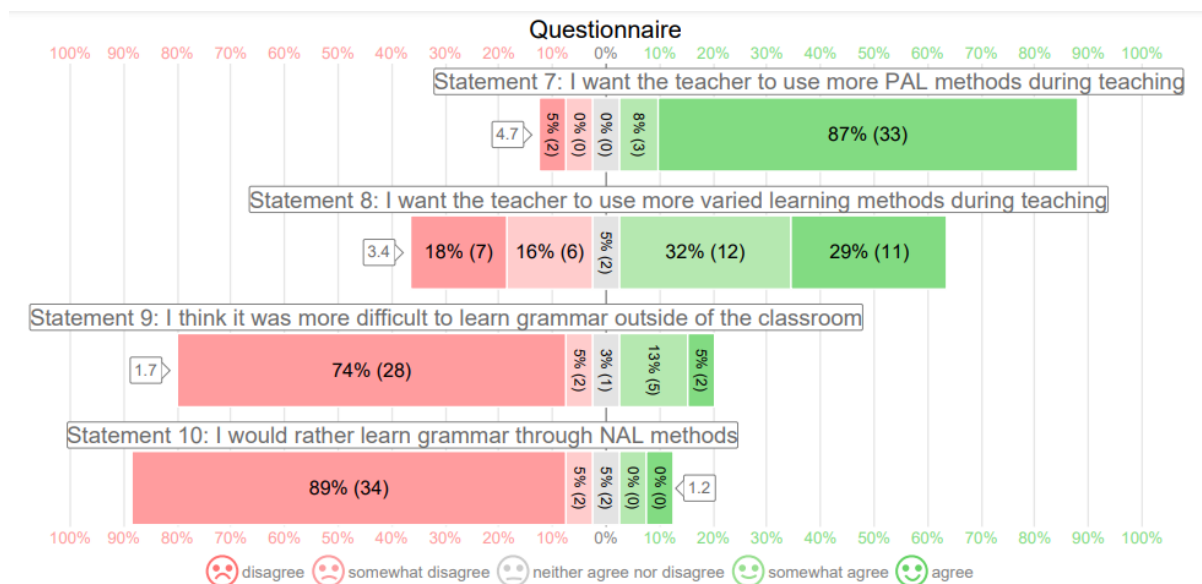


Table 8. The learners’ thoughts surrounding teaching.

The table above (Table 8) illustrates the learners’ opinions surrounding teaching in the subject of English. 32 of the 38 learners answered *agreed* with Statement 7: “ I would like the teacher to use more PAL methods during teaching”. This signifies a strong wish to continue learning through PAL. Statement 8, “I would like the teacher to use more varied learning methods during teaching”, received a variety of answers. When conducting the questionnaire, this statement needed the most clarification. To clarify, the researcher described the statement as “If you answer agree, you state that “*I want to use more different ways of learning.*” and if you answer disagree, you state that “*I want to continue learning through non-active learning methods.*” The majority of learners disagreed with statement 9, “ I think it was more difficult to learn grammar outside of the classroom”, but seven learners answered *agree* and *somewhat agree*. The responses to the last statement, “I would rather learn grammar through NAL methods.”, give a clear indication that the learner did not want to learn grammar primarily through regular classroom teaching. Merely 4 learners did not answer *disagree*.

In the open question in the questionnaire where the learners were given the opportunity to elaborate on their experiences, there was a clear trend in answers with repetitions of responses such as “*fun*” and “*enjoyed being outside*”. 26 out of the 38 learners who answered the questionnaire mentioned how they enjoyed being outside, and 14 mentioned the word “*fun*” specifically. Four used the word “*nice*”, one learner used the phrase “*loved it*”, and one even used the phrase “*tipp topp tomme opp*”, which translates to great. Four learners also

mentioned how they felt like they learnt more from the PAL method. On the flip side, there were some comments expressing concerns with the PAL method. There were two learners mentioned that they did not experience as much learning as expected. One learner expressed how PAL was a more difficult method to learn from, and one learner expressed how they disliked the PAL method. The figures below illustrate four excerpts from learners' answers to the open question.

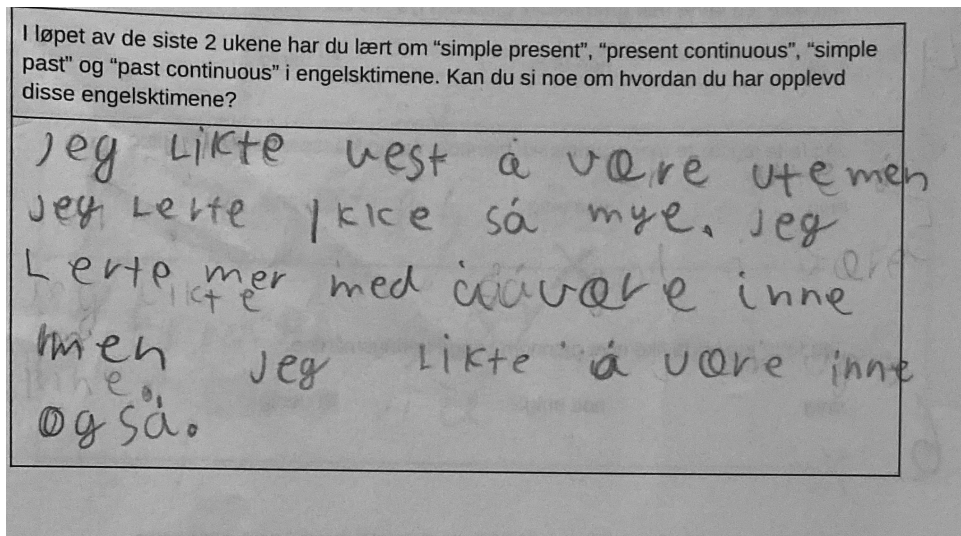


Figure 3. "I liked being outside the best but I did not learn as much. I learnt more when we were inside but I enjoyed being inside as well."

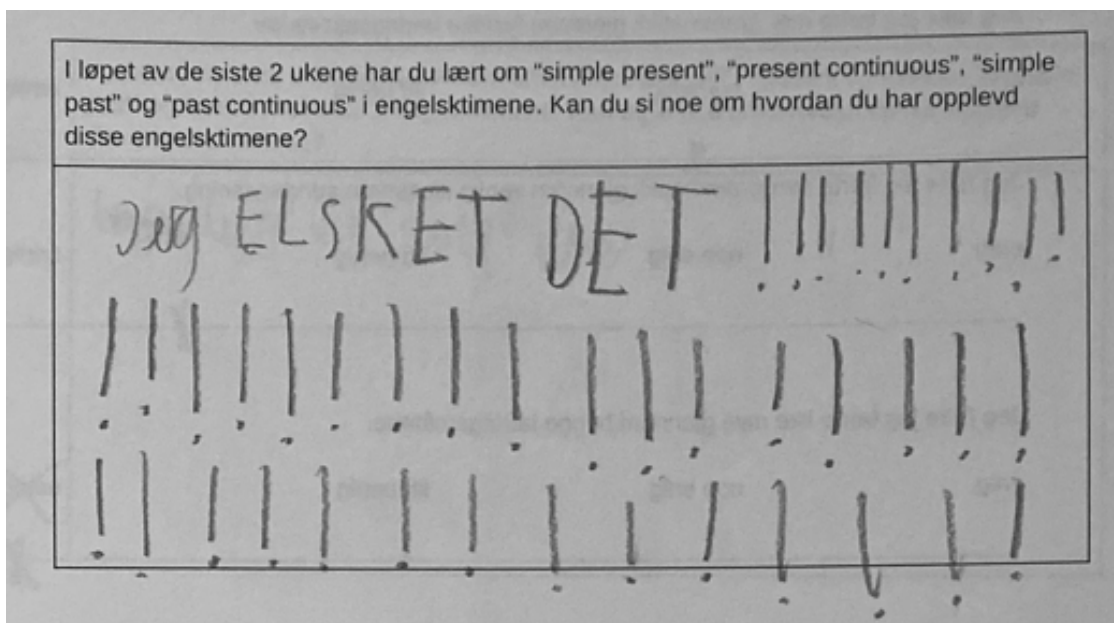


Figure 4. "I loved it!!!!!!!!!!!!!!..."

I løpet av de siste 2 ukene har du lært om "simple present", "present continuous", "simple past" og "past continuous" i engelsktimene. Kan du si noe om hvordan du har opplevd disse engelsktimene?

Jeg føler at det har
gått bra. Men jeg synes
at det var litt vanskelig.
Men det var gøy

Figure 5. "I feel like it has been going well. But I think it was a bit hard. But it was fun".

I løpet av de siste 2 ukene har du lært om "simple present", "present continuous", "simple past" og "past continuous" i engelsktimene. Kan du si noe om hvordan du har opplevd disse engelsktimene?

Jeg synes at disse engelsk timene
har vært veldig gøy og det er
veldig gøy å lære på denne måten.

Figure 6. "I think that these English lessons have been very fun and it is very fun learning in this way."

4.3 Advantages and disadvantages of PAL lessons from the perspective of six learners .

In order to understand more about how the learners perceived their learning process and enjoyment through PAL and NAL, interviews were conducted with six of the learners, in two groups of three. The interview contained five central questions, and the learners were able to elaborate on each question as they liked. The interviews had an emphasis on the learners' experience of the different learning methods, and the learners were informed that their answers were to help teachers create good learning experiences. The information gathered was coded, and the aspects found could be divided into two themes; advantages and disadvantages.

4.3.1 Advantages of PAL

The first theme is the advantages of PAL. The advantages look at what the learners found beneficial and positive with the PAL lessons. The interview started with an open question: "How did you experience the last few weeks with learning grammar?". And already at the first question, every learner in both groups mentioned some synonym of the word "*fun*". When asked why, the learners said how they enjoyed doing something different, they "*liked being outside*", they "*liked working together in groups*", and they "*liked the competitions*". In this question, there was no mention of an increase in enjoyment when it came to working with English grammar, but they mentioned how they enjoyed the aspects of working with PAL. There was also no other mention of enjoyment when it came to the NAL lessons other than the "working in groups" part. The second question was, "What did you enjoy the most with these grammar lessons?". One learner said, "*I liked working with [learning partner] on the orientation task. Looking for the tasks hidden in the trees and on the swings was fun*". Another learner chimed in, "*I agree with *****. I especially liked the task where you had to make a silly face.*". The last learner in said group mentioned the "snipp og snapp" game. When asked why, the learner said that it was fun racing and that it was fun winning almost every match. The other group gave similar answers, stating that they enjoyed the elements of cooperation, searching, and running.

One question asked what method the learners felt like they learnt the most from. One of the groups unanimously stated that they learned the most from PAL lessons. They said that they basically did what they usually do, but instead of working with tasks inside, they worked with the tasks outside. They had an explanation part at the beginning of the lessons that told them what to do, and the rest consisted of working with tasks. On the other hand, the second group was conflicted. They expressed that they did learn through PAL tasks but were unsure if they learned more with PAL tasks compared to NAL tasks. The learners discussed back and forth whether you can learn more outside of the classroom compared to inside the classroom.

- Learner 1: *“You learn more inside the classroom than outside. Inside, you have books, a whiteboard and pen and paper.”*
- Learner 2: *“I felt that I was able to learn outside. And we finished one task outside with pen and paper.”*
- Learner 1: *“But every lesson started inside with an explanation before we went out to do an activity.”*
- Learner 2: *“But I learnt the most when I was outside, I did not learn as much when we were inside.”*
- Interviewer: *“Learner 3, what do you think? When did you learn the most?”*
- Learner 3: *“I do not know where I learnt the most, but I think I learnt both places.”*
- Interviewer: *“Do you feel like you learned the best with physical activities or inside the classroom? Where did you feel like it was easier to learn?”*
- Learner 3: *“I think it was easier to learn outside.”*
- Interviewer: *“How come?”*
- Learner 3: *“Because I did not think about learning, but I learned something nevertheless.”*
- Learner 1: *“I agree with Learner 3.”*

When conversing with the other learners, they pointed out how they experienced learning in a different setting compared to the expectations from Learner 1. Learner 2 had clear statements regarding how they felt they learnt the best, and Learner 3 was conflicted but came to the conclusion that they felt *“it was easier to learn outside”*. When Learner 1 says they agree, it would seem like they agree with the comment regarding passive learning made by Learner 3,

not necessarily agreeing with learning the most or the best from PAL lessons outside. The interpretation of Learner 1's agreement is based upon other answers in the interview where they expressed similar feelings regarding learning through PAL methods.

The fifth question asked, "Do you have anything you want to say to the teachers that teach English grammar when it comes to how they teach English grammar?". Five of the six interview subjects agreed that "*The teachers should have more lessons outside.*" with an emphasis that it makes learning grammar more fun. One learner said, "*Learning grammar inside is always boring, but it was not boring learning grammar outside.*". The last learner of the six said that the "*teacher should both have lessons outside and inside, but mostly inside.*". The learners express primarily positive associations with PAL and seem pleased with the experience of PAL. The majority of learners enjoyed learning through a different method and considered PAL to be a fun and active way to learn grammar. There are some learners who express concern when it comes to learning outside of the classroom, and some even feel like they do not learn as much as they would with NAL.

In conclusion, the advantages of PAL from the perspective of the learners are the opportunity to learn outside, to work in groups, the competitions and the concept of passive learning. They express the want for more various methods of learning and the want for different learning areas.

4.3.2 Disadvantages of PAL

In regards to the negative sides of using PAL methods, two of the learners mentioned weather as a factor. "*It was fun being outside, but you remember the day it started raining a lot? That was not fun.*". This finding is particular to the version of PAL conducted in the research, the version of PAL that focuses on the physical aspect, the social aspect, and being outside. One learner said that the whispering task (husk svaret-kvissen) was too difficult. "*It was hard to remember quickly. When I got to the other side of the court, I always forgot what I was supposed to remember. I had to run many times up and down and up and down.*". Another learner mentioned how there was too much running. "*I liked being outside, but it was tiring*

running that much.”. Nevertheless, when asked what method they enjoyed the most, every learner chose the PAL method as their preferred method.

In the question regarding the negative sides to the English lessons, “What do you think has been the worst with grammar teaching in English?”. Learner 1 stated, “*It has been nice but it has been noisy.*”. Learners 2 and 3 seemed to agree on the noisy part. However, when asked if it was problematic that the lessons were more noisy, all learners agreed that it helped being outside, and if they had been inside, it could have been too noisy.

In summary, the disadvantages of PAL from the perspective of the learners are the instability of the weather, exhaustion from running, loud noise, and difficulty remembering. However, the learners express that it does not take away from PAL being the most enjoyable learning method, compared to NAL.

5. Discussion

To investigate the research questions regarding learning outcomes and the learners' perception of the PAL project, the following chapter presents a discussion of the results presented in the previous chapter. The current chapter has been divided into two topics. The first topic discussed the learning outcome of the PAL project as well as the learners' perceived learning outcome of the project. The second topic discusses the learners' experience with the benefits of PAL. It looks at the learners' preference towards learning through PAL compared to NAL. It looks at what components of PAL lessons could contribute to the learners' enjoyment of the lessons. It also looks at how the majority of the learners found the aspect of learning outside fun and felt like they learnt more by being outside. Lastly, the second topic deals with the disadvantages of using PAL methods from the learners' perspective. The results will be discussed in relation to theory and previous research addressed in Chapter 2.

5.1 The increase in learners' knowledge

As stated in the results section, task 1, which looked at whether the learners knew how to separate the two tenses and whether they knew in which context the tenses could be appropriately used, created similar learning outcomes from both groups. In task 2, which looked at whether the learners knew how to produce sentences with the tenses, Group X had a greater increase in results. Meanwhile, Group Y had an increase of 13%, and Group X had an increase of 23%. In task 3, which looked at the rules of when to use the different tenses, Group Y had a greater increase in results. Meanwhile, Group Y had an increase of 41%, and Group X had an increase of 24%. The finding coincides with findings in previous research, where studies on the academic benefits of PAL found minor to moderate benefits on academic achievement after a PAL intervention (Bartholomew and Jowers, 2011; Bedard et al., 2019; Daly-Smith et al., 2018; Donnelly et al., 2009; Donnelly and Lambourne, 2011; Kibbe et al., 2011; Norris et al., 2015; Norris et al., 2020; Resaland et al., 2016). There is not a massive increase in learning outcomes found in this study. However, it is important to note that the

current study is a short intervention investigating PAL as a method of learning. The increase could have differed if the study had been prolonged.

There could be several factors influencing the learning outcome. As previous research has commented on, there is a difficulty in separating what creates the increase in learning outcomes. Is it a consequence of Time on Task, a consequence of increased motivation, a consequence from the physical aspect of the task, or a consequence of learning in groups? Looking at the previous research, there are several different theories as to where the increase comes from. The teachers interviewed by Lerum et al. (2021, p. 5) found that the learners' concentration increased when working with PAL, and a greater concentration could affect the overall learning outcome. A similar finding was the increase in time on task and how the increase could play a positive part in learning outcomes (Bacon & Lord, 2021; Daly-Smith et al., 2018; Grieco et al., 2016; Kibbe et al., 2011). Bartholomew and Jowers (2011, p. 54) concluded that the benefit from their intervention came from the PA aspect. Vazou et al. (2012, p. 260) believed that academic performance is dependent on the academic motivation that PA create in the learning environment. Lilic and Bratoz (2020, p. 60) suggest that grammar games can benefit learning outcomes due to effective practice and meaningful context. Previous research looking into grammar games found the games to be learner-centred and promote communicative competence as well as a reduction in learning anxiety (Lilic & Bratoz, 2020, p. 60; Yolageldili & Arikan, 2011, p. 227), which could result in an increase in learning outcome. As previous research indicates, it is a complex matter, and the increase can be a result of several factors. Comparing the current study to previous research, the small increase in learning outcomes could be a result of TOT. However, the current research did not look into TOT, and the increase in learning outcomes could be a result of other factors, which will be elaborated on in sections 5.2 and 5.3.

One of the most interesting findings from the results was the perceived learning from the learners. The learners mentioned the experience of learning more grammar through PAL methods. There is a lack in previous research looking at learners' perceived competence, and the one mentioning perceived competence used the Intrinsic Motivation Inventory, which gives statements such as: "I think I am pretty good at this activity", "I am satisfied with my performance at this task", "I was pretty skilled at this activity", and "After working at this

activity for a while, I felt pretty competent” (Vazou et al., 2012, p. 255). The statements do not necessarily look at academic competence but rather competence in the activity. However, in the current study, the learners mentioned how they felt like they learnt more from PAL lessons compared to NAL lessons. In the questionnaire, 35 of 38 learners answered that they felt like they learnt more grammar through PAL methods. And in the interview the learners stated that they believed it to be easier to learn grammar outside. The finding is interesting due to the lack of previous research regarding the academic learning outcome and that the learners experienced PAL to be an easier learning method to work with.

To summarise, the learners had an increase in learning outcomes when it comes to learning verb tenses through a PAL method. This indicates that PAL is a learning method that could be used when teaching grammar, more specifically verb tenses. The learners also felt like they experienced greater learning when they learnt through a PAL method, which is important to take into consideration when planning future lessons.

5.2 The learners’ preferred PAL lessons compared to NAL lessons

The learners expressed that they preferred learning through PAL methods compared to NAL methods, where 34 of the learners answered that they agreed to the statement “I enjoyed learning grammar through PAL methods the best”, and the last 4 answered that they somewhat agreed to the statement. 36 out of 38 learners answered that they, to a certain degree, want the teachers to use more PAL methods when teaching. The findings align with the findings from previous research. For instance, Bedard et al. (2019, p. 12) looked at six studies that measured the learners’ enjoyment of active classrooms and found higher levels of enjoyment when it came to active classrooms compared to non-active classrooms. The findings are supported by the study by McMullen et al. (2019, pp. 323-324), which looked at teachers expressing benefits with PAL, and one of the main reasons to continue using PAL was the learners' expression of enjoyment of the lessons. Likewise, Martin and Murtagh (2017, p. 224) found that the learners' view of English lessons changed from boring and sedentary to expressing enjoyment and excitement. As well as the result in the questionnaire,

the learners have expressed their enjoyment of the PAL lessons, which could indicate how they look at PAL as a positive addition to the EFL grammar lessons.

There are several factors that could play a part in the documented increased enjoyment from the learners. One factor could be the playfulness which was a result of PAL lessons. In the open question in the questionnaire, 14 learners mentioned the word “*fun*” specifically. Other synonyms for fun were also mentioned by the learners. In the interviews, the learners expressed how they enjoyed the playfulness of the tasks given. “*I liked working with *learning partner* on the orientation task. Looking for the tasks hidden in the trees and on the swings was fun,*” and “*I agree with *****. I especially liked the task where you had to make a silly face.*”. The finding is supported by Yacob and Yunus (2019, p. 213), who comment on how the playful approach could lower the threshold for participation. They further elaborate on how teaching grammar through games is an efficient and adventurous option for learners who are not cooperative or interested in grammar lessons. When it comes to relevant theory for learning, Skaalvik and Skaalvik (2015, p. 11) elaborate on the importance of creating lessons that arouse interest, curiosity and excitement. Utilizing a PAL method could increase the learners' enjoyment of grammar lessons due to the lower threshold for participation and the excitement the learners have regarding games.

One factor that could play a part in the enjoyment is the variation it created in the teaching. In the questionnaire, 23 out of 38 learners answered that they wanted teachers to use more variation in their teaching. In the interviews, the learners mentioned how they enjoyed doing something different. In previous research, the teachers have commented on the variation PAL has helped create in teaching. The teachers questioned in the study by Martin and Murtagh (2017, p. 255) enjoyed how the lessons supplemented the lessons. In the research by Dyrstad et al. (2018, pp. 8-9), the teachers commented on the enjoyment of the added variation to the school day given to both the teachers and the learners. The teachers also share how they experienced improvement in academically challenged learners. The statement coincides with other research regarding PA and learners' motivation. Vazou et al. (2012, p. 260) found that the experience of mastery is prone to increase motivation, which could help increase the learners' enjoyment. From the perspective of relevant theory on learning, the experience of mastery could be a result of the physical aspect of PAL. As mentioned in section 2.3.2, when

it comes to the interconnectedness of the holistic view of learning, mastery of one of the skills could positively affect other parts. PAL could facilitate self-concept development and contribute to confidence in oneself and one's own abilities (Vingdal, 2014, pp. 38-40). This coincides with the findings in Lerøys et al.'s (2021, p. 5) research, where the teachers noticed the learners taking more risks in engaging with tasks introduced with PAL. Another research commenting on the learners' enjoyment is the study done by McMullen et al. (2016, p. 325). The teachers mention how movement is important for learners' enjoyment. The study highlights how student enjoyment is recognized as an important factor when considering whether or not to implement PAL lessons in one's teaching.

Another factor that could influence the learners' enjoyment is the social aspect of learning through PAL. In the interviews, the learners mention the social aspect of learning as a positive aspect of PAL. They stated that they "*liked working together in groups*". Previous research also mentions the social aspect as an important part of learning through PAL. Dyrstad et al. (2018, p. 5) mention how the academically stronger learners could give support in group activities. McMullen et al. (2019, p. 63), which also looks at the learners' experience with PAL, mention how the learners derive enjoyment from interacting and participating with peers as well as the physically active component. The social aspect was one of the most prominent findings in Martin and Murtagh's (2017, p. 224) study looking directly at the learners' experience with PAL. They found that the learners appreciated PAL due to their engagement with their peers. Comparing the findings and previous research with relevant theories on learning, one sees clear connections between PAL and social learning. Vingdal (2014, p. 44) also emphasizes the importance of viewing communication and physical actions as situated in context. Vygotsky highlights how the interaction with the environment through social relations creates the driving force in the learning processes (Manger et al., 2013, pp. 183-184).

The last factor mentioned by the learners was the enjoyment of learning outside and how the learners found it easier to learn outside. In the open question in the questionnaire, 26 out of the 38 learners mentioned the enjoyment of being outside. 30 of the 38 learners disagreed with the statement, "*I think it was more difficult to learn grammar outside of the classroom*". In the interview, one of the learners mentioned how they felt it was easier to learn outside.

The interviews also revealed that the learners believed the teachers “*should have more lessons outside*” and “*Learning grammar inside is always boring, but it was not boring learning grammar outside*”. The learners also commented on how important it was for PAL to be conducted outside, with the reason being; that it would have been too noisy inside. The benefits of changing the learning arena are also mentioned in previous research. The learners interviewed by Dyrstad et al. (2018, p. 7) mentioned how they liked being outside and that it contributed to their enjoyment of the lessons. Another research that looked at the benefits and constraints of PAL found the change in the environment both positive and negative, but this will be elaborated more in the next section. The teachers interviewed by Lerum et al. (2021, p. 5) commented on how the change of scenery helped the learners become more participatory, both physically and verbally. They found that the learners who usually are quieter and hide away in the classroom excelled when they got to work outside in the schoolyard. Lerum et al. (2021, p. 5) found that “*more pupils took the risk of engaging with tasks introduced around PAL, compared to traditional lecture-based teaching.*”. Daly-Smith et al. (2021, p. 11) comment on similar benefits to using PAL, where the outdoors is a contributing factor to the learners' engagement with PAL.

The disadvantages mentioned by the learners are few compared to the advantages; however, they are important to mention and keep in mind when planning PAL lessons and when choosing whether to implement PAL lessons or not. As mentioned in the previous section, learners elaborate on the weather as a negative side to PAL lessons and learning outside. One lesson in the PAL project had rainfall, which two learners did not appreciate. The difficulty with weather conditions is common amongst those who want to conduct PAL lessons outside. In Routen et al. (2018, p. 54), teachers mention how the aspect of weather was difficult to manage because the alternative hall spaces were often fully booked.

In the interviews, the learners mentioned the increase in noise during the PAL lessons. This is a concern as there is a handful of previous research regarding facilitators and barriers when it comes to PAL mentioning the lack of control as a barrier to PAL. McMullen et al. (2016, p. 325) mention how control was one factor that the teachers experienced as difficult. The teachers in Routen et al. (2018, p. 54) mention how PAL could be used to re-focus the

learners. However, the teachers experienced that PAL could be used to “curtail unwanted individual behavioural incidents”.

To summarise this section, there are a lot of advantages to learning through a PAL method and there are some disadvantages to learning through a PAL method. There are a majority of advantages mentioned by the learners to working with the PAL method and they express contempt with the learning method. There are learners who do not prefer the PAL method compared to the NAL method. However, that is the case for most learning methods, the learners like different methods and they have different needs, and as a result, it is important for teachers to have variation in their teaching.

6. Conclusion

Physical active learning (PAL) has increased in popularity in the last few years as a result of the decrease in physical activity among learners in today's society (Bartholomew & Jowers, 2011; Daly-Smith et al., 2018; Donnelly and Lambourne, 2011; Dyrstad et al., 2018; Grieco et al., 2016; Kibbe et al. 2011; Norris et al., 2015; Skage et al., 2020). In Norwegian schools, the Norwegian Education Act emphasise the need for physical activity besides the subject of PE and how physical activity needs to be facilitated to create variety, mastery, community and the experience of joy in the school day (regulations to the Education Act, 2006, §1-1a).

The studies looking at PAL include mostly subjects such as mathematics, science, reading and spelling in Norwegian schools (Skage et al., 2020, p. 4) and internationally (Daly-Smith et al., 2018, pp. 4-6; Kibbe et al., 2011, p. 47). These studies looking at PAL have found a minor to moderate benefit in academic achievement after PAL interventions (Bartholomew and Jowers, 2011; Bacon & Lord, 2021; Bedard et al., 2019; Daly-Smith et al., 2018; Donnelly et al., 2009; Donnelly and Lambourne, 2011; Kibbe et al., 2011; Norris et al., 2015; Norris et al., 2020; Resaland et al., 2016). The studies have also found PAL to create a variation in teaching as well as being beneficial to increase motivation and engagement (Dyrstad et al., 2018; Lerum et al., 2021; Mavildi et al., 2017; McMullen et al., 2016; McMullen et al., 2019; Martin & Murtagh, 2017). Nonetheless, few studies have looked at the Norwegian EFL classroom, and the learners' perception of their own learning experience as well as learning outcome. As such, the current study is set up to explore the learning outcome of working with PAL methods in the EFL classroom, to look at the learners' enjoyment of PAL methods, and to look at the learners' thoughts surrounding the PAL method. The study conducted a mixed-method design to gather data. The current study used the data collection methods of pretest/posttest/delayed posttests, questionnaires and group interviews to answer the research questions:

- Does Year 5 EFL learners' knowledge about the uses of and ability to correctly apply the present simple and the present continuous in sentences develop through PAL lessons compared to NAL lessons, and if so, to what extent?
- What are the pupils' perceptions of their own learning process and enjoyment of the two lessons after having experienced both?

6.1 Summary and Major Findings

In line with previous research, the study found that learning through PAL methods created similar learning outcomes compared to NAL lessons. For instance, learners learning through PAL methods had a greater increase in results in tasks 1 and 3, and learning through NAL methods had a greater increase in results in task 2. Both groups found simple present to be more challenging compared to present continuous. Simple present therefore created a greater increase in test scores. When looking into the learners' perceptions of their own gain in knowledge, the learners stated that they felt like they learnt more through PAL methods. Some learners found it more difficult to learn outside of the classroom. However, the majority of the learners experienced PAL as an easier method of learning.

Corresponding with previous research, the study found an increase in learners' enjoyment of learning grammar through PAL. The learners expressed a great desire to continue working with PAL as a learning method. The learners found benefits such as the playful approach to learning, added variation, cooperative learning, being outside, and competitiveness. The playful approach to learning could create interest, curiosity and excitement among the learners. The added variation could create the experience of mastery and, as a result, increase enjoyment. In line with previous research, cooperativeness was something the learners in the current study drew enjoyment from. Most of the learners expressed how they preferred learning outside compared to inside. The change in scenery could help the learners to become more participatory, which could increase enjoyment through being able to join in the games and the social learning community. In line with The Directorate of Education's demand for learners' participation when it comes to the methods of learning, the preference for learning through a PAL method compared to a NAL method gives valuable information to teachers.

The current study looked at using PAL as a method of teaching grammar. Whether or not the learners enjoyed working with grammar is not explicit in the current research. On the other hand, the learners gave indications that they were looking forward to the PAL lessons. As a result, one could draw a correlation that learning grammar did not seem as frightening or boring as it could have been viewed without using a PAL method. As such, the current

study's overall findings indicate that the learners perceived PAL to be a method of learning that they wanted to use more.

6.2 Implications

The current study is set to investigate whether the learners' knowledge surrounding the verb tenses simple present and present continuous developed through PAL lessons compared to NAL lessons and look into the learners' perceptions of their own learning process and enjoyment of PAL lessons. The current study identified aspects of the PAL method that the learners considered when using the method to learn about verb tenses. These findings had implications for teaching in the EFL classroom in the future.

One implication being the learners' learning outcome from the PAL lessons compared to NAL lessons. The study found that the learning outcome increased similarly when learning through PAL versus learning through NAL. However, considering the prominent increase in enjoyment, one could perceive PAL as a valuable learning method. PAL has not been shown to create massive differences when it comes to the learning outcome. Nonetheless, it has been shown to increase the learners' enjoyment. Previous research supports this finding, where studies on the academic benefits of PAL have found minor to moderate benefits in academic achievement after PAL interventions. The studies also comment on how the learning outcome from PAL lessons needs more research and confirmation (Bartholomew and Jowers, 2011; Bedard et al., 2019; Daly-Smith et al., 2018; Donnelly et al., 2009; Donnelly and Lambourne, 2011; Kibbe et al., 2011; Norris et al., 2015; Norris et al., 2020; Resaland et al., 2016). Regardless of learning outcome, teachers believe PAL to be a valuable method to use when teaching (Daly-Smith et al., 2018, p. 14). The findings implied that teachers should not only employ learning methods that create the biggest increase in learning outcomes but also look at the other aspects of teaching.

Another implication is the learners' perspectives on working with a PAL method. The learners perceived greater learning outcomes from learning through the PAL method. The learners also derived enjoyment from learning in a social learning community, from the

variation PAL created to the teaching, from the playfulness and competitiveness of using games, and from the aspect of learning in a different learning arena. The finding coincides with previous research finding similar benefits to the PAL method of learning (Dyrstad et al., 2018; Lerum et al., 2021; Mavildi et al., 2017; McMullen et al., 2016; McMullen et al., 2019; Martin & Murtagh, 2017). The findings implied that teachers should create more variation in their teaching, work with the learners to find learning methods they enjoy, and increase the employment of these learning methods.

Other implications look into the disadvantages of using PAL as a learning method. Some learners found PAL to create more noise in the learning environment. This coincides with the previous research commenting on how the teachers mentioned the difficulty of regaining control (McMullen et al., 2016). Another disadvantage mentioned by the learners was the instability of the weather. Previous research also mentions the difficulty of the weather conditions and includes the factor of lack of alternative hall spaces (Routen et al., 2018). The disadvantages mentioned are mostly superficial, and teachers from previous research emphasise that they perceived PAL to be a beneficial addition to their teaching nonetheless (McMullen et al., 2016; Martin & Murtagh, 2017).

These findings suggest that PAL should be included to a larger extent in the EFL classroom, as they might provide greater enjoyment and variation to one's teaching and could increase learning outcomes and participation, especially for learners who are struggling and/or introverted.

6.3 Possible Limitations and Avenues for Future Research

The study does not come without limitations. One of the limitations identified is the short period of time for conducting the intervention. The learning outcomes were based on 3x20-minute lessons, and the learners' perspectives on learning through a PAL method were based on 6x20-minute lessons. The learning outcome could have been greater, and the learners' opinions could have changed with a more longitudinal project. Another limitation is the small sample size, receiving 46 pretests, 45 delayed posttests, 38 questionnaires and six

interviewees, the study provides insight into the two groups' learning outcomes, and their perceptions of PAL. The small sample size impacts the transferability of the research. The researcher's relationship with the learners has its benefits and weaknesses. The learners knew the researcher and with close acquaintance comes a greater feeling of trust. However, the learners could answer questionnaires and interviews with the researcher in mind. Meaning, that they answer not what they genuinely believe but what they expect or think the researcher wants to hear. The interpretation of data is another limitation of the current study. With the interpretation of data, there is a possibility of research bias. despite the awareness of research bias and actively working to remain unbiased, there is always a possibility of the researcher being biased.

Future research should strengthen the transferability by employing a larger sample size. Further, future research should conduct a prolonged intervention to look at whether the learners' experience with PAL is exclusive to it being a new and short intervention. A prolonged intervention could also establish a more substantial claim as to whether the increase in learning outcomes is a result of PAL methods. The current study looks at learning outcomes from a group level, it could be interesting to look at the individual learners' learning outcomes to see who benefits the most from learning through PAL methods. Similarly, including different varieties of PAL methods could lead to different results in future research. The current study has found that one could use PAL methods to teach verb tenses in the EFL classroom. Future researchers could conduct similar studies in Norwegian EFL classrooms looking into whether PAL could be used when teaching other aspects of English. The current research looks primarily at drilling exercises, it would be interesting to see if PAL could have other usages.

7. References

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8. Appendices

Appendix 1: Consent Forms

Vil du delta i forskningsprosjektet

Undervisning av engelsk grammatikk gjennom en fysisk aktiv læringsmetode

Dette er et spørsmål til deg angående ditt barn om å delta i et forskningsprosjekt hvor formålet er å finne ut om elevene sitter igjen med tilstrekkelig læringsutbytte ved å lære engelsk grammatikk gjennom en fysisk aktiv læringsmetode. Et annet formål er å se om elevene opplever at de lærer gjennom en fysisk aktiv læringsmetode. I dette skrevet gir vi deg informasjon om målene for prosjektet og hva deltakelse vil innebære for deg/ditt barn.

Formål

Tid brukt i klasserom er vist å være en av de største bidragsyterne til stillesittende tid hos barn. En metode for å få elevene i gang, samt ikke ta tid fra undervisningen, er å inkludere fysiske aktiviteter i undervisningen. Masterprosjektet handler om å bruke fysiske aktiviteter som læringsmetode, og finne ut om det, sammenlignet med tradisjonell undervisningsstil, produserer et like godt læringsutbytte. Prosjektet varer i 2 uker, 6 engelsktimer der 20 min av hver time blir brukt til prosjektet. Prosjektet er delt i to, der første delen er utformet slik at hver av klassene får oppleve en av læringsmetodene der læringsutbyttet blir målt i en før-test og en etter-test som igjen sammenligner læringsutbyttet til klassene. Etter læringsutbyttet er målt begynner del to av prosjektet som angår elevenes opplevelse av læringsmetodene. Klassene bytter læringsmetode slik at elevene kan utdype om hvilken metode de likte best å arbeide med. Resultatene vil bli brukt i besvarelsen av en masteroppgave.

Hvem er ansvarlig for forskningsprosjektet?

Universitetet i Stavanger er ansvarlig for prosjektet.

Hvorfor får ditt barn spørsmål om å delta?

Jeg har arbeidet en del som vikar på Eigerøy skole og har allerede en relasjon til elevene noe som gjør det enklere å gjennomføre prosjektet. Jeg har et godt samarbeid med ledelsen, samt kollegiale, som har gitt meg spillerom til å gjennomføre prosjektet på Eigerøy skole. Det er mye forskning som anbefaler å leke seg til læring på de yngre trinnene, særlig 1-4.trinn. Det finnes derimot ikke like mye forskning på de eldre trinnene, derfor er jeg interessert i å gjennomføre prosjektet på 5.trinn. Begge klassene får gjennomføre begge læringsmetodene.

Hva innebærer det for ditt barn å delta?

Ditt barn vil gjennomføre undervisningsøkter med ulik tilnærming til læring. Eleven vil gjennomføre en før-test for å se kunnskapsnivået til eleven angående et spesifikt grammatisk konsept før prosjektet starter. Eleven vil så enten gjennomføre den fysiske tilnærmingen eller den tradisjonelle tilnærmingen gjennom tre læringsøkter. Etter det blir eleven å gjennomføre en etter-test for å se om eleven lærte noe. Del to av prosjektet handler om at eleven bytter tilnærming slik at eleven opplever den andre læringsmetoden også, for så å gjennomføre en spørreundersøkelse om hvordan eleven opplevde begge læringsmetodene og hvilken eleven foretrekker. For å få en bedre forståelse for hva elevene faktisk tenker om de ulike tilnærmingene til læring blir jeg å gjennomføre to gruppeintervju med tre elever på hver gruppe. For å passe på at min rolle ikke er framtrædende eller ledende, samt passe på at jeg får med meg de sentrale ideene, vil intervjuet bli innspilt på en lydopptaker. Hvis ditt

barn deltar har du mulighet til å se både spørreskjemaet og intervjuguiden på forhånd ved å ta kontakt.

Det er frivillig å delta

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

Det eleven kommer til å være en del av uansett er undervisningsdelen av prosjektet. Det vil si innlæringen av det grammatiske konseptet og aktivitetene for å lære konseptet. Det eleven kan få fritak fra er før- og etter-testen, samt være del i spørreundersøkelsen og intervjuet. Eleven vil få alternative oppgaver å løse mens de resterende i klassen gjennomfører før- og etter-testen og spørreundersøkelsen.

Ditt personvern – hvordan vi oppbevarer og bruker dine/ditt barns opplysninger

Vi vil bare bruke opplysningene om deg/ditt barn til formålene vi har fortalt om i dette skrevet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket. Før- og etter-testen, samt spørreskjemaet, blir å være anonym og for å forsikre anonymitet blir analysen å fokusere på klassesvar framfor individuelle svar. Intervjuet anonymiseres fortløpende under transkribering der elevene kommer til å bli referert til som «elev A», «elev B» og «elev C» og lydfilen vil bli slettet med en gang transkriberingen er fullført. De som vil ha tilgang til dokumentene er student og veileder. Alle masteroppgaver med karakter E og høyere vil bli publisert, deltakerne og skolen vil ikke gjenkjennes ved publisering.

Hva skjer med personopplysningene dine når forskningsprosjektet avsluttes?

Prosjektet vil etter planen avsluttes når oppgaven blir godkjent [ca. 10.06.2023]. Lydopptaket slettes etter hvert som transkriberingen finner sted. Spørreskjemaet og før- og etter-testen makuleres rett etter analysen av dokumentene.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi behandler opplysninger om deg/ditt barn basert på ditt samtykke.

På oppdrag fra Universitetet i Stavanger har Sikt – Kunnskapssektorens tjenesteleverandørs personverntjenester vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Dine rettigheter

Så lenge du kan identifiseres i datamaterialet, har du rett til:

- innsyn i hvilke opplysninger vi behandler om deg, og å få utlevert en kopi av opplysningene
- å få rettet opplysninger om deg som er feil eller misvisende
- å få slettet personopplysninger om deg
- å sende klage til Datatilsynet om behandlingen av dine personopplysninger

Hvis du har spørsmål til studien, eller ønsker å vite mer om eller benytte deg av dine rettigheter, ta kontakt med:

- *Universitetet i Stavanger* ved Linnea Buktenes (linnea.buktenes@hotmail.com/45174104).
Veileder for prosjektet er Cecilie Waallann Brown (cecilie.w.brown@uis.no/92470087)
førsteamanuensis ved Universitetet i Stavanger.
- Vårt personvernombud: Rolf Jegervatn (personvernombud@uis.no)

Hvis du har spørsmål knyttet til vurderingen av prosjektet som er gjort av Sikts personverntjenester ta kontakt på:

- Epost: personverntjenester@sikt.no, eller telefon: 53 21 15 00.

Med vennlig hilsen

Cecilie Waallann Brown
(veileder)

Linnea Buktenes
(student)

Samtykkeerklæring

Jeg har mottatt og forstått informasjon om prosjektet *Undervisning av engelsk grammatikk gjennom en fysisk aktiv læringsmetode*, og har fått anledning til å stille spørsmål. Jeg samtykker at mitt barn kan:

- delta i en før-test og en etter-test
- delta i et spørreskjema
- delta i et intervju

Jeg samtykker til at.....s (navn på barn)

opplysninger behandles frem til prosjektet er avsluttet.

(Signert av foresatt til prosjektdeltaker, dato)

Appendix 2: Lesson 2 “Husk svaret-kvissen”

Task	Alternative	
Hvilken verbbøying brukes når vi snakker om ting som har skjedd?	Simple present	Present continuous
Finn verbet som er skrevet i “present continuous”.	cooking	washing
Finn verbet som er skrevet i “simple present”.	To work	To play
Finn setningen som inneholder et verb i “present continuous”.	You are watching a video.	It is raining outside.
Hvilken verbbøying brukes når vi snakker om noe som skjer vanligvis eller ofte?	Simple present	Present continuous
Finn setningen som inneholder et verb i “simple present”.	I play soccer every weekend.	Fiona watches cartoons every day.
Hvilken verbbøying brukes når vi snakker om fakta?	Simple present	Present continuous
Hvilken verbbøying brukes når vi snakker om ting som skjer akkurat nå?	Simple present	Present continuous
	played	written
	took	singing
	To dance	used to dance

Appendix 3: Lesson 3 “Stjerneorientering”

Vi bruker “simple present” når vi snakker om noe som skjer vanligvis eller ofte.

Oppgave:

Skriv en setning på engelsk som inneholder et verb i “simple present”.

Vi bruker “simple present” når vi snakker om fakta.

Oppgave:

Skriv en faktasetning på engelsk.

Vi bruker “present continuous” når vi snakker om ting som skjer akkurat nå.

Oppgave:

Skriv en setning på engelsk som inneholder et verb i “present continuous”.

Oppgave:

Skriv en setning på engelsk om hva du gjør hver morgen.

+ Hvilken verbform har du brukt?

Oppgave:

Skriv en setning på engelsk om noe du gjør akkurat nå.

+ Hvilken verbform har du brukt?

Oppgave:

Skriv ned et verb på engelsk som er skrevet i “simple present” og et verb på engelsk skrevet i “present continuous”.

Oppgave:

Lag den morsomste grimasen du kan til en av lærerne.

Appendix 4: Pretest, posttest and delayed posttest

Sett strek under riktig bruk av verb i "simple present" og "present continuous" i setningene.

When I get up in the morning, I **play/am playing** my drum.

We often **play/are playing** soccer at school.

I **talk/am talking** on the phone, be quiet!

I get up early every day for school, but I **try/am trying** to sleep in on Sundays.

Crocodiles **live/are living** in the water.

She **wears/is wearing** sunglasses at the moment.

My mom usually **sings/is singing** in the shower.

Kangaroos **jump/are jumping** quite far.

He **runs/is running** right now.

I **see/am seeing** my grandparents once a month.

Beskriv hva du vanligvis gjør om morgenen før du skal på skolen. Skriv minst 3 setninger på engelsk. (står opp, børster håret, pusser tennene, spiser frokost....)

Skriv minst 3 setninger på engelsk om noe du gjør akkurat nå. (skriver, puster, sitter, snakker.....)

Når bruker vi verb i "simple present" (eksempler på verb i "simple present" er "play/plays", "run/runs", "swim/swims")?

- Vi bruker "simple present" når vi snakker om ting som har skjedd.
- Vi bruker "simple present" når vi snakker om noe som skjer vanligvis eller ofte.
- Vi bruker "simple present" når vi snakker om ting som skjer akkurat nå.
- Vi bruker "simple present" når vi snakker om fakta.

Når bruker vi "present continuous" (eksempler på verb i "present continuous" er "am/are/is playing", "am/are/is running", "am/are/is swimming")?

- Vi bruker "present continuous" når vi snakker om ting som har skjedd.
- Vi bruker "present continuous" når vi snakker om noe som skjer vanligvis eller ofte.
- Vi bruker "present continuous" når vi snakker om ting som skjer akkurat nå.
- Vi bruker "present continuous" når vi snakker om fakta.

Appendix 5: Questionnaire

I løpet av de siste 2 ukene har du lært om "simple present", "present continuous", "simple past" og "past continuous" i engelsktimene. Kan du si noe om hvordan du har opplevd disse engelsktimene?

Nedenfor finner du ti ulike uttalelser. kryss av på hvor enig/uenig du er i uttalelsen.

Jeg likte best å lære grammatikk gjennom fysiske læringsaktiviteter.

enig noe enig litt uenig uenig

Jeg likte best å lære grammatikk gjennom vanlig klasseromsundervisning.

enig noe enig litt uenig uenig

Jeg likte å lære grammatikk gjennom begge læringsmåtene.

enig noe enig litt uenig uenig

Jeg følte jeg lærte mer grammatikk gjennom fysiske læringsaktiviteter.

enig noe enig litt uenig uenig

Jeg følte jeg lærte mer grammatikk gjennom vanlig klasseromsundervisning.

enig noe enig litt uenig uenig

Jeg følte jeg lærte like mye gjennom begge læringsmåtene.

enig noe enig litt uenig uenig

Jeg vil at læreren skal bruke mer fysiske læringsaktiviteter i undervisningen.

enig noe enig litt uenig uenig

Jeg vil at læreren skal bruke mer varierte læringsformer i undervisningen.

enig noe enig litt uenig uenig

Jeg synes det var vanskeligere å lære grammatikk utenfor klasserommet.

enig noe enig litt uenig uenig

Jeg vil heller lære grammatikk gjennom vanlig klasseromsundervisning.

enig noe enig litt uenig uenig

Appendix 6: Interview guide

Hvordan synes dere de to siste ukene med grammatikkundervisning i engelsk har gått?
Hvorfor har det gått

Hva synes dere har vært artigst med grammatikkundervisningen i engelsk? Hvorfor?

Hva synes dere har vært dårligst med grammatikkundervisningen i engelsk? Hvorfor?

Vi har lært grammatikk på to helt forskjellige måter. Med hvilken læringsmåte følte dere at dere lærte mest/best? Kan dere tenke dere hvorfor dere lærte mest/best gjennom den måten?

Har dere noe dere ønsker å si til engelsk lærere som underviser i grammatikk når det kommer til måten de underviser?

Har dere en siste kommentar?

Appendix 7: SIKT Approval



[Meldeskjema](#) / [Teaching grammar through physical activities](#) / Vurdering

Vurdering av behandling av personopplysninger

Referansenummer
494641

Vurderingstype
Standard

Dato
20.01.2023

Tittel

Teaching grammar through physical activities

Behandlingsansvarlig institusjon

Universitetet i Stavanger / Fakultet for utdanningsvitenskap og humaniora / Institutt for grunnskolelærerutdanning, idrett og spesialpedagogikk

Prosjektansvarlig

Cecilie Waallann Brown

Student

Linnea Buktenes

Prosjektperiode

29.11.2022 - 01.12.2023

Kategorier personopplysninger

Alminnelige

Lovlig grunnlag

Samtykke (Personvernforordningen art. 6 nr. 1 bokstav a)

Behandlingen av personopplysningene er lovlig så fremt den gjennomføres som oppgitt i meldeskjemaet. Det lovlige grunnlaget gjelder til 01.12.2023.

[Meldeskjema](#)

Kommentar

OM VURDERINGEN

SIKT 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.

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.

FØLG DIN INSTITUSJONS RETNINGSLINJER

Vi har vurdert at du har lovlig grunnlag til å behandle personopplysningene, men husk at det er institusjonen du er ansatt/student ved som avgjør hvilke databehandlere du kan bruke og hvordan du må lagre og sikre data i ditt prosjekt. Husk å bruke leverandører som din institusjon har avtale med (f.eks. ved skylagring, nettspørreskjema, videosamtale el.)

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).

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. Se våre nettsider om hvilke endringer du må melde: <https://sikt.no/melde-endringer-i-meldeskjema>

OPPFØLGING AV PROSJEKTET

Vi vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Lykke til med prosjektet!