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Physically active learning in the English subject

A qualitative study of teachers with physically active learning (PAL) competence and their use of PAL in the English subject

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Acknowledgments

As our journey as students at the University of Tromsø - The Arctic University of Norway comes to a close, we present this thesis as the culmination of our efforts. The process of writing this thesis has been demanding but at the same time, a highly enriching experience for us. We have taken a deeper look at the field of physically active learning and its place in the English subject.

We wish to express our sincerest gratitude to our project supervisor Ingrid K. Jakobsen, for the continuous support, encouragement, and feedback that she provided us with. Furthermore, we would like to thank our two informants who gave us direct access to the field. Without their efforts, this thesis would not be possible.

As we conclude this chapter of our academic journey, we would also like to express our deepest gratitude to our girlfriends Julie and Oihane, our family, dear friends, and fellow students for their support this year.

Abstract

This study examines how teachers with physically active learning (PAL) competence incorporate this method in their English teaching. PAL is an educational approach that combines physical activity with academic content. The master thesis investigates the following research question: “How do teachers at PAL schools implement physically active learning in the English subject, and what can English teachers, in general, learn from the PAL methodology?” The second half of the question was included because we wanted our research to be of relevance to all teachers of the English subject. To answer the main research question, we have supplied two additional sub-research questions: “How can physically active learning foster students' reading, writing, oral, and digital skills in the English subject?” and “What are the main facilitators and barriers for implementing PAL in the English subject?”

We chose this area of focus for several reasons. First, we are both PE teachers and, therefore, naturally interested in being physically active. In addition, it's important for students to take a break from sitting at their desks, especially since Norwegian children are less active than before. PAL can help break up the monotony and improve overall well-being and provide physical and mental advantages. Therefore, we wanted to investigate how academic content can be delivered through the integration of movement. In short, we wanted to know if PAL is a viable method to use in the English classroom to meet curricular goals.

We collected data using a qualitative approach. We observed one of our informants during teaching and conducted interviews with two informants. The data was coded and sorted into appropriate categories that emerged. Our observations were used to supplement the interview to gain a greater understanding of the teacher's didactic choices. Interviews were transcribed and analyzed. Finally, we used this data to answer our research question. Our findings indicate that teachers with PAL competence use PAL to meet curricular goals and facilitate movement, engagement, cooperation, and communication. To summarize, what other teachers can learn from this study is that physically active learning (PAL) should not be confused with physical education (PE). The primary objective of PAL is combining movement with the delivery of academic content. Our informants emphasize how a PAL approach is holistic and can provide benefits beyond the academic ones in a holistic fashion. They emphasize the social and enjoyable aspects of learning and how this can contribute to the joy of learning.

Sammendrag

Denne studien undersøker hvordan lærere med FAL-kompetanse bruker denne metoden i engelskundervisningen. FAL er en undervisningsmetode som kombinerer fysisk aktivitet og faglig innhold. Masteroppgaven undersøker følgende problemstilling: "Hvordan bruker lærere ved FAL-skoler fysisk aktiv læring i engelskfaget, og hva kan engelsklærere generelt lære av FAL-metodikken?" Den andre halvdel av problemstillingen ble inkludert fordi vi ønsket at forskningen vår skulle være relevant for alle lærere i engelskfaget. For å svare på hovedspørsmålet har vi lagt til ytterligere to forskningsspørsmål: «Hvordan kan fysisk aktiv læring fremme elevenes lese-, skrive-, muntlige og digitale ferdigheter i engelskfaget?» og "Hva er de viktigste fasilitatorene og barrierene for å gjennomføre FAL i engelskfaget?"

Vi valgte dette fokusområdet av flere grunner. Først av alt er vi begge kroppsøvingslærere og derfor naturlig interessert i å være fysisk aktiv. I tillegg er det viktig at elevene får en pause fra den tradisjonelle undervisningen som forekommer ved å sitte ved pulten, spesielt fordi norske barn er mindre aktive enn før. FAL kan bidra til å bryte opp monotonien, forbedre det generelle velværet og gi fysiske og mentale fordeler. Derfor ønsket vi å undersøke hvordan faglig innhold kan tilføres gjennom integrering av bevegelse. Kort sagt, så ønsket vi å undersøke om FAL er en brukbar metode å bruke i det engelske klasserommet for å oppfylle læreplanens mål.

Vi samlet inn data ved hjelp av en kvalitativ tilnærming. Vi observerte en av våre informanter i undervisning og gjennomførte intervju med to informanter. Dataene ble kodet og sortert i passende kategorier som oppsto. Våre observasjoner ble brukt til å supplere intervjuet for å få en dypere forståelse for lærerens valg. Intervjuene ble transkribert og analysert. Til slutt brukte vi datamaterialet til å svare på problemstillingen vår. Våre funn tyder på at lærere med FAL-kompetanse bruker metoden for å oppfylle læreplanens mål og legge til rette for bevegelse, engasjement, samarbeid og kommunikasjon. Det viktigste andre lærere kan ta med seg fra denne forskningen er at FAL og kroppsøving er to forskjellige ting. Formålet med FAL er å kombinere bevegelse og faglig innhold. Våre informanter understreker hvordan en FAL tilnærming kan gi fordeler utover det faglige på en helhetlig måte. De legger vekt på sosiale aspekt ved læring og hvordan dette kan bidra til læringsglede.

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List of terms

PA – Physical activity, movement without academic content

PE – Physical education

PAL – Physically active learning

MI – Movement integration

SEFAL – Senter for fysisk aktiv læring (referred to as the further education program)

ASK – Active Smarter Kids

Informant 1 – Male informant (will be referred to as the first informant)

Informant 2 – Female informant (will be referred to as the second informant)

1 Introduction, background, and personal motivation

Norwegian children are less active than before, according to numbers presented by the Norwegian School for Sports Science and the Norwegian Directorate of Health (2019a). The Norwegian Directorate of Health (2019a) recommends at least 60 minutes of moderate to vigorous physical activity daily. In addition, they recommend that people who are in contact with children through their line of work should facilitate movement and physical activities that provide a sense of joy from the sensation of movement. This can according to the Norwegian Directorate of Health be achieved by children experiencing various activities, all-around play distributed throughout the day, and activities that support children's needs for care, play, socializing, and learning (2019b). Schools are probably the most suitable arena/context to meet these recommendations, as schools reach children from all social, economic, and cultural groups (Daly-Smith et al., 2020, p. 2).

In a school context, physical activity is often considered a part of the subject of physical education (PE). However, physical activity is a great part of the school day. Recess, break activities, and getting up from the desk during the day may be considered physical activity. According to the Norwegian Directorate for Education, all children in 5.-7th grade have the right to physical activity during their school day, in addition to PE (Utdanningsdirektoratet, 2022). This extra physical activity must be adapted so that all pupils, regardless of physical abilities, can experience happiness, a sense of connection to their peers, and variation during the school day. Additional physical activity aims to facilitate a varied and active school day for students. Physical activity has positive effects both on the learning environment and learning outcomes and on physical and mental health (Utdanningsdirektoratet, 2022).

Physical activity is considered an integral part of education (*oppl ring*), as per the Education Act "Right to physical activity" (Utdanningsdirektoratet, 2022). Therefore, the students have the right to have activities tailored to their personal needs in order to get satisfactory academic results from said activities. Physical activity is part of compulsory primary school education and must be naturally included in the education. However, when looking at the curriculum for each subject, physical activity is not mentioned in specific competence aims. Instead, physical activity functions as a tool in order to achieve competence aims in the given subject.

In this study, we wish to research how physical activity (PA) can be implemented into English teaching. We have chosen to look at teachers who work in schools that are actively

using physically active learning in order to see what can be learned from schools that specialize in this method. Furthermore, we want to investigate if this is transferable to schools that have not implemented the method of physically active learning. We define PA as a collective term that includes *all processes that involve movement that requires students to leave their desks*. Our definition is inspired by our observation, interviews, and previous research. Physically active learning (PAL) is a teaching method especially used in schools that have participated in a further education program, in this case, designed by the Center of physically active learning (SEFAL). We will, therefore, in this study, refer to them as PAL schools. SEFAL was established as a part of *Høgskulen på Vestlandet* in 2018. The program was created with the goal of increasing teachers' competence and knowledge about physically active learning and its potential use in Norwegian classrooms. The center is continuously developing by cooperating with schools, principals, and scientists throughout Norway and worldwide. PAL could, therefore, potentially enhance the teacher's didactic repertoire and contribute to the students' learning.

As previously mentioned, there is a decline in the amount of time Norwegian children are active throughout their days, which gives rise to concerns, which makes this research relevant for teachers in general (Helsedirektoratet, 2019a). To promote the interdisciplinary topic of *Health and life skills*, physical activities during the school day will be important in giving pupils an opportunity to move more and stay active (Utdanningsdirektoratet, 2017). The topic of health and life skills primary focus is to encourage the pupils to acquire competence that can foster good mental and physical health. Although we mainly want to research how PAL is used by teachers in the English subject, one cannot ignore the obvious health benefits of being active throughout the day. During the early years in primary school, children who experience active movement can, for example, develop better motor skills and a better basis for physical development. According to the Public Health Report by the Norwegian Institute of Public Health (*Folkehelseinstituttet*), it can be seen that physical activity could impact the physical and mental health of children and youth (Nystad, 2014).

Our personal motivation to focus on physically active learning for this study is because we are both fully educated teachers within the subject of PE. Further, we see the potential value and joy this method of teaching can have for students. We are aware of the fact that our personal background and interests might influence our research, although we aim to be as neutral as possible. We believe that English is traditionally considered a "sitting down subject" in the Norwegian classroom. Looking back at our own education, there were few opportunities to

move around during English lessons. By examining the existing literature on PAL, we have noticed a research gap on the topics related to PAL and English as a second language, specifically in a Norwegian classroom context. Most of the existing PAL research has been conducted in countries where English is the first language. We, therefore, feel that shedding light on something that potentially can make a significant difference for children in classrooms across Norway is essential.

1.1 Research questions

The purpose of this study is to develop an understanding of how teachers with competence from a further developmental program, use physically active learning in their English lessons. As previously mentioned, PAL schools are schools where staff usually have increased competence in physically active learning as a method, through participation in a further education program, in this case, provided by SEFAL.

Minding the statements we made in the introduction; we have developed the following research question:

- How do teachers at PAL schools implement physically active learning in the English subject, and what can English teachers, in general, learn from the PAL methodology?

We want to investigate how teachers with specialized competence use PAL in the English classroom. Additionally, we aim to assess the didactic decisions concerning incorporating physical activities in English language teaching. We also aim to identify the potential benefits for teachers without PAL competence. To help us answer this research question, we have supplemented it with additional sub research questions:

- How can physically active learning foster students' reading, writing, oral, and digital skills in the English subject?
- What are the main facilitators and barriers for implementing PAL in the English subject?

These sub-questions will enable us to gain an understanding of the teachers' didactic choices and hopefully provide additional insight into the thought process behind planning and executing PAL. The first sub-question will help us understand how physically active learning fits within the English subject in regard to the basic skills. By doing this, our study is related

to the curriculum, but we are not limited to particular learning goals. In addition, we want to investigate if PAL as a method can include and promote reading, writing, oral and digital skills. The second sub-research question aims to provide insight into factors that can hinder or ease PAL implementation according to our informants and existing research on the field.

2 Theory and previous research

In this chapter, we will delve deeper into theory and previous research relevant to our study.

We will present central terminology and viewpoints to discuss our research question.

Defining the central terms is done to avoid misunderstanding throughout the study.

Furthermore, we are going to present relevant learning theories, in this case, Vygotsky's sociocultural learning theory. This chapter will have a significant focus on the previous research done on physically active learning as a concept since we find it of high relevancy in order to support our thesis. We will start by presenting previous research on PAL, beginning with PAL's status in Norway, before we look at more general PAL research. The general PAL research will start with reviewing different studies that conduct movement integration programs in Europe and see how PAL is portrayed/used. Lastly, we are going to review PAL benefits and PAL facilitators and barriers before we provide a short summary of the existing research presented in this chapter.

2.1 Central terms

Defining central terms will be instrumental in order to better understand the research.

Throughout the literature, movement integration (MI) and physically active learning are reoccurring terms used by researchers. *Movement Integration* is defined by McMullen et al. (2016, p. 322) as "activities that seek to infuse physical activity into general education classrooms." The term PAL is defined by Daly-Smith et al. (2020, p. 1) as "integration of movement within the delivery of academic content." These terms, from our understanding, are similar because of how they are used in literature. These two terms will therefore be used interchangeably, as by definition, they deal with the same issue at hand, namely movement with academic content. We will therefore use the same terms as the researchers do when presenting each study/research-paper to not tamper with the authenticity of their work. In our research question, however, we have chosen to use the term PAL because this is the term used in Norway.

There is also another term worth mentioning that is derived from PAL used by researchers in the field. This term is called PA, which naturally stands for physical activity. We will use this term for physical activity that does not contain any academic content, for example, movement breaks during lessons.

2.2 PAL theory

Seeing and utilizing different opportunities for learning is crucial for teachers and students alike. In several circumstances, learning can be strengthened with additional factors that affect how humans learn. One of these factors can be physical activity. As mentioned, physical activity in school goes beyond the PE subject, as other subjects, as well as recess, can include physical activity, whether this is deliberately incorporated or happens by chance. It is essential to mention that PAL theory differs from PE. This is because PAL happens within subjects where the movement is integrated with the subject's academic content. PE on the other hand, is its own subject and focuses more on "developing their [students] competence in exercising, lifestyle choices and health" (Utdanningsdirektoratet, 2020b).

Education should facilitate for students' development towards education, work life, and life in general. To be physically active while learning could enable students' further development of all aspects simultaneously. This section will discuss relevant theories on physically active learning, how it can be used in subjects, and why physically active learning is a viable learning strategy. First, we will discuss how physically active learning fits in a holistic approach to learning before we discuss learning from a sociocultural perspective. We will then take a closer look at learning in groups before we look at how teachers who are motivated play a role in PAL competence development over time. We will primarily be using the book *Fysisk aktiv læring* (Vingdal, 2014), which is, to our knowledge, one of the few books that cover PAL in a Norwegian context.

There are many factors that compete for the attention of students throughout the school day. Students show up to class with "all of themselves" and each individual is colored by their daily life and background, and they all come to school with different individual abilities (Vingdal, 2014, p. 37). As a teacher, these considerations need to be considered in order to facilitate for learning. Physically active learning is based on a holistic view of human development. Students learn, develop and function with their whole body, both physically and mentally. Sociocultural learning and especially in relation to PAL, will be further elaborated later, however, it is worth mentioning that a lot of what students learn, they learn in plenum. This means that the learning environment also must be supportive and inclusive to facilitate for learning.

The idea behind the holistic view of learning is according to Vingdal (2014, pp. 38-39), something that has been explored for a long time and can be traced as far back as to the

Greeks. Furthermore, she describes how human learning consists of five skills in total, divided in two categories. The first being physical skills, which includes physical and motor skills. The second category are the psychological skills: emotional, cognitive and social skills (Vingdal, 2014). These five skills are connected to each other, and experiencing success or failure in one of these areas will affect the others.

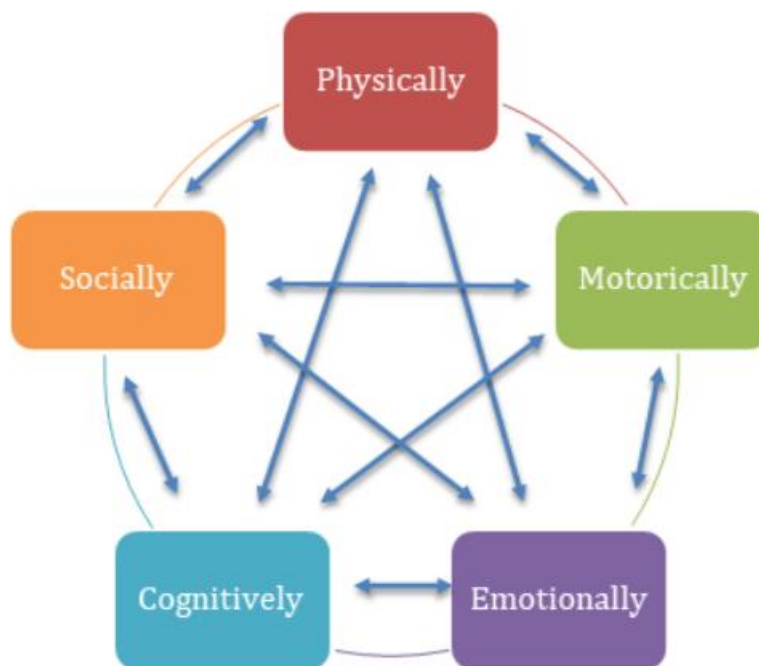


Figure 1 A holistic view on how pupils learn (Vingdal, 2014, p. 40)

Being physically active with other people provides opportunities for learning and developing social skills (Vingdal, 2014, p. 42). During physical activity and physically active learning, there are opportunities to practice cooperative learning as well as academic content. A well-planned and adapted lesson that utilizes PAL will provide students with valuable emotional learning, which can strengthen motivation, meaning that PAL can facilitate for cognitive development and learning (Vingdal, 2014, p. 42). This is supported by Skage and Dyrstad (2019, p. 6), who add that PAL could contribute positively to students' health and learning. Physically active learning could also be a facilitator for self-concept development. The self-concept is the image that we have of ourselves. It can be influenced by the environment and people around us. Since the need to maintain a good self-image understandably is of high priority for all humans, it is vital that the physical aspect is not overlooked. All students deserve to be included in physical activities that are adapted to them, in an including class environment.

As mentioned earlier, physically active learning and learning in social interactions are intertwined. We learn better by actually doing something ourselves instead of being told how to do it. This is also the case for language learning. By using the language in an authentic setting, a person would learn more than if they were only to study how the language is being used. Learning activities should therefore be designed so that students get to practice, in this case, language, in different situations. Moreover, in many language situations, working in groups could prove to be beneficial. According to Vingdal (2014, p. 61), group work is excellent for learning and for physically active learning. However, she adds that it is essential for teachers to be aware that valuable learning does not necessarily happen in every group work situation.

This brings up the question: What makes group work effective? Using group work as an opportunity for learning should be high up on every teacher's list, so understanding its facilitators and barriers is of utmost importance. By splitting a class into groups, the learning environment is also split into smaller subgroups. This will, in terms, give students fewer people to interact with, thus creating more opportunities for being seen and affecting others (Vingdal, 2014, p. 61). She emphasizes, however, that groups need to be well-made. Otherwise, students who are already struggling will struggle more. In contrast, the students who master the task will dominate, which could lead to the other group members feeling inadequate and losing motivation (Vingdal, 2014, p. 72). This is supported by Dyrstad et al. (2018, p. 5), emphasizing how student group composition affected children, especially those that were academically challenged. The goal of successful groupwork should be for students to experience challenges that are located in the student's proximal zone of development and for students to participate in meaningful interactions with others.

2.3 Sociocultural theory

The importance of social interaction in learning is a shared belief among different sociocultural theories, in which there is a particular focus on students acquiring knowledge within a social context. One theory that is relevant to PAL, is the sociocultural theory developed by Russian psychologist Lev Vygotsky. The educational theory emphasizes the link between social connections and cultural developments within cognitive development. In other words, Vygotsky believed that children learn through interacting with others that are more knowledgeable than themselves and that the interactions they have with others as well as the experiences they have, shape them. A central concept within Vygotsky's sociocultural

theory is the zone of proximal development. The zone of proximal development refers to what Vygotsky believed a learner would be able to achieve independently and what they could achieve with extra assistance from a person with more knowledge (Vygotsky, 1978). This means that the tasks the learner faces are slightly out of their reach when working alone but achievable when working with someone else. This learning space is very interesting and important because of how the learners engage in activities. They should face activities that are challenging enough but not so much that they lose interest. The concept of the zone of proximal development is therefore crucial for teachers and educators, as it suggests that tasks should be designed so that they are in the learners' zone of proximal development and facilitate for learning and development.

The connection between the zone of proximal development and physically active learning lies in the variety the physical learning environment can provide for the learners. The context for how learning is facilitated can be reshaped and structured differently by making small changes, such as moving the classroom outdoors and creating a different situation where students engage in tasks within their zone of proximal development. Physically active learning is often designed to be somewhat challenging, as it could give students a chance to practice social skills and collaboration through sports and activities. Through the use of physically active learning, students can acquire new physical skills in addition to knowledge development. Cooperating and socializing within a school context will most likely be beneficial for social development and facilitate for positive student interaction (Vingdal, 2014, p. 44). Activities such as relays or other team activities that require students to interact with each other can create a learning environment that includes the social aspect as well as the physical and academic aspects.

Within sociocultural theory, in relation to physically active learning, it is also worth mentioning Albert Bandura and his social-cognitive theory. This theory is more aimed at social learning processes at the cognitive level of students. Bandura was a Canadian psychologist who was interested in modeling and that students learn by imitating other students. Within physical activity and physically active learning, there are many opportunities for modeling, according to Vingdal (2014, p. 44).

Sociocultural theory is based on a constructivist view of learning through interactions and within contexts. This means that students actively influence their reality and create their understandings of the world based on personal experiences. Vingdal (2014, p. 44) emphasizes

how communication and physical actions are situated in contexts. To see the connection between context and action is, according to Vingdal (2014, p. 44), an essential part of sociocultural theory. Concerning PAL and sociocultural theory, communication is a crucial aspect of students' further development and learning. When students engage in physical activity, they practice communication and social interactions. For language development, and especially L2 development, PAL could be instrumental in facilitating communication and social interactions. L2 refers to a second language, where the L stands for language. For the majority of students in Norway in year 1-7, English will be their L2, though for some students it will be their L3 or L4.

To summarize, we understand PAL as not just being about physical activity but also as involving social interaction. Therefore, combining a sociocultural aspect with our investigation of PAL allows us to better observe the method can facilitate for learning, academically and socially.

2.3.1 Affective filter

The *affective filter* is a term the linguist Krashen (1982) uses to refer to a metaphorical filter that represents how feelings can influence how effectively someone learns a second language. Krashen (1982, pp. 30-31) describes three variables that are related to success in second language acquisition: motivation, self-confidence, and anxiety. The filter could function as a barrier, hindering learners' ability to process and retain information. Krashen emphasizes that the less of a filter one has, the better. For example, if students have low motivation and feel anxious about communicating, their filter will be "high or strong." This could result in learners facing additional challenges when it comes to concentrating on the learning material and retaining the information provided.

It is the teacher's responsibility to create a learning environment that lowers student anxiety as it will affect students' affective filter. Stating Krashen (1982, p. 32), "the effective language teacher is someone who can provide input and help make it comprehensible in a low anxiety situation." According to Harmer (2007, p. 58), the "beneficial value of comprehensible input depends upon the students being relaxed and feeling positive and unthreatened." If not, the affective filter is raised, and the language acquisition will be delayed or unable to happen. The affective filter is closely related to another of Krashen's concepts: "comprehensible input +1", which Harmer (2007, p. 50) defines as "information the students have plus the next level up." Comprehensible input + 1 is a concept that we

understand is related to the zone of proximal development because they both challenge learners to go just beyond their current level of ability, which is one of the reasons as to why we chose to include it in our theory chapter.

2.4 PAL and basic skills

In this section, we will present the four basic skills related to the English subject. The four skills include oral skills, reading skills, writing skills and digital skills. We find it relevant to include the basic skills to investigate whether PAL is a feasible method for the English subject or not. To elaborate, we want to see to what extent PAL can incorporate the basic skills. Oral skills have been granted a more prominent focus in this section because this is the basic skill that is practiced the most through PAL in English. Obviously, this does not mean that the other three basic skills are less important.

2.4.1 Oral skills

Oral skills are one of the four basic skills in the English curriculum. Oral skills mean that students in the English subject are “to create meaning through listening, talking and engaging in conversation” (Utdanningsdirektoratet, 2020a). For students to learn English, they need to be given the opportunity to speak the language. Munden (2021, p. 288) supports this view and states that students should do most of the talking in the English classroom, not the teacher. She goes on to say that students should speak less with the teacher and more with each other (Munden, 2021).

To move beyond the purely teacher-led classroom, motivating students to talk is, according to Munden (2021, p. 43), the most important strategy for making oral communication happen. Students need to be confident that they will not be laughed at or judged. Skulstad (2020, p. 113) mentions that creating a classroom environment of acceptance and tolerance is important to promote oral communication. Creating a supportive atmosphere is the teacher's job. It is essential to mention that students need something to talk about. Teachers should therefore design activities that engage students and provide them with the necessary language/glossary/vocabulary required to participate in communicative activities (Munden, 2021, p. 295). What is more, teachers should support students through formative assessment during the activities. PAL as a method can, from our experience, facilitate oral communication between students and provide opportunities for formative assessment consistently throughout lessons.

When students are to solve tasks in the classroom that require communication, it calls on their communicative resources (Munden, 2021, p. 296). This means that students are given the chance to use what they know while at the same time compensating for what they do not know. Munden (2021, p. 296), states that communicative activities are always differentiated, because students communicate with whatever language they know and because there is no right way of communicating. When activities are differentiated, the threshold for participation lowers and can make it easier to include the whole class. When conducting communicative activities, the primary focus should be on fluency and communicative success, and not accuracy (Munden, 2021, p. 296). Munden (2021, p. 297) emphasizes that “communication is arguably the core element in the subject English.” This statement is supported by Skulstad (2020, p. 43), stating that communicative competence is the single most important concept in the English didactics. It could be seen as the most important factor of why we learn languages, because the primary goal of language is to communicate, make yourself understood, and understand others.

Speaking in English is not the only skill that belongs in the category of oral skills. Being able to listen and engage in conversations is also an important aspect of the skill set. According to Munden (2021, pp. 323-324), being able to listen in the English subject means that students are to “distinguish sounds and intonation in pronunciation practice, learn the language itself by noticing how things are said, respond as a part of a group and follow instructions so that one can participate in a learning activity.” In other words, there are several factors that come into play when discussing listening as a skill. Listening, as well as reading, are not passive activities because when listening and reading, one has to work to be able to understand (Munden, 2021, p. 324). Munden (2021, p. 324) goes on to say that listening is an active process, although we can hear without being active. This is because if we are to draw meaning out of something someone says, we have to be active in order to comprehend what is being said. Munden (2021, p. 324) refers to both reading and listening as comprehension skills. These two skills set share similarities, specifically when it comes to what we as teachers can support students with before they are to read or listen to a text.

2.4.2 Reading

Reading is another basic skill in the English subject that can be practiced through the PAL methodology. Reading is mostly thought of as an activity we do by ourselves, but it can also be done with others, such as when teachers or students read out loud. Reading, as a basic skill

in English, “means reading and finding information in multimedia texts with competing messages and using reading strategies to understand explicit and implicit information” (Utdanningsdirektoratet, 2020a). There are several ways of reading a text. Munden (2021, p. 353) refers to these as reading strategies, to give some examples: re-reading something, reading out loud and reading more slowly. She goes on to say that the reader chooses what reading strategy to use, based on the specific reading situation and the specific text (Munden, 2021). Two other strategies worth mentioning are skimming and scanning. Skimming is where one reads in order to get a basic understanding of what the text is about, while scanning involves looking for specific information. Munden (2021, p. 353) emphasizes that students should practice different strategies for reading to be equipped for the many ways they are expected to read in everyday life. Teachers are expected to make sure students are given the opportunity to develop different strategies for reading and should be made aware of what strategy to apply and when.

2.4.3 Writing

Writing in English involves a spectrum of skills. In LK20,

Writing in English means being able to express ideas and opinions in an understandable and appropriate manner in various types of texts, both on paper and on screen. Writing requires planning, formulating and processing texts that communicate, and to adapt the language to the purpose, receiver, and, situation, and to choose appropriate writing strategies. (Utdanningsdirektoratet, 2020a)

Munden (2021, p. 417) expresses that our task as teachers of the English subject is to move students gradually towards being able to write coherent texts. Writing is a personal project; for students to enjoy writing in school, they must believe that they can communicate and that someone will be interested in what they write (Munden, 2021, p. 418). In other words, students must feel that what they write will be valued and seen. The teacher is also responsible for giving students something to write about.

2.4.4 Digital skills

Pupils in Year 5-7 bring advanced digital skills with them to school; many of these digital skills involves using the English language. Munden (2021, p. 60) claims that teachers should acknowledge and take advantage of these skills that the students possess, and actively draw connections between digital skills and language skills. Digital skills in the English plan are

meant to serve three purposes: to communicate with other speakers of English, find relevant information, and lastly, to use digital media and resources to promote language learning (Munden, 2021, p. 61).

In the basic skills section of the English subject curriculum, digital skills in English

Involve being able to use digital media and resources to strengthen language learning, to encounter authentic language models and interlocutors in English, and to acquire relevant knowledge in English. This requires critical and reflected behavior using digital forms of expression in English and in communication with others. (Utdanningsdirektoratet, 2020a)

Promoting digital skills in English is a big task for teachers. Keeping up with digital resources and assessing how to use them in order to promote language learning and make adaptations suitable for each individual student while at the same time promoting democracy, life skills and considering the students' wellbeing, are just some concerns the teachers not to be aware of, according to Munden (2021, p. 62). We end our overview of the basic skills here and turn to the matter of the previous PAL research.

2.5 Previous research on PAL

The purpose of this section is to give a comprehensive review of previous research related to physically active learning. By examining the literature, it is possible for us to identify key points for the use of PAL and to gain insight into the current understanding of PAL. Most of the research on PAL is done in English-speaking countries. We have not found any specific research that deals with teaching English as a second language in elementary schools with the use of physically active learning. We think, however, that the research from an L1 context can be relevant for L2 speakers of English as well. The research presented in this chapter builds a foundation for our own research. We begin with a look at PAL research in Norway before we turn our attention to PAL research in the rest of the world. Additionally, when appropriate, we draw some relevant examples between our findings and existing literature.

2.5.1 PAL in Norway (ASK)

Investigating new teaching and learning methods to improve students' academic performance is important. In a study conducted in Norway by Resaland et al. (2016), they discuss how physical activity may be an effective strategy that positively affects academic performance. The objective of the study was to investigate the effect of a seven-month, school-based

cluster-randomized controlled trial on academic performance in 10-year-old children in Sogn and Fjordane county. The study was named ASK, which stands for Active Smarter Kids.

They gathered a total of 1,129 students from 57 elementary schools in the region to participate in the study. The study looked at PA split into three components: 1) Physically active lessons (90 min/week), 2) 5 min/day of PA breaks during classroom lessons, and 3) 10 min/day physical activity homework. It was not specified whether the PA breaks contained academic content or not. Given that they are breaks in between lessons, we assume that they are without academic content. Resaland et al. (2016, p. 324) describe that the results of the academic performance were measured using standardized Norwegian national tests designed and administered by the Norwegian Directorate for Education and Training. The study tested for numeracy, reading (Norwegian), and English. The national test in English measured the students' ability to locate information and understand the main content, as well as some details in texts. For this task, the students had a time limit of 60 minutes, and it was a paper and pencil test. Resaland et al. (2016, p. 324) emphasize that the tests are “extensively verified for validity and reliability”, thus making them an excellent way to measure reading and comprehension skills.

When looking at the overall results of the study, it can be seen that the effect of the intervention seemingly did not have a significant impact on numeracy, reading, English, or the academic composite score. However, it is worth noting that the intervention had a significant impact on students in the lowest tertile of the numeracy score. Resaland et al. (2016, p. 326) discuss different reasons for why the intervention did not have a more significant impact on the results. An important reason they mention is that the PA levels of the control group were high, which is not uncommon during PA interventions. The researchers add that this, combined with the fact that the intervention aimed to look at PA and how it would cause a change in academic performance, likely was the main reason they could not detect measurable benefits between the intervention and control groups. They go on to explain that the increased effect on numeracy, therefore could be “more a result of how PA was integrated into the curriculum rather than a result of the amount of PA (i.e., the dose)” (2016, p. 326).

In a follow-up study on the ASK study published by Resaland et al. (2018), they took a deeper, more thorough look at the results from the original study. They mention that the educational benefit for low performing students had a significant increase, especially with

numeracy, and that this was not gender specific. This means that low performing students of both genders might have been struggling with traditional sedentary classroom education. Resaland et al. (2018, p. 176) go on to state how PA enhances “enjoyment of academic lessons, academic motivation, and engagement with academic materials.” Again, this could imply that elementary education in Norwegian classrooms is too sedentary.

Numerous studies have been conducted, specifically focusing on the advantages of active learning through physical activity. Resaland et al. (2018) also point out that active learning could be problematic. They found that students who perform well in the traditional classroom may have a null impact or even a negative academic effect when participating in physically active lessons. With particular regards to English and the benefits of PAL, researchers found that the girls responded better to physically active lessons combined with English compared to the boys. They discuss further that “for the lowest academic performers at baseline, both boys and girls responded positively to active learning” (Resaland et al., 2018, p. 175). If PAL becomes a method the students can get familiar with through their years in school, it could have a beneficial effect on learning. For the moderately and high-performing students, they saw that boys responded positively while the girls had a more negative response. Resaland et al. (2018) refer to previous research on the field that discusses how girls generally outperform boys in most of the subjects, how boys generally engage in more PA than girls and that this could explain why boys responded better to PAL (Resaland et al., 2018, p. 175). To sum up, among the lower-performing students, there were no significant distinctions between boys and girls. However, among the higher-performing students, PAL had less of a detrimental impact on males than females. This might be because boys tend to be more physically active, while girls generally prefer traditional classroom learning.

The ASK study is especially relevant to our research because of the lack of PAL studies conducted in Norway. As far as we know, the two publications presented here constitute the most prominent Norwegian contribution to PAL research. We notice that English as a subject is mentioned but is not granted the most significant focus. However, we find any research on PAL in Norway relevant, even though there are other focuses than English. The leading researchers who administrated this study have been active in senior positions at the Center for physically active learning (SEFAL), a part of *Høgskulen på Vestlandet*. This gives the ASK study more credibility and adds relevance to our research because our informants have participated in the further education program provided by SEFAL. Moreover, it is worth mentioning that in addition to the ASK study, a database called the ASK-Base, containing

physical learning activities was created to facilitate for more straightforward PAL implementation. In this database, one can sort through the different pre-made lesson plans according to subject and competence aims.

We have now presented PAL research conducted in Norway. We now move on to take a more expansive approach and look at PAL research conducted in the rest of the world to gain a greater understanding. We begin with a look at what international PAL research says about teachers' motivation, then look at PAL benefits, before we present PAL facilitators and barriers, and end with a chapter summary.

2.5.2 Teachers' motivation

In a study done by McMullen et al. (2016), they looked at a movement integration implementation in education called "Moving to Learn Ireland." They assessed the experiences primary school teachers had with implementing the movement integration. It is worth noting that this study is done in an environment where English is the L1. Therefore, we interpret movement integration and PAL as two similar ways of delivering academic content through the use of physical activities. The study consisted of 13 teachers that, through pre- and post-questionnaires, reflections, and focus group interviews, revealed benefits as well as barriers to the use of movement integration.

The study divided their findings into overarching themes. The first theme they discovered in the study was related to why teachers are positively disposed to movement integration. They call this theme "for the children." Teachers participating in this study emphasized student benefits as a reason for continuing to try to include physical activity in their daily classroom routines (McMullen et al., 2016, p. 324).

McMullen et al. (2016) identify several restrictions associated with integrating physically active learning in the classroom, for example, time pressures, space constraints, and the number of students. However, even with these restrictions in mind, teachers participating in the study found several positive motivating factors for physical active learning, with one of the teachers expressing that: "I am delighted that the children will get a break from the sheer monotony of sitting in one position for session after session" (McMullen et al., 2016, p. 324). Additionally, in the post-questionnaire, teachers expressed a desire to continue using physically active learning in their teaching after the pilot ended, with the reason being "the benefits they perceived the children getting from the movement" (McMullen et al., 2016, p.

325). It was also reported that student enjoyment was another critical factor that influenced teachers' willingness to continue to prioritize physically active lessons. All in all, the study conducted by McMullen et al. (2016) shows that teachers participating in this study are motivated to continuously deliver PAL because they see how their students react to this method of teaching.

An empirical study conducted by Webster et al. (2017) examined elementary classroom teachers' MI perceptions in order to use the findings to design and carry out a pilot program. The pilot program's purpose was to enhance PA amongst children by using MI in the classroom. This study was also carried out in an English-speaking country. Twelve teachers from four schools participated in the study based on responses to a survey about their use of movement integration. The selection of participants was then chosen by the researchers with attention to teachers that used MI the least. However, not all of the teachers agreed to participate in the study. Therefore, the final sample of teachers consisted of two groups of elementary classroom teachers, including eight of those who integrated MI to the lowest degree, and four additional teachers. These teachers were then interviewed before the program was implemented, and the interviews were qualitatively analyzed afterward. Four themes emerged from the data: 1) challenges and barriers, 2) current and ideal resources, 3) current implementation process, and 4) teachers' ideas and tips for MI.

The theme "Current and ideal resources" consists of three areas of focus, one of them being "student responses to MI and PA opportunities." Half of the teacher sample reported that their students enjoyed being active and valued PA. Teachers also reported that they believe children have a need for movement for developmental purposes. One teacher said that during a PA lesson of his, both teachers and students had a good time, laughing and enjoying the activities together. He adds that "it's just sort of an infectious thing. When I get more animated, then they get more animated, then everyone remembers everything that happened that day" (Webster et al., 2017, p. 140). To summarize this area of focus, Webster et al. (2017) report that the teachers recognized the enthusiasm and appreciation for PA that the students showed as valuable motivation for them to integrate MI into their classrooms. Our understanding is that the studies indicate that the teachers are motivated and want to continue to try to use MI in their classrooms based on students' positive responses to this way of learning.

2.5.3 PAL Benefits

Most of the research on physically active learning highlights the beneficial factors of the method. This chapter is therefore called PAL benefits. First, we investigated what the research says about the teachers' motivation for using PAL. This is presented first as we find it highly relevant to our research because our study mainly investigates the teachers' use of PAL. We will now go on to present student benefits. This section will be divided into "student enjoyment and movement" and "educational outcomes" to differentiate between academic and social/personal benefits.

Even though this study focuses on teachers' use of PAL, it is also essential to take students' perceptions and benefits into consideration. As mentioned in the last paragraph in section 2.5.2, teachers are motivated by positive student responses to PAL. Therefore, this section will cover how students can benefit from PAL in the classroom. To avoid confusion regarding the studies we will discuss, we will present the studies in this section and use them correspondingly in the forthcoming presentation of PAL benefits.

McMullen et al. (2019) conducted a follow-up study to the "Moving to Learn Ireland" study that is mentioned in section 2.5.2. This study covers student experiences of classroom movement integration (McMullen et al., 2019). The purpose of the follow-up study was to describe students' experience of movement in the classroom based on their participation in lessons included in the Movement Integration program. This study consisted of 135 primary school students from two schools in Ireland. The study used several methods to gather data from the students: "draw-and-write", focus group interviews, and field notes.

Martin and Murtagh (2017) published an article in which they looked at teachers' and students' perspectives on participating in the "Active Classrooms movement integration program." They examined five teachers and 129 students participating in an 8-week movement integration intervention in primary school. This study also took place in Ireland. The teachers performed two active lessons per day, which we consider to be a high number of active lessons per week. This intervention could therefore provide us with relevant and more secure data, given the time frame and the increased opportunities for PAL delivery. In addition, the teachers completed questionnaires post-intervention, while the students did 'draw and write' activities and focus group interviews, similarly to the follow up study done by McMullen et al. (2019).

Student enjoyment and movement

One of the main topics covered by McMullen et al. (2019) deals with the enjoyment of movement. Fun and enjoyment could be seen in the draw-and-write samples collected from the students. This method works well to see which activities the students liked and their reasoning for it. Additionally, the interview supported the data from the drawings and the notion that fun was important. Many of the students that participated in this study also addressed that they get bored in school from sitting too much. Our understanding is that comments from students in the study such as “I want to do it (PAL) all day!” and “You’re doing your subject, you’re moving about and having fun while doing it.” indicate that they enjoy this method of learning (McMullen et al., 2019, p. 56).

Martin and Murtagh (2017) give a teacher’s perspective on student enjoyment and discuss how the teachers acknowledge their students’ enjoyment of the movement integration program. For example, the teachers state that the children “loved” and “enjoyed the lessons”, and that they “really looked forward to the various activities” (Martin & Murtagh, 2017, p. 225). The last statement is particularly fascinating for us, as one of our informants claimed that he has students with school refusal issues that primarily show up when PAL is on the timetable, which will be elaborated later in this study. Teachers participating in the study by Martin and Murtagh (2017) claim that spelling and writing lessons were increasingly favored by students when PAL was being used, and the method indicated a higher level of student engagement.

Educational outcomes

The follow-up study by McMullen et al. (2019) showed that students not only enjoyed learning through movement, but furthermore that they felt that they learned better when moving around as opposed to sitting at a desk. This is exemplified in a statement made by a student, claiming that “You kind of remember it, you’re kind of like ‘Oh yeah, I remember learning that when I was like, doing football’ for example”(McMullen et al., 2019, pp. 56-58). We see this as an essential part of PAL, namely that students remember “more”, when they have a mental system or schema to relate to. Relating academic content to a specific activity can be an effective approach towards enhancing retention. McMullen et al. (2019) emphasize that during the interviews, students proclaimed that they wanted more movement in their classes and sometimes cited *learning* as the main reason.

Teachers participating in the study by Martin and Murtagh (2017) conveyed their appreciation of the intervention with regard to student learning, focusing on student concentration and time on task. Martin and Murtagh (2017) refer to particular extracts from interviews with the teachers that we feel are worth including to support our findings and our thesis. For example, “Children were learning without even knowing”, “children take in more information when they are active as their concentration levels rise”, “[active lessons] help to keep the children motivated” and “[the students] were more focused for the rest of the day” (Martin & Murtagh, 2017, p. 225). These are examples of quotes we felt were relevant when discussing educational outcomes of students. Additionally, one teacher expressed that it was a great way to revise topics they already had learned, e.g., grammar.

Both teachers and students participating in the “Active Classrooms’ study” were in agreement that integrating movement into English lessons (L1) enhanced the teaching and learning potential in the classroom (Martin & Murtagh, 2017, p. 226). Teachers highlighted how the active lessons increased their students’ engagement with academic content and made learning more engaging, hence “resulting in better concentration, enhanced learning, and increased academic motivation” (Martin & Murtagh, 2017, p. 226). Similar findings to these have been documented in previous studies which also have looked at teacher/student perceptions. Martin and Murtagh (2017) mention findings such as how the program positively impacted the students’ attitudes towards academic subjects when integrating movement and how teachers have noticed positive improvements in their students’ ability to learn. According to Martin and Murtagh (2017), “this illustrates that engaging students in physically active academic lessons may be a vital approach in tackling student disengagement and subsequently leading to improved academic performance” (Martin & Murtagh, 2017, p. 226). These positive findings on educational outcomes make PAL a viable teaching approach to use for teachers in general.

2.5.4 PAL facilitators and barriers

PAL as a method comes with several challenges and possibilities that determine whether or not it will be an effective method to use. This chapter will cover some of the potential facilitators and barriers on an institutional and intrapersonal level. First, we will delve into the importance of having a whole school approach and the inclusion of senior management. Furthermore, we will cover the topic of teacher training and confidence, which highlights the importance of teacher training. Resources and time will be covered as our third and fourth

potential facilitators and barriers. Lastly, we will present research related to delivery environments. We believe that all of these factors can be barriers as well as facilitators. For example, time could be a hindrance if there is not enough, but it could also be a facilitator if there is plenty. We, therefore, think that we need to discuss both the positive as well as the negative sides of each factor.

A systematic review conducted by Michael et al. (2019) was done in order to identify facilitators and barriers to movement integration in elementary school classrooms. The study was based on the research question; What factors enable or hinder elementary CTs' (classroom teachers) use of MI implementation? The study's results are relevant for teachers, researchers, and teacher educators, as it portrays a comprehensive collection of existing evidence on MI facilitators and barriers. Their findings are divided into two categories: institutional and intrapersonal findings.

There are, according to Michael et al. (2019), several factors that enable or hinder the successful implementation of MI strategies in schools, such as supportive policies, resources, and leadership. These are the factors that occur at a school or district level and are referred to as institutional factors, which we understand as factors at the meso level. On the other hand, Michael et al. (2019) further adds that there are personal factors that impact a teacher's ability to effectively utilize MI, such as their attitudes, beliefs, and self-efficacy. They go on to say that these factors that exist within the teacher are known as intrapersonal factors, in other words, micro level factors. These two categories of factors play an important role in determining the extent to which MI is adopted and implemented in the classroom (Michael, 2019, p. 155). The review identifies several themes related to these categories. We chose to go to the primary sources of Michael's literature review in order to accurately gather information on possible relevant facilitators and barriers to PAL implementation. We have also utilized sources that were not included in the systematic review to provide a more concrete and descriptive overview of the potential facilitators and barriers there are to PAL/MI.

The institutional factors for MI facilitators were divided into two themes: *administrative support* and *availability of resources*. The interpersonal factors were divided into three themes; the *perception that PA is valuable*, *perceived ease of implementation*, and *teacher confidence*. We have made these two models to make the factors more accessible, based on facilitators and barriers presented by Michael et al. (2019).

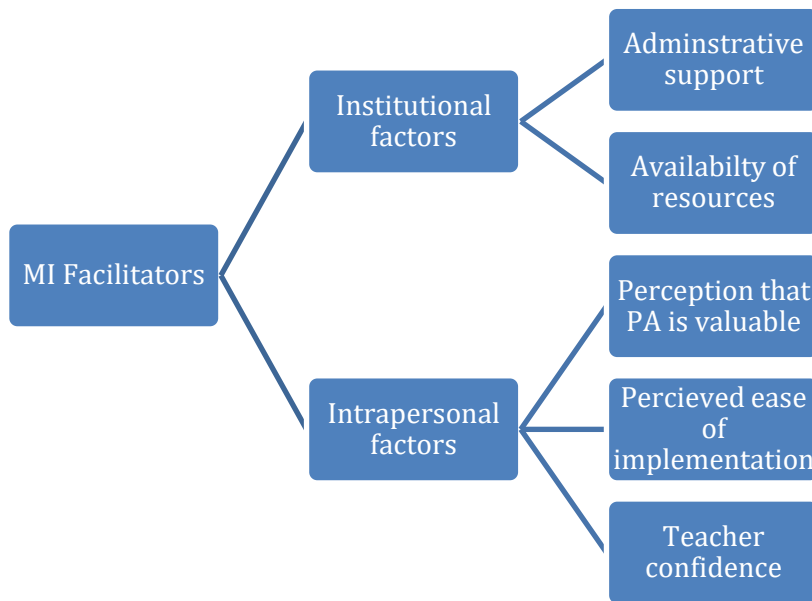


Figure 2 Model of MI facilitators- Based on Michael's MI facilitators (Michael et al., 2019, p. 155)

The institutional factors for MI barriers were divided into four themes: *lack of time*, *lack of resources*, *lack of space*, and *lack of administrative support*. The interpersonal factors were divided into three themes: *implementation challenges*, *lack of teacher motivation*, and *lack of training*.

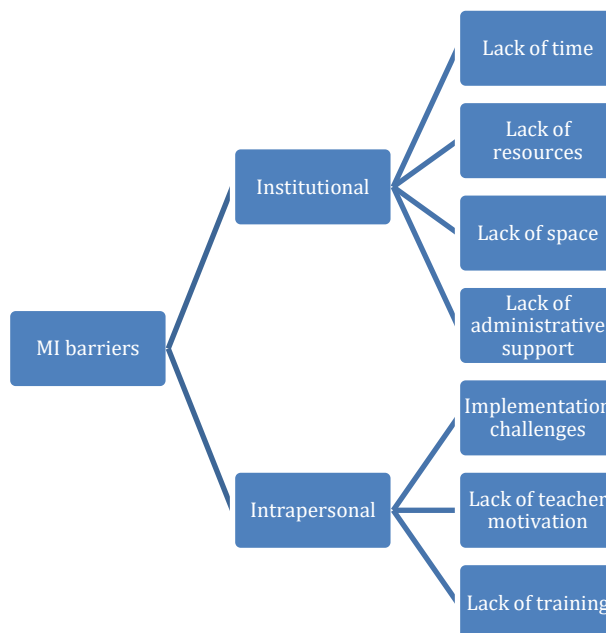


Figure 3 Model of MI barriers – Based on Michael's MI Barriers (Michael et al., 2019, p. 155)

The facilitators and barriers presented in the two models above are vital steps that impact if PAL is successful or not. We will therefore discuss these themes further in more detail to provide a more comprehensive glimpse of why these factors should be given attention.

Whole school approach

The study by Routen et al. (2018) aims to give a detailed analysis of primary school teachers' opinions on movement integration. This was done to identify factors related to the delivery of movement integration (MI/PAL) as well as implementation in primary schools across the U.K. It is important to consider that this study was conducted in an area where English is the L1. They discovered that having a *whole school approach* to support teachers in the implementation of movement in the classroom was essential to deliver PAL effectively. This was deemed essential for teachers to overcome the challenges associated with PAL delivery. According to Michael et al. (2019), a whole school approach is an institutional factor.

Routen et al. (2018) divided their findings into core themes to categorize different factors that teachers perceive as influential for the implementation of movement integration. The core themes were “The importance of whole school approach, teachers have limited time for planning and delivery, perceived external expectations inhibit new practices, individual differences in MI delivery, school environment constraints, MI’s impact on pupil behavior and teachers' perceptions and characteristics are important” (Routen et al., 2018, p. 51). By taking a closer look at the first core theme “whole school approach”, they found three key sub-themes that were important to the approach; senior management support, sharing practice among teaching staff and integration across year groups.

The first sub-theme is the involvement of senior management. It was suggested to be of utmost importance to ensure that classroom teaching staff are motivated and assisted in the implementation of PAL. They also noted that the importance of having the senior management see the value of physical activity (Routen et al., 2018, p. 52). Additionally, they suggest that failure to implement the initiative may arise from the teachers’ tendency to forget about it and remain within their comfort zone. However, the active support and participation of senior management in the implementation phase are expected to encourage teachers to commit to the method. Another reason is that schools usually first and foremost focus on academic performance in core curriculum subjects, which leads to these areas being prioritized while PAL might be set aside (Routen et al., 2018, p. 52). Finally, on this sub-theme, they mention the importance of making sure teachers feel that PAL is valued and prioritized.

The second sub-theme is related to the sharing of practice amongst teaching staff. This is supported by findings in the study by Michael et al. (2019, p. 158), which also suggests

sharing of practices between teachers, highlighting physical education teachers as a valuable resource. Michael et al. (2019, p. 158) argue that “allocating some of the physical education teachers’ workload to supporting classroom teachers (e.g., conducting classroom observations and providing MI suggestions, planning with grade-level teams to incorporate MI into academic lessons).” We believe that this could help ease teacher’s implementation of PAL delivery, by getting tips and tricks from someone with competence within PE. A teacher with PE experience could be able to see things differently because of his or her competence and supply other teachers with equipment from the gymnasium.

Finally, the third sub-theme is to implement PAL across all year groups and not as an “isolated event” in one particular year or group. The participants in the study noted that “to keep an element of movement in all classes from foundations stages / early years up to year 6 (age 11 years) would be most sensible and least disruptive to both teachers and pupils (Routen et al., 2018, p. 52). This is especially interesting for our research, as both of our informants work at schools where PAL is being practiced in all year groups.

The inclusion of senior management and its importance is confirmed in the study conducted by Michael et al. (2019, p. 158). They point out that the presence of senior management works as a beneficial factor for PAL integration. In contrast, the lack of interest from senior management may limit the teachers’ use of PAL. Additionally, they suggest that one of the ways the senior management can support teachers is by educating them on policies related to movement integration. By doing so, senior management can display their belief in PA as an essential school function (Michael et al., 2019, p. 158).

Having a whole school approach is also important for PAL schools here in Norway. Vingdal (2014, p. 179) emphasizes how schools here in Norway have started slowly with the implementation of PAL so as not to get over-encumbered. The implementation usually starts with a few classes trying it out and seeing what works and what needs to be improved. What the Norwegian PAL schools have had in common, is that when the competence within the organization has increased, it has impacted the scale and the prevalence of PAL (Vingdal, 2014, p. 179). This increase in competence could come from, for example, internal courses, sharing of experiences or further education, to name a few.

To summarize this sub-section about the whole school approach, having the support of senior management and colleagues seems to be necessary for the successful implementation of PAL.

By having a whole school approach to PAL, it would be a facilitator for PAL. However, as stated above, if the senior management and other teachers are not on board, it could be a barrier to PAL implementation and effectiveness.

Teacher training and confidence

Several studies indicate that teacher training is an essential factor in order to successfully use PAL as a teaching method. In a study conducted by Webster et al. (2017, p. 139), most of the participating teachers reported that they never went through in-service professional development training to learn how to incorporate PAL in the classroom. Because of the lack of training, teachers feared how PAL would look and take place in the classroom (Webster et al., 2017). Teachers in the study described “lack of knowledge about PAL policies and the belief that PAL is not a priority in schools” as barriers to conducting physically active learning. Webster et al. (2017, p. 141) propose that these barriers could be overcome by training teachers. Furthermore, Webster et al. (2017, p. 139) suggest that elementary school teachers with low implementation might choose to utilize more Movement Integration if they were to gain increased skills and knowledge related to PAL/MI. The study also recommends that training should encourage teachers to capitalize on existing classroom space, schedules, events, and routines within the school in order to provide students with more movement opportunities. This way of incorporating physical activity might promote the idea that classroom-based physical activity is simple to integrate (Webster et al., 2017, p. 141). Interestingly, one of our informants claimed that teachers without PAL training might overthink PAL delivery and therefore struggle to incorporate it into their classroom. This will be elaborated on in the discussion section of this thesis.

Lastly, Webster et al. (2017, p. 141) provide a list of what they think teacher training should include: (a) sharing PA policies, (b) presenting a strong (e.g., research-based) rationale for children’s PA and its importance in academics, (c) providing examples of developmentally appropriate MI strategies in all subject areas with corresponding classroom management techniques (d) suggesting strategies to motivate older/uninterested students as MI participants (e) focusing on MI strategies that can be truly integrated, rather than added, to existing classroom routines (e.g., having students perform fun activities while waiting in line or during other transition periods during the day), and (f) demonstrating calming activities that can be used following MI activities. Webster et al. (2017) recommend that all these competencies are included in MI training because their findings from the study suggest that there is not one preferred MI strategy or approach among the teachers they researched.

Daly-Smith et al. (2020) present a systematic review that also covers teacher training. In their review, they refer to teacher training as teacher confidence and competence. The participants in the studies they have reviewed were aware of the benefits of PAL, but expressed that they needed more awareness and knowledge on how to effectively incorporate PA into the classroom. Daly-Smith et al. (2020) notes that this could be a potential barrier and an area that needs to be considered for future development. One of the groups participating in a study reflected that: “Teachers could have all the knowledge in the world about the benefits of physical activity, but if they don’t know how to implement it then there is just no point having it”(Daly-Smith et al., 2020, p. 41).

A lack of teacher confidence is also mentioned as a potential barrier to implementation. One of the groups noted that it could stem from worries related to classroom management. Participants in the studies covered in the systematic review by Daly-Smith et al. (2020) add that for teachers and teaching assistants to use PAL in the classroom, it was vital that the teachers felt confident in a more “chaotic classroom” and with being “less in control” of the students. Being less in control was also mentioned by an informant of ours. We understand that the findings presented in this study are similar to other findings in the broader literature presented above, which agrees with the fact that teachers that lack confidence could experience trouble integrating physically active learning into their classrooms.

Resources

Research has been conducted on the different resources that seem to be crucial in order to effectively deliver PAL. In the results section of the study conducted by McMullen et al. (2016, p. 325), “teachers’ desired support” was one of the topics covered. Several teachers expressed that having ready-to-use equipment or plans would make it easier to conduct PAL (McMullen et al., 2016), therefore, stated that “common supports included movement lessons that required little or no pre-prepared equipment or a predetermined program to follow” (McMullen et al., 2016, p. 326). One of the teachers conveyed that “It would be super useful if there was a ready-made pack of equipment that could be used for the activities rather than having to search for the equipment... it would be great to have it to hand.” (McMullen et al., 2016, pp. 326-327). It is worth mentioning that both of our informants have access to a PAL room at the school, filled with different ready-to-use equipment. Some resources could also be made by individual teachers, for example laminated printouts. A problem that occurs when teachers acquire resources on their own is that they could run out of space to store them. Additionally, if they choose to create resources for later use, they will have to allocate time to

do so. According to the teachers interviewed in this study, having resources available is considered valuable in order to deliver PAL successfully.

Time

Time, or rather lack of time, is a reoccurring theme in the existing research on the topic of PAL. The study mentioned in the section above also covered the topic of time (and space) as an issue. The gathered data gave several indications that time was a barrier related “to meeting curricular goals, classroom set-up, class size, and the nature of physical activity in a classroom” (McMullen et al., 2016, p. 325). Further, the teachers that participated in this particular study seemed to appreciate lessons that could be carried out in a short period of time and simple lessons that were easy to implement. A teacher expressed that she “loved the activities that you could do there and then ... no equipment ... no getting ready” (McMullen et al., 2016, p. 326). Moreover, teachers in this study expressed that they lacked time in the day dedicated to conducting and scheduling for physically active learning in their school day (McMullen et al., 2016). One teacher mentioned that she felt that PAL was something extra that they were required to do. On the other hand, one teacher expressed that PAL was “a great addition to the lessons and that it wasn't something just separate, like that they were part of the lesson” (McMullen et al., 2016, p. 326).

The lack of time is also emphasized in the study carried out by Routen et al. (2018). Here, the lack of time is primarily reflected in the planning and delivery phase. By looking at a statement made by one of the teachers participating in the study, it could be seen that the teacher used an hour minimum before and after the workday to include movement integration into the lessons (Routen et al., 2018, p. 53). Furthermore, Routen et al. (2018, p. 53) go on to state that considering the everyday reality for many teachers and keeping in mind the suggestions made by the participants of the study, “keeping it [movement integration] simple” and “not take a lot of time to set-up” appears to be meaningful.

The review by Michael et al. (2019, p. 159) again expresses that the most significant institutional barrier for teachers in elementary school classrooms is not having enough time. They elaborate that senior management should help teachers learn to view movement integration as a “noncompetitor to other school priorities and even take advantage of MI as a time-saving strategy.” For example, sharing research on the academic benefits of movement integration might be an essential part of convincing teachers that MI could reduce the time it

takes to gain students' attention. Thus, time and resources come across as interconnected in the research literature as key to success.

Delivery environments

Daly-Smith et al. (2020) conducted a systematic review that aimed to shed light on how implementing physically active learning was done and the future directions for research, policy, and practice. In the study, participants from English speaking countries were invited to a PAL symposium and a workshop in 2017. A total of 35 people gave written consent to participate in the study. Researchers, teachers, policymakers, and representatives from the commercial PAL sector were included in the study. Eight of the participants were qualified teachers with 139 years of combined experience behind them. The workshop they attended was shaped by a design-thinking approach. In this case, the ideation phase was the focal point. This phase is characterized by ideas being generated in order to come up with new and fresh solutions to the problems presented, which in this case is PAL implementation.

The discussions surrounding PAL implementation highlighted the importance of adopting a broader definition of the term "classroom," which emerged as a critical theme. One group in the study suggested "chucking the chairs away" could enhance PA and overcome typical classroom barriers (Daly-Smith et al., 2020, p. 44). Furthermore, another group suggested using the whole school as a learning environment; "We've got specialist schools that use absolutely every element of their school including corridors. So that whole thing of not hanging round corridors, it doesn't exist in this school" (Daly-Smith et al., 2020). The groups were in an agreement that more significant potential (for PAL) was seen if "the entire school was used as a learning space, including halls, playgrounds, and green space." We think it is worth noting that the use of different learning spaces was something we observed when gathering data for this study. The informant we observed used several different spaces, such as group rooms, halls, and staircases.

According to the study carried out by Routen et al. (2018, p. 54), some teachers mentioned physical environments to be of relevance to the implementation of physically active learning. They expressed concerns about available physical space in the classroom, with the safety of pupils in mind. However, "there were some suggestions that reorganizing or utilizing alternative spaces in close proximity to the classroom could provide a solution" (Routen et al., 2018, p. 54). We think that safety should not be overlooked, but it should also not be a barrier to using PAL as a method. Furthermore, we think that a student's safety is taken into

consideration if one, for example, changes the learning space, as we observed when we gathered data.

Michael et al. (2019, p. 159) also cover the theme of delivery environments. They suggest establishing a classroom environment that permits students to move freely without losing academic focus by placing learning materials around different parts of the classroom and utilizing frequent transitions within lessons. Furthermore, Michael et al. (2019) argue that these are strategies for implementing PA without the need for additional resources. Additional strategies are suggested by elementary classroom teachers mentioned in Webster (2017, p. 140). These strategies include: “creating different centers (focused learning areas or stations) around the classroom that students move to and from, creating partner activities, changing locations of instruction, and strategically positioning resources around the classroom to increase students’ movement (e.g., placing markers in one corner and paper in another corner)” (Webster et al., 2017) .

The research presented in this sub-category suggests expanding the term *classroom* and changing the definition of *what* a classroom is, which may lead to a more effective delivery of PAL.

2.6 Chapter summary

This chapter has presented the theory and previous research relevant to our study. We started off by presenting the theory of PAL as a method, how humans learn, and how PAL fits into a sociocultural perspective. After that, we elaborated on how PAL facilitates for the development of the basic skills within the subject of English. This shows how PAL fits into a Norwegian classroom, how PAL could help include every student in a group learning environment, and how PAL covers the basic skills that are needed for English.

We then went on to present previous research from Norway, as well as other countries. Firstly, we found it important to investigate PAL research in Norway to provide insight into how PAL is used in a Norwegian context. To summarize the ASK study, they discovered that the traditionally “stronger” students were not affected too much by PAL in a negative or positive way. The “weaker students” were the ones who benefited the most. This could be due to the fact that PAL is a different methodology than traditional sedentary education and, thus an adapted way of teaching. Overall, our understanding was that there were no apparent adverse effects of PAL. To the best of our knowledge, there have been few studies conducted

in Norway on PAL, especially ones looking at language learning and English. We still felt that it was relevant to include this study, as it is the largest one conducted in Norway and a base for future PAL research in Norway.

Moreover, we presented the section “Teachers’ motivation.” This chapter presents arguably one of the most critical steps that are required for PAL to be effective. If the teacher does not have any personal motivation, PAL will not be a very advantageous method. Our understanding of teachers’ motivation is that it is affected by several different factors, but possibly the most influential one is “student response.” Teachers reportedly get more motivated, seeing their students motivated.

We then went on to present PAL benefits, with the main focus being on student benefits. Student benefits include how students engage more with academic content during active lessons, have more time on task, and more academic motivation. We also took a look at elements that impact students' enjoyment and movement, as these factors are instrumental for students to stay motivated when PAL is being used.

After this, we took a more in-depth look at different facilitators and barriers to PAL implementation. As shown in Figures 1 and 2, PAL is incredibly intricate and requires both intrapersonal factors as well as institutional factors to be in place in order to achieve the highest level of functionality for the method. Facilitators and barriers are two of the most recurring terms that we have observed when looking through the PAL research literature. We also see that these terms are relevant to apply to our own research. Several facilitators and barriers have been discovered in our research and many of these can also be found in the existing research. The barriers and facilitators that we have mentioned are not exclusive to schools specializing in PAL. Yet, they are factors that impact PAL implementation in general. It is important to review these barriers and facilitators in light of each other, in order to see the connections and implications they bring. Many of the potential barriers can be turned into facilitators. For example, time could be a barrier because of time constraints related to planning, use of equipment, and so on. This barrier could be overcome by, for example, having the senior management see the value of the method, providing teachers with more time to plan for PAL lessons by allocating time from the developmental time, and providing teachers with easily accessible resources needed to conduct PAL effectively. Barriers and facilitators could be on different levels, micro at a personal level and meso at an institutional level. By including these terms in our sub-research question, we aim to provide insight into

how the barriers and facilitators hinder or ease PAL implementation according to our informants and theory.

3 Methodology

This section is dedicated to the methodology used in our study. It will start by explaining the nature of our study by describing how it fits within a social constructivist approach.

Moreover, we will clarify how our study fits under the description of a qualitative study before moving on to what methods we used to gather our data material, hereunder observation, and interview. Lastly, an explanation of the methods we have used to analyze our data will be presented.

3.1 Social constructivism

Our research is based on a social constructivist approach. A social constructivist approach is derived from the fact that we, as humans, construct a rendering of a phenomenon or an object. Therefore, we can only say something about how we perceive a phenomenon (Postholm & Jacobsen, 2018, p. 49). Hence, it is our understanding that through observing teachers practicing PAL, we experienced a reality in which we saw how PAL could be utilized. Our own experience and understanding of PAL could therefore be expanded and further built upon. This is also supported by Postholm and Jacobsen (2018), who state that knowledge is in constant development and renewal within a constructivist perspective (Postholm & Jacobsen, 2018, p. 49). A social constructivist approach also implies that the researcher interacts with the subject that is being studied, according to Postholm and Jacobsen (2018, p. 49). During our observations in the classroom, we are aware that we have had an impact on our surroundings. The surroundings have also impacted us, which means that we do not have a completely neutral way of looking at reality.

3.2 Qualitative approach

For our study, we found a qualitative approach to be the most suitable for gathering and analyzing data. A qualitative approach means that the researchers focus on the attitudes toward understanding, experiences, and interpretations by humans of the social world, rather than focusing on numbers (Cohen et al., 2018, p. 287). There are several characteristics according to Cohen et al. (2018) that make a study a qualitative study. Related to our study, characteristics worth mentioning include “thick descriptions”, “the research has been conducted in an authentic setting”, and “the process of research has been as necessary as the data” (Cohen et al., 2018, p. 289). Our research is based on how a small sample of teachers utilize PAL as a method in the English classroom. Therefore, the research question cannot be

answered by using numbers. With this in mind, observation arose as a natural method in order to observe teachers in an authentic setting.

What is more, we wanted to know the teachers' experience with PAL and their reasoning behind their didactic choices. Therefore, we chose to interview our informants to gain a deeper understanding. We were able to interview both of our informants, however, we were only able to observe one of them because of unforeseen reasons related to COVID-19.

3.3 Methods for gathering data

3.3.1 Observation

In order to gather data and information about how PAL is being utilized regarding the subject of English, we find observation to be a suitable method. According to Christoffersen and Johannessen (2012, p. 62), observation is well suited for when the researcher wants direct access to the field he is researching since that often is the best way to get authentic knowledge about the situation. We have experienced physically active learning during our practice periods and PE education but without in-depth knowledge about the method. Hence, PAL as a method is new to us. Observation is, therefore, a suitable way for us to get a deeper understanding and further knowledge about PAL and how it is being utilized in English lessons. The setting of the observation is authentic, meaning that we are in an English classroom in a school that practices PAL as a method.

The purpose of the observation was to gain insight into how teachers with PAL competence conduct their English lessons and see how PAL was being used (or not), what challenges may appear, and how the lesson was affected. According to Gleiss and Sæther (2021, pp. 106-107), the role one takes when observing can be placed on an axis; on one side, the observer is placed outside the situation as a complete observer, and on the other as a complete participant. This study aimed to take the role of a complete observer, as it was the teacher we wanted to observe. Looking back, we concluded that we most likely were in between the two roles, as we were present in the different learning situations, and the students interacted with us throughout the lesson. Our presence could have had an impact on student behavior and concentration. However, we do not think we influenced the lesson negatively by our presence because the class is familiar with outside personnel, as the informant is actively participating in studies.

Since we aimed to stay as full observers as much as possible, we developed a semi-structured observation form to make it easier to track important events that happened during the lesson. The reason behind this is that although we have predetermined categories we wanted to observe, we wanted to have space to include any unexpected events that occurred. These unexpected events might be interesting to have the informants elaborate on in the interview. Therefore, the observation form contained predetermined categories with the possibility to add field notes. As stated, what we observed will be used to supplement the interview. According to Postholm and Jacobsen (2018, p. 114), observation works well when combined with interviews for qualitative research. The reason is that intersubjective knowledge and understanding can be created between the researcher and the research subjects by combining the methods. Based on this, we wanted to conduct observations before the interview in order to be able to compare the observations made with the teachers' explanations and reasoning for the activities.

3.3.2 Interview

Our research question is based on how teachers utilize PAL in the English classroom. Interview arises as a natural method to gather data to help us answer the research question, as it enables us to acquire detailed descriptions and detailed data. Furthermore, interviews give access to people's life and personal world and are a suitable method to develop competence about people's thoughts, experiences and imagination (Gleiss & Sæther, 2021, p. 78). We planned to conduct individual interviews with our informants after observing their lessons. As mentioned, we unfortunately only got to observe one informant in action due to COVID-19. Semi-structured interviews are the most common form of interview in qualitative research (Gleiss & Sæther, 2021, p. 80). In semi-structured interviews, questions are formulated in advance, but the order for which questions are asked, and the way questions are asked, may differ from interview to interview (Gleiss & Sæther, 2021, p. 80). Semi-structured interviews allowed us to get answers to our pre-determined questions while also having the opportunity to ask questions that arose from observation that we wanted the informant to elaborate on further.

A standard way to plan an interview is to prepare an interview guide. An interview guide is an overview of questions the researcher would like to ask the informants (Gleiss & Sæther, 2021, p. 82). As mentioned above, we were conducting semi-structured interviews, the interview guide will therefore be used to make sure we cover the themes and questions we want to get

answers to. Making an interview guide was beneficial because it required us to reflect upon what questions we wanted to ask and formulate questions that were understandable for the informant. Gleiss and Sæther (2021, p. 82) state that in some situations, giving the informant the interview guide in advance of the interview can be beneficial.

We provided our informants with the interview guide in advance because of several reasons. First, it is important to mention that we did not, up to this point, have any connections to our informants, other than through e-mail. Our first meeting with them would be when we observed their lessons. With this in mind, we wanted to give them the interview guide in advance to make them as comfortable as possible. Another reason is that we wanted to avoid any questions coming as a surprise for our informants. We wanted to avoid putting the informants in a spot where they felt that we were looking for knowledge gaps. One last reason is that we would get richer and more accurate information and data if we gave them time to prepare for the interview. When it came to what questions we asked, we wanted to avoid asking leading questions. Gleiss and Sæther (2021, p. 84) mention that avoiding leading questions is one of the main rules of qualitative interviews. Therefore, we avoided this by asking open-ended questions such as “In your opinion, what requirements need to be in place for a successful lesson with PAL as a method?” to let the informants express their own thoughts and opinions.

3.4 Methods for analyzing our data

Coding and transcription are critical steps in the analysis of qualitative data, and they involve organizing and categorizing the data systematically. In this section, we will discuss these processes in more detail by using Cohen et al. (2018). Transcribing and coding the data allows us to extract relevant data from the whole data set, categorize it and use it as findings for our discussion.

3.4.1 Transcription

Transcription is a crucial step in the analysis of qualitative data, and it involves creating a written record of the data. According to Cohen et al. (2018, p. 646) transcription can “on the one hand provide an accurate and verbatim record of the interview, on the other hand, they omit non-verbal aspects, what may take place before or after the interview and contextual features of the interview.” In our study, transcription involves transcribing the audio recordings of the interviews and creating written records of observations. Transcription can,

as we experienced, be a time-consuming process. However, it is an essential step in the analysis of qualitative data as it allows us to review and analyze the data more easily. In addition, we split the data material between us to decrease the workload needed to transcribe the data material, as fatigue could be a potential issue when transcribing. Lastly, we crosschecked each other's transcriptions to ensure the quality of our transcriptions.

As already mentioned, transcription is a common practice in qualitative research, as it allows us to easily analyze and interpret the data collected from interviews and observations. However, according to Cohen et al. (2018, p. 646) transcription can also introduce a number of challenges and issues that we should be aware of.

One potential issue with transcription is the potential for errors. Transcription requires the transcriber to listen to the audio recording and transcribe what was said, which can be a time-consuming and tedious process. Cohen et al. (2018, p. 646) mention that on a practical level, it may be challenging to understand what was said if the interviewees do not speak clearly or with different accents, different dialects, and poor audio quality. For example, one of our informants used a lot of “helping words” such as “*så, så, så*” and changing the direction of a sentence midway, leading to incomplete sentences. We have therefore chosen to exclude excessive words that do not add meaning to what was said. Concerning poor audio quality, the second interview we conducted was through the use of Microsoft Teams. This led to the audio quality being subpar. Additionally, we sometimes interrupted each other because of poor Internet connection and the nature of online calls. Furthermore, it is worth mentioning that this informant sat in the hallway outside of her classroom, leading to several interruptions, such as students passing by, the recess bell ringing, and other teachers making casual conversations. This recording was especially challenging to transcribe because of said reasons.

It is possible for the transcriber to make mistakes, either by mishearing what was said or by mistyping the transcription (Cohen et al., 2018, p. 646). These errors could impact on the accuracy and reliability of the data. To minimize the risk of errors, we have transcribed separately and checked each other's work to ensure that we transcribed correctly without missing any information. Cohen et al. (2018, p. 646) mention that there is voice recognition software available that can save time. However, the reliability of the transcription is influenced by the accuracy of the speech recognition and the clarity of the speaker.

We tried using a transcription software, which helped us with the typing process, converting speech to text. However, it needed to be more accurate and required a lot of manual checking and editing. This might be a result of dialects and background noises.

Another issue with transcription is the potential for bias. We as researchers may have our own biases or interpretations that can influence the transcription. For example, we could have omitted certain words or phrases that we did not consider important or tempted to add our comments or interpretations in the transcription to fit better into our study. Therefore, we transcribed separately to stay unbiased. We read each other's parts before coding the data to ensure we did not include any bias.

Thirdly, Cohen et al. (2018, p. 646) mention issues regarding the time and cost involved in the transcription of interviews. Transcribing audio recordings can be tedious, especially if the recordings are long or have difficult-to-understand accents or background noise. Researchers should carefully consider the time and resources required for transcription when planning their research study and may need to allocate a significant portion of their time to this task. Fortunately, we are two researchers that can transcribe simultaneously, thus letting us transcribe "twice as much." However, as it is incredibly time-consuming, it is a highly relevant issue for us. Even though we are two researchers, we have decided to review each other's parts to ensure that bias was not included and that everything was transcribed properly, which adds time to the already lengthy process.

The potential for data loss is a fourth issue with transcription. Audio or video recordings may be lost or damaged, either during the transcription process or after the transcription is completed. This can result in the loss of important data and impact the integrity of the research study. To minimize the risk of data loss, we took steps to protect and back up our recordings. This included storing copies in multiple secure, and password protected locations to ensure the audio recordings were not lost. In addition, we decided to make several recordings on several devices, to ensure multiple files and audio recordings. The recordings were made using a Dictaphone app provided by the university and saved in an encrypted cloud storage connected to our individual Feide accounts, which requires a two-factor authenticator in addition to a university email and password.

Overall, transcription was a valuable tool for our qualitative research. However, we found it essential to be aware of the potential issues that can arise. Taking steps to minimize errors and bias, carefully considering the time involved, and protecting against data loss helped us ensure the reliability and validity of the transcribed data before moving on to the coding process.

3.4.2 Coding

Coding is the process of assigning labels or categories to the data to identify patterns and themes. According to Cohen et al. (2018, pp. 668-669), coding "involves identifying and labeling units of meaning in the data." There are several different approaches to coding qualitative data, including thematic coding, which involves identifying and labeling broad themes in the data; axial coding, which involves identifying relationships between different codes; and selective coding, which involves identifying the central themes or concepts in the data and analytic coding which is drawing together and giving more explanatory and analytic meaning to a group of descriptive codes (Cohen et al., 2018, pp. 671-672). We have utilized these coding strategies to develop our codes, to gain a deeper understanding of our data material and to sort our data into different categories and to categorize and systemize our findings more easily.

When beginning the coding process, we reviewed the data and identified the present themes and patterns. This involved reading through our transcriptions of the interviews and the notes from our observation and identifying the key themes and concepts. We did this by assigning different colors to different categories of data. For example, blue referred to PAL, while purple referred to purely English without PA. We then had the combination of PAL and English in green, hence axial coding. Our last category was yellow, which included things that we found interesting but did not really fit in any specific category.

Once the themes and patterns were identified, we created a list of codes that we used to categorize the data. It is vital to choose codes that are specific and descriptive and that are related to the themes and patterns that have been identified. Our codes were broad enough to cover prominent aspects within their respective categories. We coded a few parts of the transcript using the codes we had developed and then reviewed the coded data to see if the codes accurately captured the themes and patterns that were present. We saw it necessary to

revise the codes and add new codes and comments after our initial coding process, as the data material we had gathered was more prosperous than first anticipated.

Once the codes were developed, we began the process of applying them to the data. This involved reading through the transcription line by line and assigning a colored code to each response based on the themes and patterns that we thought were relevant to our study. It was important for us to be consistent and accurate in the application of the codes and to pay careful attention to ensure that all relevant data was coded. We ensured this by coding separately before cross-checking each other's work to ensure we agreed and did not overlook important pieces of data.

After the data had been coded, we combined our results and analyzed the coded data to identify trends and patterns in the data material, which resulted in our findings. This involved counting the number of times each code appeared in the data and comparing the frequencies of different codes. Our findings were based on the codes that occurred the most and that we thought were of the highest relevancy. This helped us better understand the data and answer the research questions that motivated the study.

3.5 Considering the quality of the study

This section will deal with the quality of the study. We will present steps we have taken to ensure the quality of the study. First, we will discuss the ethical considerations we have taken to ensure confidentiality, anonymity, and consent. This includes information about how we store data and our research process. We will then go on to discuss our study's validity and reliability. Next, we will look at the design of our study, how we sampled and gathered data, as well as explaining how we analyzed the data, in order to enable other researchers to interpret our findings with confidence. In addition, we will also dedicate a small section to discuss possible limitations that could affect our study's quality.

3.6 Research ethical considerations

Throughout the research process, we have chosen to follow the ethical principles outlined by Gleiss and Sæther (2021). These principles originated from the National Committee for Research Ethics in the Social Sciences and the Humanities (*Den nasjonale forskningsetiske komité for samfunnsvitenskap og humaniora/NESH*). We will explain in more detail some of

the most central research ethical considerations relevant to our research: Informed consent, confidentiality, and anonymity (Gleiss & Sæther, 2021, p. 43). Another important ethical consideration we have included is avoiding negative repercussions for our informants. Before we gathered our data, we went through the process of sending an application to the Norwegian center for research data (Our translation) to be able to conduct research. This application had to be approved before we could start gathering any data (see appendix 2).

3.6.1 Informed consent

Informed consent is considered a core principle in all research where the requirements for consent are that it should be voluntary, informed, unambiguous and documentable (Gleiss & Sæther, 2021, p. 44). During our process of applying for the right to research, we wrote an informative letter to the informants regarding our research and its implications. This letter contained information regarding what it would mean for them to participate in our study. Furthermore, the letter informed the teachers that they could withdraw from the study at any given time. Lastly, even though our study is based on teacher observations, we are aware that we should consider the students that are present in the classroom. We, therefore, spoke to the teachers beforehand, asking them to inform the students and their parents that we would be making observations in their classes. One of our informants is actively participating in different studies involving his class, which means that this particular class is used to outside personnel being present in their classroom.

3.6.2 Confidentiality and anonymity

Confidentiality refers to the practice of keeping sensitive or private information secure and protected from unauthorized access. According to Gleiss and Sæther (2021, p. 45), keeping the research participants anonymous is crucial when researching. To ensure that they stayed anonymous during interviews and observations, we chose not to use their personal names. Instead, they were given nicknames for the transcription that renders them completely anonymous, and their signed letters of consent have been kept locked in a cabinet. There is no correlation between the nicknames and their real names. Our study contains two informants, one male, and one female. Therefore, when we refer to them in this study, we use he and her. We also refer to them as the first informant (the male) and the second informant (the female). All of the data material (audio recordings, transcript documents) is being kept either in a locked cabinet or safely stored on the university's servers. To access these servers, one would

have to have the correct credentials and use two-factor authenticators. We consider this a safe way to store confidential information, as it is recommended by the university.

Since our study is related to how the teachers use PAL, we naturally interviewed them to get as much information as possible. These interviews were recorded on a dictaphone app provided by UiT (*nettskjema*), which directly sends the audio recordings to the website, connected to our personal Feide accounts, which requires two factor authentication. These recordings will be permanently deleted once our research has been completed and we no longer need them. Recordings in this manner require explicit consent from the participants, according to Gleiss and Sæther (2021). We have included the form sent to the teachers before conducting the research (see appendix 1).

3.6.3 Ensuring that participants do not experience any negative consequences by participating in the study.

The last ethical principle we want to bring up is to avoid negative repercussions for our participants. Gleiss and Sæther (2021, p. 45) emphasize that participants of the study should in no shape or form be negatively affected by participating in a study. We are not researching to discover any potential knowledge gaps that our informants could have. Additionally, by anonymizing our informants, we believe that they will be unrecognizable, which means that their employers will not be able to identify them if the informants were to state something senior management would disagree with.

3.7 Validity and reliability

To accurately consider the quality of our study, we will review it in the light of two central terms: validity and reliability. We will further explain the two different forms in which validity can be applied: inner and outer validity. As explained earlier in section 3.1, our study is based on social constructivism. This will therefore affect our reliability and validity, which we will reflect upon in the right parts.

3.7.1 Validity

We will in this section discuss the validity of our study. Gleiss and Sæther (2021) define validity as the quality of our data material, interpretations, and conclusions. Validity can be divided into internal and external validity, as presented below.

Internal and external validity

Internal validity is the concept of determining to which extent results are valid for the selection or the phenomenon that is being researched or studied (Gleiss & Sæther, 2021). If the internal validity of the study is good, then the study and material presented can be trusted. It is, however, important to remember that as researchers, we need to consider other alternate interpretations of the results. In other words, we cannot determine that one interpretation is the correct one. It is, however, possible to strengthen the validity of an interpretation by presenting alternate interpretations that could be possible, albeit less probable (Kleven & Hjordemaal, 2018).

On the other side of the specter, there is external validity. External validity refers to how findings from one study can be transferred and applied to another context and remain valid (Postholm & Jacobsen, 2018, p. 238). We will use the definition by Gleiss and Sæther (2021), as they consider external validity as “how generalizable something is.” They imply that when dealing with a set of data that is considered qualitative, the researcher will try to generalize the results. This means that the researchers will develop different categories depending on the data material that can be relevant and applied to different contexts, not just the one where the results were found (Gleiss & Sæther, 2021, pp. 207-208). Hence, a result of our study could, for example be categories on how to incorporate PAL into the English classroom for teachers. Our descriptions of the context and the study will also strengthen the outer validity of our research. We utilized audio recordings and observation forms to enrichen our descriptions,

We are also, as previously mentioned, aware of the fact that our background and our bias can affect the study. Bias could potentially have a great impact on the validity of a study. Bias happens when we, as researchers, deviate from the truth during any of the phases of a research process. In relation to our study, one could argue that we are biased since we are PE teachers and interested in the positive aspects of PAL. However, we have tried to the best of our ability to minimize any bias by designing the study in a way that informants can share their own honest opinion without any repercussions, giving real insight into how they use PAL. We have also transcribed the audio recordings to ensure that what the informants say is accurately reproduced in our findings. It is important to keep in mind that these are our personal interpretations of our data material and that our research is based on a social constructivist approach. This means that we do not have a completely neutral viewpoint and that our opinions are influenced by our bias to a certain degree.

3.7.2 Reliability

Reliability addresses the quality of the research process and to which extent the study is trustworthy (Gleiss & Sæther, 2021, p. 202). Further, Gleiss and Sæther (2021, p. 203) state that research within a social constructivist view will always be influenced by the researcher's individual perspectives and experiences. It is, therefore, not possible to altogether remove bias. Researchers within a social constructivist perspective use triangulation between different sources and methods. This is based upon the fact that triangulation will give perspectives that can be discussed up against each other instead of making the research more objective.

Instead, the focus is on being balanced and including all relevant perspectives in the analysis while at the same time being aware that the researcher interprets and influences the data material (Gleiss & Sæther, 2021, p. 203). As mentioned earlier, because we ensure the confidentiality of our informants, we encourage them to give their honest opinions and feedback on what they feel works and not, which could reduce any bias and increase reliability. By being open about our own background and stating our possible biases we believe the reliability of our study will be stronger.

3.7.3 Possible limitations

When conducting a research project, it is crucial to ensure that the data gathered is reliable and accurate throughout the process. With reliable data, it is possible to draw valid conclusions and have meaningful discussions about the findings from the research. Ensuring validity at all times can prove to be a challenge, thus creating a situation where the researcher faces validity failures. These failures can arise when there are errors or other issues in the research project that have an impact on the reliability of the data. The failures could have a significant impact on the validity, and the outcome of the research, resulting in faulty results and conclusions. It is, therefore, extremely imperative for us as researchers to reflect upon and discuss our project's potential weaknesses to show that we are aware of how certain factors can have had an impact on the planning, execution, analysis, and discussion of our research.

Firstly, it is worth mentioning our sample size. When we were designing our study, we were interested in finding informants currently working in schools that have participated in the further education program from SEFAL. However, already here, we could see that our sample size would be small, as there were few schools in Norway that had participated in this program. Additionally, there were some difficulties recruiting informants from these schools, which led to us ending up with two informants. By purposely sampling knowledgeable

people, we are aware that our sample size is not the primary concern. Stating Cohen et al. (2018, p. 219), “the concern of purposive sampling is to acquire in-depth information from those in position to give it.” We also had logistical issues since our informants were located in a different region of the country. This, combined with limited resources, led to us having to resort to fewer informants than we would like to have. A small sample size could limit the generalizability of a study. We believe that our findings align with other studies in the field that have larger sample sizes. Therefore, while it may be a potential limiting factor, we do not consider it to significantly affect the validity of our study.

We are also, as previously mentioned, aware of the fact that our background and our bias can affect the study. Bias could potentially have a great impact on the validity of a study. Bias happens when we, as researchers, deviate from the truth during any of the phases of a research process. In relation to our study, one could argue that we are biased since we are PE teachers and interested in the positive aspects of PAL. However, we have tried to the best of our ability to minimize any bias by designing the study in a way that informants can share their own honest opinion without any repercussions, giving real insight into how they use PAL. We have also transcribed the audio recordings to ensure that what the informants say is accurately reproduced in our findings. It is important to keep in mind that these are our personal interpretations of our data material and that our research is based on a social constructivist approach. This means that we do not have a completely neutral viewpoint and that our opinions are influenced by our bias to a certain degree.

To ensure as much transparency as possible to improve the validity of our study, we have addressed several factors that can influence the validity. We have, for example, developed a research question with additional sub-questions to give our study a clear direction and tools to investigate PAL, keeping it focused and relevant throughout its entirety. The data collection method is also fitting for our research question, as well as the analysis method for said data. If we were to conduct our research in a different manner, we could achieve different results. For example, if we were to take a quantitative or mixed methods approach, we could do a survey surrounding PAL and send it to PAL schools in Norway. With this approach, we would most likely get a wider variety of data, resulting in us reaching more people, and providing us with different opinions and viewpoints. However, this would hinder us from delving deeper into how PAL was being used, as a quantitative approach would impede us from getting direct access to the field. Thus, it would be altering our entire research process as we would not experience PAL being carried out in an authentic, real-life setting. We are, therefore, sure that

our results and data would be very different. If it is for better or for worse is up for debate, but we believe that by having a qualitative approach to our research, we achieved the goal of gaining insight into how PAL could be used in the English subject.

4 Context, findings, and interpretations

4.1 Context

In this chapter, we will provide insight into the context of our research study and the context for the data gathering. By establishing the context and relevant background information, we aim to give an honest and clear understanding of the context our research was conducted in. It is important for the reader to understand that the context is situational, and that the data material has been affected by the researchers and the setting. Therefore, we aim to give an accurate description of the context in order to increase the validity of our findings, as discussed earlier in the section above.

To answer our thesis statement, data needs to be gathered from schools practicing physically active learning where teachers have completed the further education program from SEFAL. Therefore, we have gathered our data material from two different teachers working at separate schools here in Norway. The two teachers were male and female, and they currently work in upper primary school (*mellomtrinnet*). Both teachers have around 20 years each of experience in the educational field. The data material consists of observation and interviews. With the first informant, we were able to visit the school and observe an English lesson in which he utilized physically active learning as a method. After the lesson, we conducted an interview which lasted for one hour, where we were able to ask questions related to the lesson we just observed. Further, we were able to ask questions from our pre-planned questionnaire.

For the other informant, we planned to observe two separate lessons in addition to the interview. Unfortunately, we were not able to conduct these observations due to an outbreak of the COVID-19 virus at her school. However, we were able to arrange an interview through Microsoft Teams. We used the same questionnaire for both informants. The second interview was shorter than the first (30 minutes) since we were unable to observe a lesson. Because we were not able to observe a lesson, we were unable to ask elaborating questions about the content of the lessons, resulting in a shorter interview.

Our first informant has a crucial position at his school regarding the development of physically active learning at the school and among the staff. He and another person at the school have extra responsibility for staying updated on physically active learning. He is also currently participating in a research project by SEFAL, which is the institute behind the

further education program. Our second informant was seemingly one of the few people at her school who still had an interest in further developing her PAL competence, even though she was not particularly happy with the training she had received from SEFAL. However, through talking during the interview, we learned that after the PAL-intervention, she saw how it affected the pupils in a positive way, thus furthering her interest in the method.

4.2 Context for observation

This section will provide relevant information and context for the observations we conducted. The observation was carried out during an English lesson where the informant practiced physically active learning. The school is a base school (*baseskole*), meaning that they have open classroom solutions. The lesson itself lasted for one hour and thirty minutes. The class consisted of 15 students; most of the students were boys. As mentioned above, the informant is participating in an ongoing research project. Therefore, the students are used to having people such as researchers and other outside personnel involved in the classroom. We believe that the students were not particularly affected by our presence, because of this fact. We, therefore, think that the lesson we observed was as close to an authentic lesson as possible. It is worth mentioning that this lesson took place right after recess and lunch, which can positively and negatively impact students' concentration.

The lesson was split into three different segments, where two of the segments contained physically active learning. We utilized a premade observation form with set categories for observations and interpretations in order to categorize data systematically and efficiently while being in the classroom context. The first segment took place in an amphitheater located at the main entrance of the school. The space consisted of a main floor, a big staircase where students can sit and look at a smartboard hanging from the wall, and a second floor that connects to the administration and classrooms. The informant used the smartboard to present several glossaries related to Australia, which was the theme they were working with at the time (see figure 5). Further, the informant had produced short texts about Australia, where one word was missing (see figure 4). These texts were placed at various heights all around the amphitheater. The students' task was to match the glossary from the smartboard to the correct text. The students worked in pairs to solve the task, and one of them had to write down the complete sentence once they had found the matching text and glossary. The teacher used a stopwatch to control the length of the activity. This activity lasted for approximately 20 minutes.

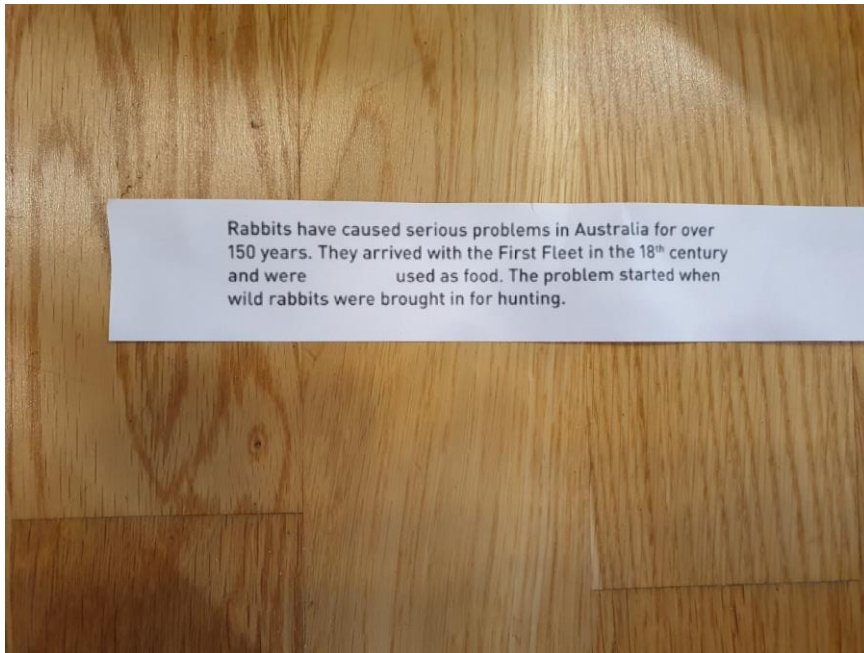


Figure 4 Activity 1 example



Figure 5 Amphitheatre, picture taken from stairs.

In the second segment, we were back in the classroom, where students worked in the same pairs, and the theme was still Australia. Since this is a base school, the classrooms had extra space with the same function as a group room without the wall (see figure 6). This small area consisted of a table and some chairs, as well as the computer cabinet. The smartboard in the classroom was utilized by the teacher, where he put pictures of Australian animals. The students were then asked to go to the extended area to find the text describing the presented animal. The texts were of various lengths (see figures 6 and 7). After finding the correct text, they were to return to their seats. The teacher made sure everyone found the correct text. Lastly, students read the text out loud. This was repeated until all the animals had been shown.



Figure 6 Task with one of the researchers

From pets to pests

Animals and plants sometimes end up in countries or areas where they don't belong. They are called alien species because they come from another part of the world. They are often, but not always, introduced willingly by humans. When they grow and take over local species, they become a threat to the local environment.

The King crab in Norway is an example of alien species that has come to Norway from another part of the world. To start with, there were only a few on the north coast, but they have now spread along the whole of the Norwegian coast. Some of the biggest environmental problems in Australia are caused by animals or plants that have been brought into the country and have grown out of control. They have often been introduced by humans as pets like cats, or as domestic animals like goats and pigs. They have also been brought in for hunting purposes like rabbits and foxes or as work animals, like camels. Some have been introduced as agricultural pest control but have become pests themselves, like the cane toad.

Red roos

Australians often refer to kangaroos as *roos*. The red kangaroo is the largest of all the roos. A male can grow up to 2 metres in height and can weigh over 80 kilos. A kangaroo's tail is almost as long as its body. The roo uses its tail for balance when it is hopping. When the roo is resting, the tail is used as support, like a third leg. Kangaroos are the only large animals that move by hopping. Females are smaller, lighter, and faster than males.

When a baby kangaroo is born, it is tiny, pink, not fully formed, hairless, and blind. Right after birth, it crawls into its mother's pouch. Baby kangaroos stay in their mother's pouch until they are around eight months. As they grow, their head and feet can often be seen hanging out of the pouch. It's high time to get out!

Figure 7 Activity 2 example

In the last segment, the students were tasked to write five sentences about Australia on their computer. The teacher informed us that when they write on the Chromebook, he has access to the texts. They were free to write any fact they wanted, as long as it was related to Australia. They could use the different spaces freely and work with whomever they wanted. This is the only task where physically active learning was not involved. This task functioned as a summarization of the topic.

4.3 Findings and interpretations

This chapter will present the findings that we discovered during our research on the topic of physically active learning, followed by our interpretations. The main purpose of the study aimed to look at how teachers at PAL schools use physically active learning in the English subject, and what English teachers, in general, can learn from the PAL methodology. By examining the data gathered from observation and interviews, we were able to gain a deeper understanding of how these teachers use physical active learning in the English classroom, which resulted in four main findings. We transcribed and coded the interviews to accurately analyze the data. Further, the findings are relevant for teachers of English as well as other researchers that are looking into this topic.

4.3.1 Finding 1 – Personal motivation and personal

During our coding, the first feature that struck us was the importance of the individual teacher's interest in PAL. This was not surprising, as the literature review had already shown that personal motivation and personal interest seemingly was vital for successful PAL implementation. This is reflected both in the literature and research in the field. This study focuses on teachers and their use of PAL. We therefore found it important to ask our informants, who are experienced with the method, what they believed needed to be in place for successful PAL implementation in English. With this in mind, we asked this question during the interviews with both informants:

"What, in your opinion, is necessary for a lesson using physically active learning as a method in English to be successful?" (See appendix 3, question 11)

Both informants answered that personal motivation and personal interest were, without a doubt, highly important for physically active learning to have the most effect. The first informant answered:

"First and foremost, that adults are interested in carrying out physically active learning and see the benefits of it. Often it can be us adults who set limitations." (Our translation)

The second informant answered:

"The most important thing is that the teachers who are doing this (PAL) are motivated, I seriously believe that. When we started this further education (*videreutdanning*), there were many who were not motivated and the students also

noticed that, then it becomes ineffective, so those of us that are practicing physically active learning must be motivated.” (Our translation)

Based on the answers given by our informants, we interpret that without personal motivation and interest, physically active learning would not be a suitable method to use in any context, including the English classroom. We find it interesting that both informants named these factors as the most important for successfully conducting physically active learning.

We then asked a follow-up question, wanting to know if the informants thought that the further education program (SEFAL) was necessary to conduct physically active learning in the English classroom, or if it was a feasible method to use without the further PAL education. Again, this is because we wanted to know which factors that could impact physically active learning in an English classroom setting, with or without training from SEFAL.

Our first informant was quick to give “personal interest” as an answer to the question presented above. By working with physically active learning as a method for some time, as well as having an important developmental role regarding PAL at the school, he stated that: “I think most people will get it (PAL) to work, and I think that many people will be surprised of what is considered physically active learning. It does not necessarily need to consist of a lot of equipment on a grand scale. Leaving the desk and solving tasks in other parts of the classroom can be enough. The most important thing is that the body notices a change in activity level, which triggers the mind.”

Our interpretation is that personal interest is, according to this informant, a fundamental factor in order to incorporate PAL for teachers with or without further training. Our understanding is that if personal interest is present, physically active learning may not be that difficult to conduct for teachers in general. It could be seen, according to our informant, that teachers in general seem to overthink the concept of physically active learning and therefore choose not to utilize PAL.

Our second informant explained that physically active learning was something she had used before the PAL education when asked the same question and that:

“Physically active learning is something that everyone can incorporate in their teaching, because there are databases such as the ASK-base that are available for everyone's viewing, and that some learning activities can be created (by the teacher) as well.”

Our interpretation of the statement is that this teacher views physically active learning as something that anyone can use in their teaching. We base this interpretation on the fact that there are many digital- and hard-copy resources available that can guide teachers and inspire them to make lesson plans that facilitate the use of physically active learning. Further, we believe that since the resources are publicly available, personal interest might determine whether or not someone chooses to make use of the resources.

To summarize our first finding, by reviewing the answers to the two questions presented above, we believe that simply having a personal interest for physically active learning as a teaching method makes it possible to incorporate it for everyone. It is also worth noting that PAL, according to the first informant, happens when the body notices a change in activity level. This makes PAL an easily accessible method for teachers since PAL could be considered anything that combines movement and academic content. Teachers that have not gone through the further education program might overthink the concept of PAL and, therefore, could choose not to integrate it in their teaching. The second informant expresses that there is a growing number of free resources available regarding the PAL methodology. This could, in theory, make it easier for teachers to use PAL if personal interest and motivation are in place to take advantage of the already premade material. Finding one boils down to the importance of personal interest and motivation as a fundamental part of successfully incorporating PAL. This will be further elaborated on in the discussion.

4.3.2 Finding 2 – PAL on the timetable

Our second finding concerns the concretization of physically active learning on the timetable. It became apparent to us during the interviews that both informants made sure to include PAL on the schedule for the week. We have also observed this by looking at their timetables outside of the interview by visiting the schools' homepage. When talking about why PAL should be highlighted on the timetable, informant number one said:

“You must commit to conducting physically active learning. It needs to be on the timetable. If it is not, it is easy to neglect. It is important to commit to PAL and that the students have it concretized on their timetable as well.” (Our translation)

The second informant also underlined the importance of having PAL on the timetable and said that they had it at least twice per week, which she made sure to highlight on the timetable. Our interpretation of these statements is that it is of great importance to hold yourself accountable by having it concretized on the timetable. We think that it adds a layer of stability and predictability to the students as well when it is on the timetable. As previously mentioned, the first informant told us that he has some students that experience school refusal. He adds that these students have a higher attendance rate when they know they will have physically active learning. We find it reasonable to assume that this is a result of the concretization and that students know that they will have physically active learning that day.

4.3.3 Finding 3 – The L in PAL

When conducting physically active learning, physical activity can often become the main focus unintentionally, neglecting the learning aspect. The third finding was something that we first observed during the lesson with Informant 1 and was further discussed in the interview following the lesson. During our observation of the first segment, we saw how the informant summarized and discussed the academic content of the activity with the students after doing the PAL activity. After the glossary activity in the amphitheater, the students returned to the classroom. Here, the informant made sure to summarize the activity by repeating the new vocabulary. The words that he had chosen for the glossary were related to the topic of Australia, which he made sure to remind the students of. In the second activity, he had the students match text to picture while also practicing oral skills by reading out loud. Like the first activity, he made sure to summarize and repeat the content by having the students read the text out loud. In the last activity, the students were to write five factual sentences about the topic of Australia. We observed that the teacher gave the students the opportunity to work freely on this task. In the interview with the first informant, he explained that he has an immense focus on the L (Learning) in PAL. When asked if he “takes any concrete measures when planning a PAL lesson in the English subject” (see appendix 3, our translation, Q. 5), he replied:

“The last year I have focused on the three letters in PAL. The P (physically) and the A (active) is self-explanatory and pretty straight forward, but the L (learning) is also important, especially when students are in year 7 as compared to a year 1 student.”

(The informant asked us to repeat the question)

“In relation to PAL, it is important to have the competence aims in the back of the mind, because it can quickly become too much physical activity and then the L (in this case, the topic of Australia in English subject) can be a little like “oh, we are actually supposed to have passed these competence aims”, so that you keep that in the back of your mind when making PAL lesson-plans to ensure that it fits within the ordinary education.”

“(…) And when we have PAL, it should be clear that we are practicing PAL… PAL should not be on the side of what we are doing. And that could be a small challenge in relation to the English subject, it is not always easy to have a natural transition from one activity to another, because the students are aware that the activity should contain some activity, and to also have an element of play in the (L) learning.”

Towards the end of the interview with the first informant, we asked about this topic again based on our notes made during the observation. We asked the question: “We previously talked about the L in PAL, and it appears to us that you always have it as a focus to return to the L. Is that something you are conscious of?”

Informant 1: “It is something I am very aware of, yes. It is to make sure that the L is in focus. Especially since they are soon to be in lower secondary school (ungdomsskole), the learning part is important. However, learning can be so many things. It can be the social aspect, the creation of the complete human, et cetera. For example, the L, in this case, was the topic of Australia. They were to produce something about Australia and use the glossary they had learned. So even though we have the focus on the L, it is important to have a focus on the P and A as well. We are to educate them on a lot of things as human beings, and we also have

the health aspect to consider as well, where we can inspire them to be physically active outside the school too.”

Firstly, our immediate interpretation is that the L in PAL is of utmost importance. Based on what we saw and how he answered the questions we asked, the L was a major part of his lessons, especially in the planning phase. We also took note of the statement about the importance of the L, especially in higher-year groups. We interpret this statement as something essential to keep in mind, that younger students need more play with more emphasis on the physical activity, while older students can have a more balanced relationship between P, A and L. The first activity was summarized after the activity was finished by explaining and repeating the glossary.

Our interpretation is that he constantly goes back to the L, as well as making sure that all the students are on the same page before he continues with the next activity. For the second activity, he had the students read the texts out loud, and he made sure that everyone would read it together. When they went to pick up the text, they could theoretically have skimmed to find the correct one but not actually read the information closely, but by having them read out loud, everyone was given the opportunity to read it thoroughly at least once. We interpret that by reading the texts out loud, the students had the opportunity to practice their oral skills. They got to work on pronunciation, listening, and the ability to express themselves clearly. In the third activity, students were to write sentences about Australia on their own. This was an autonomous writing task that gave the students the opportunity to produce text about something they might find interesting. They were given the option to sit and work in a calmer work environment. We interpret that this activity was incorporated into the lesson to include elements of “ordinary education” and to ensure the L is maintained in the PAL lesson. Secondly, we believe that based on the quotations presented above, the balance between the letters in PAL is extremely important. We think that in order to maximize the potential for learning in a lesson utilizing PAL, a healthy mix of P, A and L is needed.

4.3.4 Finding 4 – PAL and basic skills

The interplay between PAL and oral skills in the English subject is a highly relevant topic to consider when practicing the PAL methodology. Our fourth finding focuses on the connection between oral competence and physically active learning and how PAL can facilitate for increased oral activity. This finding will provide insight into what our informants think about

how oral skills are included in the teaching when PAL is being utilized. Our finding includes examples made during our observation of the first informant. An exciting aspect of this finding is that the informants themselves brought up this information during the interviews, at different times. For instance, the first informant brought it up when asked about a “previously successful lesson that utilized PAL.” He said that:

“What I find a bit challenging is; what about the academically strong students. They can obviously manage the academic aspects of English, but what they may struggle with is communicating in English, especially speaking English with others. They can read very well with me, but communicating and cooperation in groups, is something they must practice. I see that physically active learning has improved students' oral skills as well as their cooperative ability” (Our translation).

During our observation, we also saw how the informant used activities that required cooperation and promoted oral communication between the students.

The second informant was asked the question, “What do you think your students think about PAL in the English subject?”, to which she replied:

“I am aware of what they think, because we discuss these sorts of things when we have student conversations (*elevsamtale*). A lot of the students say that they learn more when we have PAL. It also seems that they have more courage to express themselves orally. Especially if the activities involve some sort of competition, if they can win something, they become more orally active for some weird reason” (our translation).

We found it interesting that both of our informants brought this up by themselves without us asking directly about this topic. We interpret that physically active learning in the English classroom can increase oral communication between the students. This is based on the fact that both informants discussed increased interactions between the students when PAL was being used as compared to ordinary education. We think that PAL enables the language to be used in a more natural setting because the students are moving around, using the environment, and engaging in authentic conversations regarding the activity they are participating in. For

example, in the first activity that we observed, the students had to talk and discuss whether or not the vocabulary fit the sentences. This task promoted both oral skills and cooperation. We also believe that the threshold for engaging in English conversations becomes lower when they are given the opportunity to work in smaller groups, as compared to raising their hand and speaking out loud in a classroom setting where all eyes are on the speaker.

We have now presented our four main findings from our data material. The findings are varied and cover different aspects of the PAL methodology. By interpreting our observations and interviews, we saw how interconnected these topics were, which became the foundation for further discussion in the next section.

5 Discussion

In this chapter, we will examine the findings from our research, discuss their significance, and review them in the light of theory, previous research and look at how our findings can impact future research. To ensure precision and dependability in our work, it is necessary to thoroughly examine every aspect that impacts our results and not overlook any aspects, in the light of existing research.

The primary objective of our research was to investigate how teachers that have participated in the further education program on the use of PAL provided by SEFAL, use physically active learning in their English teaching. To achieve this, we conducted qualitative observations of learning activities and interviews with two informants. In previous chapters we have presented the results of our research as well as our findings. We will in this chapter take a closer look at these findings, discussing their implications and relevancy for how physically active learning can be used by English teachers in the Norwegian classroom. Our findings are divided into four different sections. These sections are (1) Personal motivation and personal interest, (2) PAL on the timetable, (3) The L in PAL, and (4) PAL and basic skills. We will discuss our findings one by one, making connections to our research- and sub-questions. Further, we will discuss plausible explanations for the outcome of our research to ensure that we look at all possible angles.

5.1 Personal motivation and personal interest

Personal motivation and personal interest are key factors to successfully conduct physically active learning. The result from our data showed that with personal motivation and personal interest, physically active learning can be easier to use effectively. We have decided to divide this finding further into personal motivation (1) and personal interest (2) because although they share similarities, some distinct differences separate them. When PAL is initially unknown for teachers, personal interest might determine if they decide to incorporate it and develop motivation over time. We will start by discussing personal motivation and interest at a micro level. Furthermore, we are going to investigate the meso level by discussing how senior management can impact personal motivation and interests.

Several factors may influence teachers' personal motivation at a micro level. One of our informants stated that the adults who are to conduct physically active learning must be interested in committing to PAL as a method. He went on to say that often it is the teachers

who can be the limitation. Additionally, he claims that the teacher must believe in PAL as a method and that students notice that when teachers are motivated, it gets infectious. When the students see that the teacher is engaged and motivated, it impacts student motivation in a positive manner. Our other informant had similar experiences regarding this point and proclaimed that students know when their teacher is not motivated and that this will negatively affect student motivation. These comments from our informants show that personal motivation is crucial in the implementation of physically active learning but also plays an essential role in student motivation.

The current relevant research in the field, such as studies by Webster et al. (2017) and McMullen et al. (2016), also report results similar to ours. For example, one teacher participant in Webster et al. (2017, p. 140) expressed that teacher motivation was infectious and that his motivation was boosted by the students being motivated. Based on our findings, combined with those from Webster et al. (2017), we interpret that the interplay between teachers motivating the students and vice versa, is a loop of positive interactions. We noticed that our research and the research in the field agree that it is fundamental for teachers and students to enjoy physically active learning to keep practicing the method. Lack of motivation towards physically active learning from either teachers or students may break this positive cycle and lead to less effective PAL delivery. It could be argued that teachers should try to keep their motivational levels up and stick with PAL; even though students do not seem to reciprocate the enthusiasm immediately, they should give their students time to get used to the method over time. Perhaps, the students will get familiar with the method over time and learn to value it. Routen et al. (2018, p. 52) argue that PAL should be implemented across all year groups and not as an “isolated event.” By incorporating PAL in the early stages in the students’ education, they get a chance to be familiar with and confident with PAL as a method. This could boost students’ motivation and attitudes towards PAL, which again could lead to increased personal motivation amongst teachers, which keeps the cycle going.

According to informant 1, personal interest was one of the most important and influential factors for using PAL, for teachers who have not partaken in a further education program specializing in PAL. This was the response we got to the follow-up question we asked, when trying to figure out if the informants thought other teachers could use PAL, that had not taken part of any PAL teacher training. To summarize his answer, he explains that teachers without PAL training are more than capable of conducting PAL and that teachers generally might overthink the complexity of PAL as a method. He goes on to say that PAL does not

necessarily need to consist of a lot of equipment. The essence of his answer is that it can be enough to leave the desk and solve tasks in other parts of the classroom and that the body notices a change in activity level. By analyzing these statements, it can be interpreted that PAL might sound more challenging and time consuming than it in reality is. In fact, during our observation, we saw a great example of how easily PAL could be incorporated into a lesson (see section 4.2).

To the lesson, the informant only brought printed-out tasks and his laptop. The smartboard was already in place and ready to use. The students worked in pairs and used pen and paper to write the answers down. We consider this to be a PAL lesson with little to no extra equipment compared to a “normal” lesson. This way of implementing physical activity into a lesson, combined with more knowledge about what could be considered PAL, might influence teachers’ motivation and personal interest to try PAL. It also shows that PAL does not necessarily need to take up much planning and preparation time. Time constraints can be found in already existing research. Daly-Smith et al. (2020) discovered that participants were aware of PAL benefits but expressed concerns regarding time and how to implement PAL in their classrooms. Webster et al. (2017) noted that teachers were worried about how PAL looks and takes place in the classroom. Based on this, our understanding is that our finding corresponds with existing research regarding time constraints. It is worth noting that personal interest might influence a teacher’s willingness to acquire knowledge about PAL and to incorporate it into their teaching.

Our second informant also thought that PAL could be carried out by teachers without PAL training. She had previously used PAL herself before attending the PAL further education program. The informant explained that PAL was something anyone could make use of in their teaching, because of all the resources that are publicly available, for example on the Internet. She highlights the ASK-base which was created to support teachers participating in the study with already made lesson-plans, developed by Resaland et al. (2016). This website is now free to use for anyone and can be easily accessed. Based on this, we interpret that by having ready-to-use lesson plans available online, more teachers can be motivated to try and use PAL, as it lets teachers save time on planning and focus more on carrying out the lesson. This is supported by findings in the study by McMullen et al. (2016, pp. 326-327), clearly stating that teachers value pre-made lesson plans. To summarize, it can be seen that having resources available impacts personal interest and motivation to use PAL in a positive way.

At the meso level, senior management could affect teacher motivation as to whether or not they support and facilitate for the method physically active learning. Both of our informants work at schools that have participated in the SEFAL further education program. These schools value physically active learning, and it is a core principle in the schools. Based on this, we asked our informants if senior management took the initiative to participate in the further education program, to which they both responded yes. Informant 1 went on to explain that the senior management sent the teachers to a school already participating in the program to see how PAL was being conducted in an authentic school setting. Webster et al. (2017, p. 139) discuss how many teachers participating in his study had not gone through in-service training and therefore feared how PAL would look and take place in the classroom. Informant 1 may therefore have overcome this potential barrier of how PAL takes place. This could have resulted in increased motivation to incorporate PAL in his teaching. He said that after this trip and to this day, the senior management at the school fully supports PAL as a method. Furthermore, he explains that senior management facilitates for further development of PAL at their school by, for example, using the development time (*utviklingstid*) to work with the method. This clearly shows that the senior management at this school facilitates for the personal development of their teachers' PAL competence. Having support at a meso level might boost teacher motivation toward incorporating physically active learning.

Routen et al. (2018, p. 52) also mention the importance of having the senior management see the value of physical activity. The initiative has to come from the senior management to prevent teachers from remaining within their comfort zone, and to make teachers feel that PAL is valued and prioritized (Routen et al., 2018, p. 52). It can be seen from both the literature and our findings that the support from senior management positively impacts teacher motivation and interest to continuously incorporate PAL into their teaching. For example, if the school does not allocate time for the development of physically active learning-related work in their developmental time, PAL could become another stressful factor for teachers to handle in an already busy schedule. On the other hand, if teachers feel that PAL is valued and prioritized, it might make it easier for teachers to motivate themselves to conduct and continuously work with PAL. Lastly, on this point, we believe that individuals can be initiators for PAL at their school by encouraging senior management by promoting PAL.

There are a lot of factors that play a part in the decisions behind teachers' didactic choices when planning a lesson. For example, whether or not to use physically active learning as a

method seems to be especially intricate according to the literature as well as our research. One of the most significant factors that are brought up in several studies, such as McMullen et al. (2016), Michael et al. (2019), and Routen et al. (2018), is time constraints. This was confirmed by our informants, who expressed that time could be a barrier to PAL implementation for all teachers, including those who had undergone PAL education. Our second informant explained that in the early stages of implementing physical activity into her teaching practice, she spent a lot of extra time planning the lesson, which made it tiresome and time consuming. She went on to state that after a while when she had gotten more familiar with the method, she experienced that coming up with variations of activities and planning new ones took less time. Our interpretation is that time impacts motivation because when PAL becomes more accessible, the threshold to incorporate it gets lowered.

In sum, personal motivation and interest can be seen in the literature as defining factors for the effective delivery of PAL. Data from our informants show similarities with the literature. Our informants add that it is crucial, especially for teachers that have not undergone further PAL education, to be personally invested and motivated to commit to PAL. It is important that the teacher believes in the method and is motivated, to facilitate the loop of positive interaction, strengthening further motivation for teachers and students. Senior management seems to be of great importance in the literature, and when speaking with our informants, it is clear that they get motivated from being supported by their school and colleagues. In addition, it is important for senior management to encourage teachers to stay motivated and engaged to avoid staying behind in the comfort zone, choosing not to conduct PAL. Finally, available resources can help overcome time constraints, giving teachers more opportunities to incorporate PAL and making it easier to use.

5.2 PAL on the timetable

Concretization of PAL on the timetable holds teachers accountable to incorporate the method continuously. This finding illustrates the importance of concretizing physically active learning as a concept for both teachers' and students' sake. Both of our informants make sure to commit to PAL by having it on the timetable every week. Not only does this make sure that teachers conduct PAL, but it also adds predictability and stability for the students.

It can be argued that when PAL is on the timetable, it becomes incorporated into the English lesson, and not an unrelated addition to the lesson. In the study by McMullen et al. (2016), one teacher felt that PAL was something extra that was being asked by the teachers, and that

it created logistical issues related to adding PAL into the day. This teacher might overcome this mindset if she was to commit to PAL by adding it to the timetable. In this way, PAL will be in her thoughts when making lesson plans, making it an integrated part of the lesson, and not an isolated event. Another teacher in the same study expressed that PAL was a great addition to the lessons, and that it was not something separate, instead it was like it was part of the lesson (McMullen et al., 2016, p. 326). This teacher seems to have understood the concept of PAL, and the fact that PAL should be incorporated into the lesson and not as an unrelated and stressful addition. We do not know if this teacher includes PAL on the timetable or not. However, it is reasonable to assume that when PAL is on the timetable, it becomes a more integrated part of the lessons.

PAL on the timetable can positively impact the planning phase for teachers. It could, for example, influence the logistical issues related to the different delivery environments. As mentioned in the theory chapter, participants in a study from the systematic review by Daly-Smith et al. (2020) agreed that the potential for PAL was greater if the whole school was used as a learning space, that includes halls, green spaces, and playgrounds. Using different parts of the school will require cooperation with other teachers to make sure that the space they want to use is not occupied by another class. When PAL is on the timetable, teachers have more time to deal with the logistical demands the method can bring and can plan weeks ahead by letting colleagues know what spaces they plan to use. Thus, having PAL on the timetable can provide logistical benefits for teachers, making it a facilitator. Another obvious benefit of having PAL on the timetable is the stability and predictability it creates for parents of students. Parents can plan for appropriate clothing if they see that PAL is taking place outside. If, for example, half of the class does not have appropriate clothing to stay outside for more extended periods of time, the teacher would have to change the lesson plan in the moment.

Another benefit of planning PAL in advance is that the teacher has time to prepare the equipment and learning resources that are needed to use PAL in the lesson successfully. Our informants work at schools that have a whole-school approach to PAL. The schools have set aside space to have a room dedicated to storing learning resources and equipment that can be used for PAL implementation. Participants in the study by McMullen et al. (2016, p. 325) provide insight to the topic of equipment and learning resources; they express that having ready-to-use equipment would make it easier to conduct PAL. By having access to a PAL storage room, the time needed to prepare, and the stress related to locating learning resources and equipment to use in the lesson, decreases. We assume teachers working at regular schools

without further PAL education do not have the luxury of having access to a dedicated PAL room. This could impact teachers' willingness to use PAL more regularly. We argue that teachers that do not have access to a PAL room spend more time planning and locating equipment. Therefore, it might be even more critical for these teachers to have PAL on the timetable because it could enable and encourage them to plan further ahead, as they might need more time planning. To summarize, having PAL on the timetable could help teachers start the planning process earlier, which may facilitate better PAL implementation.

The first informant stated that some of his students experience school refusal, especially after the global pandemic. These students had a much higher attendance rate when they had PAL lessons, according to him. He added that this is just his personal observations, not official statistics. However, researchers in an ongoing study he is participating in have also noticed this trend, which might be interesting for future research. Having PAL on the timetable could therefore create more predictability and stability for students. Creating predictable schooldays might, over time, help them overcome school refusal. Furthermore, when teachers experience that student with school refusal attend lessons where PAL is included, it might boost teachers' personal motivation and interest to use PAL. It is reasonable to assume that when teachers notice positive changes in students' school attendance, they might try to incorporate this teaching method more often.

We are aware that PAL cannot be used in every lesson. However, if PAL enables more students to come to school, we argue that it can positively impact students' attendance and attitude towards school. We think that this point is important and should not be overlooked, because without attendance from students, learning cannot take place. It is also worth noting that this example is not necessarily applicable for other schools, as all students are different, and their reasons for why they are experiencing school refusal will differ. For some students, PAL could potentially be a barrier to school attendance, and they may favor more traditional lessons. Lastly, it seems like PAL and school refusal are connected to some degree, both according to our informant and researchers. It is, therefore, an exciting topic that we hope will be researched further in the future.

To summarize the discussion of the finding "PAL on the timetable", there are several beneficial factors of including PAL on the timetable as mentioned above. Predictability and stability for teachers and students alike is one of the major benefits of including it on the timetable. PAL on the timetable could also make PAL a more integrated part of a lesson, as it

is something thought out and planned and not a spontaneous, isolated addition to a lesson. It could also ease the planning phase for teachers, providing more time for overcoming logistical barriers related to delivery environments and learning resources/equipment. Lastly, PAL on the timetable can positively impact students that experience school refusal. This point is particularly specific for our informant, but it sheds light on PAL as a possible motivational factor for students experiencing school refusal.

5.3 The L in PAL

Physically active learning, as a method, consists of the three letters P, A, and L. These letters represent different parts of the method, and when combined, is what we know as PAL. What makes PAL a viable method for an educational context is the L (learning) aspect. The letters P (Physically) and A (Active) can be seen frequently throughout a school day, for example recess, moving between classrooms, and of course, in the PE subject (physical education). Moreover, PAL happens when movement (P and A) is combined with the delivery of academic content (L) with the purpose of creating physically active learning (PAL) activities. Our third finding regards this balance between these letters and the importance of paying attention to the L.

In the lesson we observed, the topic of the academic content was Australia, and vocabulary connected to Australian wildlife and culture. We noticed how, after every activity, the informant reiterated the academic content to ensure that learning objectives were met. The way our informant made sure to return to the L, intrigued us and became a topic of discussion during our interview. We asked him if there were specific measures related to the planning of lessons in the English subject when PAL was the method for learning. He immediately responded that the balance between the letters was something he always kept in mind when planning and that the L was even more important for students in year 7 compared to year 1. This statement makes sense to us since the students in year 7 are more susceptible to learning and should therefore be able to handle more information. Moving on, he mentions the importance of having the competence aims in mind when planning PAL lessons to ensure that the L is included, while also making sure to stay within the framework of “the ordinary education.” One can argue that this way of planning lessons ensures that the learning does not get neglected when combined with physical activity and that PAL becomes an integrated part of lessons (see section 4.3.3 for more in-depth quotations). We presume that basing the lesson on competence aims, the learning aspect is maintained and becomes an integrated part of the

method. This makes PAL a viable method to use in an educational setting as good planning begins with and incorporates competence aims.

Maintaining a balance between the letters could provide beneficial educational outcomes for students. When physical activity is combined with academic content and successfully integrated into a lesson as opposed to an isolated event, the learning potential from said activities could provide more significant educational outcomes (Routen et al., 2018). Our male informant firmly believed that balance between the letters leads to the best learning opportunities. In the interview, he emphasized the importance of integrating PAL in a way that ensures balance between the letters and not an English lesson with additions of physical activity throughout the lesson. He stated that “it should be clear that we are practicing PAL... PAL should not be on the side of what we are doing.” We argue that when P and A is combined with academic content (L), students could associate certain academic content with specific activities. The connection between academic content and specific activities is also a topic mentioned in the study by McMullen et al. (2019). For example, it was indicated that students felt they learned better when moving around compared to traditional education, where students mostly sit at their desks. Students interviewed in the study explained that they wanted more movement in their education, and some of them cited increased learning as the main reason (McMullen et al., 2019). One student reflected that she remembers learning something while doing a specific activity, in this case, football. The study by McMullen et al. (2019) does not specify which learning objective the student referred to. However, it could seem like the student has made connections between the activity and the academic content.

This connection clearly shows that the PAL methodology could help with memory retention for students. When students have concrete activities that they relate academic content to, they can create their own schema or mental system to better remember the content of the lesson. In our observation, we saw how they worked with the theme of Australia outside of the classroom. It looked like students were enjoying themselves and cooperating with each other. These positive interactions with the academic content in the English subject could lead to students creating schemas, which in term could lead to better memory retention.

Theory and research show that PAL as a methodology could help student learning, focusing on concentrating and time on task. For example, Martin and Murtagh (2017, p. 225) cover how PAL as a method is very suitable for revising already covered topics. The lesson we observed was a summarizing lesson that covered the topic of Australia, which they had

worked on for some time. During this lesson, they revised vocabulary by fitting the correct word into the correct sentence. In the interview with the informant, he expressed that this was one alternative way of testing if the students had acquired the vocabulary connected to the theme they were working on. He used this method instead of traditional glossary tests. We find that this shows a greater understanding of the vocabulary compared to a regular glossary test, because students were not only translating, but required to use the correct word in an authentic, relevant sentence. Furthermore, we argue that this way of revising vocabulary is less formal than a regular glossary test, which can help keep the stress levels of students down, because of the less formal setting. This point could be especially applicable to students who experience school refusal.

Additionally, we observe that when students are working in smaller groups, walking around, they can potentially stay focused for more extended periods of time as opposed to sitting down. The reason for the increased focus could be because the body stays active and, stating Martin and Murtagh (2017, p. 225), “Children take in more information when they are active as their concentration levels rise.” This fits well with having a holistic approach to learning, that humans learn with the entire body. It is also worth mentioning that everyone who has worked with young learners is familiar with the fact that they have a lot of excess energy and that it could be challenging to maintain their focus over long periods of time. Using PAL in a lesson could therefore convert this restless energy students naturally have into productive energy, which could lead to more academic and social development for these students. If the students experience academic and social growth with the help of PAL, it will potentially, lead to students spending more time engaging in academic content, leading to increased time-on-task.

From what we observed, our interpretation is that the informant had a sociocultural approach to the activities. The students were working with each other, in pairs but being allowed to interact with other pairs as well. Even in the last activity, when they were supposed to write on their personal laptop, the informant encouraged the students to sit together and discuss the topic (Australia) while writing the text. All the activities required some level of cooperation between the students. When students cooperate and interact with their learning partners and their peers, it lets the students practice social skills and facilitate for positive interactions. Working in smaller groups could also benefit students. A central concept of sociocultural theory is the zone of proximal development. This refers to what students would be able to achieve on their own, and what they might be able to achieve with assistance from other

people. Because students were working together on all of the tasks we observed, we argue that they worked with more capable peers, expanding their zone of proximal development. It is worth mentioning that according to our informant, the tasks could probably be achieved by some of the traditionally “stronger students” on their own. Moreover, he argued that by having the students mixed in groups, the “stronger” students could assist the “less academically strong” students in achieving learning. In this case, the “stronger” students got the chance to practice social skills by guiding the “academically weaker” students to reach the goals within their zone of proximal development. At the same time, the “stronger” students got to practice social skills, which is something our informant expressed a need for. This shows that PAL can facilitate for learning, not only in purely academic contexts but also in the development of social skills.

From our understanding, a balance between the letters in PAL could provide increased opportunities for a wide range of learning. PAL could cover skills related not only to academic content, but also social skills and human development. Related to this topic, our first informant explained that the L in PAL was more significant than just competence aims and academic content. He stated that learning could be many things, that it could be the development of social skills, the creation of the complete human being, and that it is equally important to educate the students to be humans as it is to be academics. Further, PAL could help students with memory retention by creating mental schemas/systems by relating academic content to specific activities. Moreover, theory shows that PAL could help students with concentration and time on task, leading to more opportunities for learning and development. Lastly, PAL is a method that facilitates for cooperative learning between students. This enables students to work with slightly more complex tasks, resulting in more time spent pushing the limit of their zone of proximal development.

5.4 PAL and basic skills

PAL as a method can provide students with increased opportunities for oral communication, resulting in better oral skills development. Through observation, we saw several examples of how oral skills could be practiced through the use of the PAL methodology. Our informant had planned three activities, of which two of the activities demanded oral communication in English between the students. When discussing oral skills, it is essential to mention that the skill includes both talking and listening. Moreover, this finding is also based on comments

made by our informants during the interviews, where interestingly, the topic of oral skills and PAL was brought up by them without us explicitly asking about it. Lastly, we will discuss how the other three basic skills can be practiced by using PAL, based on observations and in the light of relevant theory.

During the observation, we noticed that the activities he chose led to what we would describe as a great deal of oral communication between the students. Although, the communication consisted mainly of interactions between the learning partner (*læringspartner*), students also communicated with other pairs and the teacher to correctly solve the task. For example, when students worked in pairs in the amphitheater, they moved around freely and had to interact with each other to ensure they agreed if the vocabulary fit the sentence. According to our male informant, PAL has improved his students' oral and cooperative skills. Furthermore, he has noticed that students, especially the ones he considers academically strong, struggle to communicate orally with others. He goes on to say that these students do not have any issues with reading out loud or reproducing language but struggle to produce and communicate new and spontaneous language. With this in mind, it can be seen that this class needs practice when it comes to producing language in natural settings, which PAL could facilitate for.

Arguments can be made for and against the statement that PAL improves oral skills. For example, it can be challenging to ensure that students discuss the task at hand or even speak English if they are not supervised. For the task we observed in the amphitheater, the students were widely spread out across different physical levels and working primarily with their learning partner. The teacher was primarily stationary, so the students had to return to him to crosscheck if they had found the proper sentence for the word displayed on the smartboard. In theory, students could therefore engage in non-subject-related matters more easily than in a traditional classroom setting. However, from what we observed, the teacher trusted the students and the PAL methodology to do the task at hand, and it worked very well even though we heard some code switching between Norwegian and English. This is because the students are familiar with the method and know what is expected from them. Munden (2021, p. 288) accentuates how students should speak more with each other and less with the teacher in order to promote oral skills. We argue that the PAL methodology facilitates oral communication between students to a higher degree than traditional classroom education because, from what we observed, the students talked less to the teacher and more with each other.

Munden (2021, p. 43) also mentions the importance of creating a supportive atmosphere where students will not be laughed at. When students work together in smaller groups, the threshold for engaging in English conversation lowers. This could be because the number of recipients of the conversations is much lower compared to a traditional classroom setting where students express themselves in front of the whole class. Making errors is therefore less noticeable and less scary, allowing the students to explore the language more comfortably. As previously mentioned, he has some students that experience school refusal that have a higher attendance rate when they have PAL. These students may want to attend these English lessons, because of the supportive learning environment and the smaller groups that PAL as a method in this case provides.

The increased rate of attendance can also be viewed in the light of Krashen's affective filter theory (Krashen, 1982). The affective filter refers to how effectively someone learns a second language and that it is impacted by motivation, self-confidence, and anxiety. The "lower" the filter gets, the better for second language acquisition. Based on our observations, we experienced that the teacher facilitated for inclusion and a supportive learning environment. Krashen (1982, p. 32) states that "the effective language teacher is someone who can provide input and help make it comprehensible in a low-anxiety situation." From our understanding, Informant 1 utilizes PAL to create communicative activities based on inclusion and in low-anxiety situations which might positively influence his students' attendance. This situation we have observed might not be generalizable, and we cannot say for sure that every student experienced this as a "low-anxiety situation." However, we argue that the factors that determine what is considered "low-anxiety situations" are individual, and that the general class environment plays a significant role in this way of learning together.

We also believe that it is worth thinking about how the English language is used outside the classroom, in the real world. For example, it is rare to get a question and give a single response, which is normal in "chalk and talk" lessons. By engaging in conversations, students could see the subject's relevancy outside of the classroom, which could lead to increased academic and personal motivation.

Another potential benefit of combining PAL with communicative activities is the possibility of differentiating. Communicative activities are always differentiated because students communicate with the languages they know and where the goal is communicative success and fluency, not accuracy (Munden, 2021, p. 296). Munden (2021, p. 297) and Skulstad (2020, p.

43) agree on the fact that communication is one of the primary objectives of the English subject. Based on this statement, students must be given the opportunity to practice communication as often as possible, especially with their peers. Even though we could not observe the female informant due to unforeseen reasons, she provided us with great insight in the interview. She described in detail that her impression was that the students learned more when they had PAL. What is more, she emphasized that they have increased courage to express themselves orally and even more so if there is some competition involved in the activity. We assume that she refers to activities such as relays because they involve an element of competition. From our experience, students enjoy activities that are competitive. Activities such as academic relays fit well within the PAL methodology. Therefore, this could motivate students even more to be orally active and engage in communication exercises.

Another argument for PAL and the development of oral skills is that students learn without being aware of it. Taking relays as an example, the relay will most likely be the primary focus of the students and make them unaware of the communicative content of the task. This leads to what a teacher in the study by Martin and Murtagh (2017, p. 225) describes as “learning without even knowing.” For the students, physical activity (PA) could seem like the primary goal of the lesson, while for the teacher, learning (L) is the primary focus. This does not mean that students neglect the learning objectives, however, it is reasonable to assume that they focus more on the competitive aspect that PAL can provide and subsequently learn without knowing. It is, therefore, important to return to the L by summarizing the learning objectives that the activities were meant to fulfill. Our first informant consequently summarized all three activities that we observed to ensure that the learning objectives were not neglected or lost in the physical activity, maintaining a balance between P, A, and L.

This section has mainly focused on oral skills, as that is the basic skill that was practiced the most during the lesson we observed. The oral skill is the skillset that is most natural to practice in a PAL lesson because of the communicative aspects. However, the PAL lesson we observed included all the four basic skills in the English subject. Therefore, we think it is relevant to discuss how these basic skills are facilitated in a PAL setting. In addition to oral skills, the other skills are reading, writing, and digital skills. We will take a closer look at each basic skill regarding what we observed.

Reading was included in all three activities. The first activity in the amphitheater had students locate sentences in order to find the correct sentence to the vocabulary given. Within reading,

there are several strategies that students need to master to be able to read effectively. It is also important to know when to use which strategy. For the lesson we observed, students used several different reading strategies to solve the tasks. Munden (2021, p. 352) mentions strategies such as re-reading something, reading out loud, scanning, and skimming, to name a few. We argue that several of these reading strategies were applied. Firstly, when they were working in pairs, we heard students read the sentences out loud to their learning partners. Furthermore, it is reasonable to assume that students with high reading proficiency only needed to scan the sentence to correctly fit the vocabulary.

The second activity involved choosing the correct descriptive text placed on a table away from their desk and matching it with the animal portrayed on the smartboard. We observed that this task involved little to no reading out loud when choosing the correct text, as it looked like students were skimming to get a basic understanding or scanning to search for specific information. However, the informant asked the students to read one sentence aloud each in a pattern (*slangelesing*) to make sure everyone had gotten in correctly and possibly to repeat the content. Lastly, when students were to write five facts about Australia, they needed to search for information and choose the appropriate reading strategy in order to gather data for the five facts task. Reading skills were, therefore, also, an essential part of the PAL lesson, in addition to oral skills.

Writing was included in the first and third activities. In the first activity, the students were to write sentences in their book, using pen and paper, with their learning partner. This meant that the students had to switch between who was writing after each vocabulary had been matched to the correct sentence. The third activity had the students write on their personal computers individually. The first activity was mostly related to repeating vocabulary and writing by hand, in order to possibly retain the vocabulary better while at the same time practicing handwriting. The third activity had the students write five sentences on the computer, which let them practice their writing skills and digital skills at the same time. According to Munden (2021, p. 61), digital skills within the English subject serves three different purposes. These are “to communicate with other speakers of English”, “search for and find relevant information”, and lastly, “to promote language learning through the use of digital media.” The purpose of this task was not to communicate with other speakers but to write facts about Australia and to practice using the computer to search for information. We argue that this task covers two of the three primary purposes of digital skills in the English subject. It is possible

to include digital skills in an activity with PA, but it will require additional planning and suitable electronic equipment.

It is worth noting that this last task did not include any aspects of PA. According to our informant, he stated that when the activity levels increase to the point where the L is not in focus anymore, the students' learning outcomes are reduced. This could be one of the reasons as to why he utilized this type of digital writing activity to end his lesson, to make sure that the class returns to the L. It could also ensure that students who do not prefer PAL are provided with elements of traditional education. As mentioned in Resaland et al. (2018), students that traditionally perform well in ordinary classroom education might be negatively affected when PAL is being utilized. At the same time, Resaland et al. (2018, p. 175) state that the lowest academic-performing students, both boys, and girls, respond positively to physically active learning. It is, therefore, reasonable to argue that this informant has planned his lesson in a way that includes the entire spectrum of students, their level, and their preferred method of acquiring knowledge.

To summarize this point of discussion, PAL as a method can provide students with opportunities to explore all basic skills within the English subject. PAL could in theory, improve oral skills by having students engage in more authentic conversations than regular “chalk and talk” can provide. Students speak more with each other than with the teacher when they have PAL. For this to be effective, there needs to be a supportive atmosphere that allows students to explore the language, lowering their affective filters. Practicing speaking English in authentic situations might provide students with relevant conversational knowledge they can use outside the classroom, which could increase their motivation to learn the language. When utilizing PAL, students often learn without knowing because they focus mainly on the activity, especially when competitions are involved. Therefore, PAL seems like a viable method to meet curricular goals and to give students an opportunity to master the four basic skills in English.

5.5 Possible answers to our research question

We have now discussed our findings in light of relevant theory and our findings. In this section, we aim to give possible answers to our research questions and sub-questions. First,

we intend to answer our sub-questions to get a better foundation for answering our main research question, “How do teachers at PAL schools implement physically active learning in the English subject, and what can English teachers, in general, learn from the PAL methodology?”

5.5.1 Basic skills

To increase our knowledge of how PAL preserves and promotes the basic skills, we included the following sub-question: “How can physically active learning foster students' reading, writing, oral, and digital skills in the English subject?” By looking at how the basic skills in the English subject can be promoted through the use of physically active learning, we shed light on how and why PAL is a suitable method to use in English.

As we have discussed, oral skills (listening and speaking) are the basic skill that are facilitated for the most through the use of the PAL methodology. This is based on the observations that we made, as most of the activities promoted oral skills as the “main” basic skill. Our male informant claimed that PAL had contributed to increased oral skills for his students, as the method has enabled them to work more in smaller groups resulting in more communication between students. The female informant stated that she had a similar perception on PAL and oral skills as the male informant. She mentions that her students had more courage to express themselves orally when engaging in PAL-related activities. With these statements in mind, we understand that PAL as a method can lower students’ affective filter because of lower anxiety situations where students interact more with each other in smaller groups, compared to traditional “chalk and talk.”

Even though the lesson we observed consisted mostly of communicative activities (oral skills), we noticed that the other basic skills were included. As previously presented, students had to read to be able to answer the tasks and write their answers both by hand and digitally. We experienced how digital skills can be promoted in a PAL lesson even though it is not directly integrated in an activity but rather as a summarizing task. We are aware that the further development of all basic skills will likely not be realistic in every lesson. However, based on the single lesson we observed, if it is possible to practice all four basic skills in a PAL lesson, then the method can meet all four basic skills. Thus, making PAL a viable method to use in the English subject as it can foster reading, writing, talking and digital skills.

5.5.2 Main facilitators and barriers

The second sub-question seeks to gain an understanding of the factors that impede or promote the implementation of PAL according to our informants and theoretical perspectives. It reads as follows, “What are the main facilitators and barriers for implementing PAL in the English subject?” The terms barrier and facilitator are repeatedly mentioned throughout PAL research. In section 2.5.4, we have presented several of these facilitators and barriers for PAL implementation. In this section, we intend to showcase what we interpret that our informants and researchers on the field consider to be the main facilitators and barriers to successful PAL implementation.

To begin with, one of the most central barriers that our informants were not negatively affected by is the involvement of senior management. Informants 1 and 2 work at schools where PAL is considered one of the core values. Senior management at these schools facilitate for the implementation of PAL by providing teachers with equipment through PAL rooms. Another way they support teachers is by allocating precious developmental time to develop their PAL competence further and to share practice among the staff. For schools that have PAL in focus, senior management will facilitate accordingly. However, there can be individuals that practice PAL at schools where the schools focus is elsewhere where they do not value the method. In this case, senior management might be a barrier for the implementation of physically active learning. However, personal interest and motivation toward PAL could potentially negate the need for the support of senior management at schools where they have other core values. As one of our informants stated, access to free online resources could enable teachers to utilize PAL as a method without specialized competence or support from senior management.

The last facilitator worth mentioning is teacher training and confidence. It is evident that teacher training is a facilitator for PAL implementation, but the lack of teacher training is not necessarily a barrier. If one has yet to undergone teacher training, the biggest barrier to PAL implementation is fearing how PAL takes place and looks in practice. As our male informant mentions, he suggests that teachers without training most likely overthink the concept of PAL, because of said reasons. To summarize this sub-research question, the main facilitators and barriers to PAL implementation are senior management, time and resources, personal interest, and motivation as well as teacher training and confidence. Lastly, it is worth mentioning that most of the barriers can be facilitators.

5.6 Answering our main research question

The main research question for this study is “How do teachers at PAL schools implement physically active learning in the English subject, and what can English teachers, in general, learn from the PAL methodology?” We aim to provide a simple and straightforward answer to the research question by answering each part separately. First, we will answer how teachers at PAL schools implement physically active learning before answering what English teachers, in general, can learn from the PAL methodology.

Our informants provided us with great insight into how they use PAL in the English subject, which helped us answer the first part of the research question: “How do teachers at PAL schools implement physically active learning in the English subject.” Unfortunately, we were only able to conduct one observation. The observation of the first informant gave us direct access to the field, which enabled us to answer this question more thoroughly. The informant implemented physically active learning by using learning activities, which seemingly did not require an additional workload. We observed how he made use of several different delivery environments for PAL by using the whole school as a learning space. We saw how the basic skills were facilitated for through the use of physically active learning. Several competence aims were met by carrying out the glossary test using PAL, as students practiced oral communication, writing competence, and retaining the glossary.

According to our informants, personal motivation and interest are highly important factors for successful PAL implementation. Further, student enjoyment of PAL was another key factor for their motivation. Another similarity they share was including PAL on the timetable to commit to the method, secure implementation and hold themselves accountable. Senior management functions as a facilitator for these informants, as they value PAL, therefore supporting implementation by providing time for planning, providing resources, and further development of PAL as an area of focus. Lastly, based on observation and interviews, PAL as a method is implemented by our informants to not only meet curricular goals but to facilitate movement, engagement, and promote co-operation and communication. This results in PAL contributing to the development of the complete human.

For our research to be relevant to all teachers of English, we wanted to investigate, “What can English teachers, in general learn, from the PAL methodology?” The inclusion of the second part of the research question is based on the fact that we want our results to be helpful for all English teachers, especially those who have not participated in a further education program to

increase their PAL competence. This research can be valuable for all English teachers, from those who already utilize PAL on one hand to those who want to start developing their PAL competence on the other.

As one of our informants stated, PAL is something that most teachers will be able to incorporate into their teaching. As our male informant stated, people who do not have PAL competence tend to overthink the concept and instead choose not to incorporate it, in fear of how it looks and takes place. Furthermore, he says that “it (PAL) does not necessarily need to consist of much equipment on a grand scale. Leaving the desk and solving tasks in other parts of the classroom can be enough.” What we observed was equipment-wise not very advanced as it contained only printouts, a smartboard, and a computer. This is standard school equipment, showcasing that this lesson probably could be done in any school. The PAL aspect of the lesson did not require much from the teacher. According to him, the most important thing is that the students notice a change in activity level, which triggers the mind. Taking the statements into account, it is clear that teachers can easily implement PAL without training. Many teachers probably already have elements of PAL in their teaching without being aware of the fact that they are practicing the method.

Although it might not be transferrable or generalizable, PAL has positively impacted our male informant’s students’ attendance. This is something that is worth noting and taking into consideration for other teachers. According to previous research and our informants, students generally enjoy PAL as a learning method. Another benefit of PAL is that the class environment is continuously developed due to the cooperative nature of PAL activities while at the same time meeting the curricular goals of subjects. Our male informant states that “the relations between the students improve drastically, and that the class environment has improved.” All of the reasons mentioned above prove that PAL has beneficial factors that teachers of the English subject should be aware of. In the long term, PAL could help promote a healthy and supportive learning environment. However, this is not easily measurable, but something worth researching further in the future. In summary, what other teachers in general can get out of this study is that physically active learning is not the same as PE. The main purpose of PAL is to create movement and it does not have to be physically demanding and exhausting. If teachers manage to include some physically active learning in their lessons, it could help meet the daily recommendation from the Norwegian Directorate of Health (2019a) of 60 minutes of moderate to vigorous activity.

5.7 Contributions to the field and directions for further research

Our research will contribute to the field of physically active learning as a teaching method, specifically how teachers with PAL competence use the method in the English subject. We have noticed that there needs to be more research on PAL conducted here in Norway, especially in relation to the English subject. As we have experienced, most of the previous research on PAL has been conducted in other countries, where the majority of these are English-speaking countries. This indicates that the existing research on PAL and English has been carried out in contexts where English is the L1. There is, therefore, a research gap on the connection between PAL and second language acquisition. Our research has been carried out in a Norwegian classroom, but the results and data presented are not exclusive to the Norwegian context and will most likely be of value for teachers in other countries as well.

This research has contributed to fill the research gap on physically active learning and English L2 teaching and learning. One possible direction for future research could be to further investigate the relationship between second language acquisition and physically active learning. In addition, there are several pedagogical areas of interest that need to be further researched, such as the connection between school refusal and PAL, which can be valuable to gain a deeper understanding of.

6 Conclusion

This research project has taken a closer look at how teachers with PAL competence practice PAL in the English subject. Through observation and interviews with informants, we have gained insight into how PAL can be practiced in combination with English. We saw how seemingly effortlessly our informant used PAL and heard how motivated our interview participants were. Our research has shown that PAL as a teaching method has a place in the English subject, as it can foster the basic skills. However, we have also discovered the general benefits of PAL as a transferrable method that is beneficial to all subjects. PAL contributes to the development of the class environment and can lower students' affective filter, resulting in better conditions for language learning. In addition, PAL has benefits beyond academic outcomes, such as the development of social skills, cooperative abilities, health benefits and the development of the complete human being.

References

- Christoffersen, L., & Johannessen, A. (2012). *Forskningsmetode for lærerutdanningene* (1 ed.).
- Cohen, L., Manion, L., & Morrison, K. (2018). *Research Methods in Education*. Routledge.
- Daly-Smith, A., Quarmby, T., Archbold, V. S. J., Routen, A. C., Morris, J. L., Gammon, C. B., John B., Resaland, G. K., Llewellyn, B., Allman, R., & Dorling, H. (2020). Implementing physically active learning: Future directions for research, policy, and practice. *Journal of Sport and Health Science*, 9(1), 41-49. <https://doi.org/10.1016/j.jshs.2019.05.007>.
- Dyrstad, S. M., Kvalø, S. E., Alstveit, M., & Skage, I. (2018). Physically active academic lessons: acceptance, barriers and facilitators for implementation. *BMC Public Health*, 18. <https://doi.org/10.1186/s12889-018-5205-3>
- Gleiss, M. S., & Sæther, E. (2021). *Forskningsmetode for lærerstudenter* (Vol. 1). Cappelen Damm AS.
- Harmer, J. (2007). *The Practice of English Language Teaching* (4 ed.). Pearson Longman ELT.
- Helsedirektoratet. (2019a). Bekymret over lite fysisk aktivitet blant barn og unge. <https://www.helsedirektoratet.no/nyheter/bekymret-over-lite-fysisk-aktivitet-blant-barn-og-unge>
- Helsedirektoratet. (2019b). Fysisk aktivitet i forebygging og behandling. <https://www.helsedirektoratet.no/faglige-rad/fysisk-aktivitet-i-forebygging-og-behandling>
- Kleven, T. A., & Hjordemaal, F. (2018). *Innføring i pedagogisk forskningsmetode - En hjelp til kritisk tolking og vurdering* (3 ed.). Fagbokforlaget.
- Krashen, S. D. (1982). *Principles and practice in second language acquisition* (1 ed.). Pergamon Press.
- Martin, R., & Murtagh, E. M. (2017). Teachers' and students' perspectives of participating in the 'Active Classrooms' movement integration programme. *Teaching and Teacher Education*, 63, 218-230. <https://doi.org/10.1016/j.tate.2017.01.002>.
- McMullen, J., M. Martin, R., Jones, J., & Murtagh, E. M. (2016). Moving to learn Ireland – Classroom teachers' experiences of movement integration. *Teaching and Teacher Education*, 60, 321-330. <https://doi.org/10.1016/j.tate.2016.08.019>.
- McMullen, J., MacPhail, A., & Dillon, M. (2019). "I want to do it all day!"—Students' experiences of classroom movement integration. *International Journal of Educational Research*, 94, 52-65. <https://doi.org/10.1016/j.ijer.2018.11.014>.
- Michael, R. D., Webster, C. A., Egan, C. A., Nilges, L., Brian, A., Johnson, R., & Carson, R. L. (2019). Facilitators and Barriers to Movement Integration in Elementary Classrooms: A Systematic Review. *Research quarterly for exercise and sport*, 90, 151-162. <https://doi.org/10.1080/02701367.2019.1571675>
- Munden, J. (2021). *Engelsk på mellomtrinnet* (2 ed.). Gyldendal Akademisk.
- Nystad, W. (2014). Fysisk aktivitet i Norge. <https://www.fhi.no/nettpub/hin/levevaner/fysisk-aktivitet/>
- Postholm, M. B., & Jacobsen, D. I. (2018). *Forskningsmetode for masterstudenter i lærerutdanningen* Cappelen Damm akademisk.
- Resaland, G. K., Moe, V. F., Bartholomew, J. B., Andersen, L. B., McKay, H. A., Anderssen, S. A., & Aadland, E. (2018). Gender-specific effects of physical activity on children's

- academic performance: The Active Smarter Kids cluster randomized controlled trial. *Preventive Medicine*, 106, 171-176. <https://doi.org/10.1016/j.ypmed.2017.10.034>.
- Resaland, G. K., Aadland, E., Moe, V. F., Aadland, K. N., Skrede, T., Stavnsbo, M., Suominen, L., Steene-Johannessen, J., Glosvik, Ø., Andersen, J. R., Kvalheim, O. M., Engelsrud, G., Andersen, L. B., Holme, I. M., Ommundsen, Y., Kriemler, S., van Mechelen, W., McKay, H. A., Ekelund, U., & Anderssen, S. A. (2016). Effects of physical activity on schoolchildren's academic performance: The Active Smarter Kids (ASK) cluster-randomized controlled trial. *Prev Med*, 91, 322-328. <https://doi.org/10.1016/j.ypmed.2016.09.005>
- Routen, A. C., Johnston, J. P., Glazebrook, C., & Sherar, L. B. (2018). Teacher perceptions on the delivery and implementation of movement integration strategies: The CLASS PAL (Physically Active Learning) Programme. *International Journal of Educational Research*, 88. <https://doi.org/10.1016/j.ijer.2018.01.003>
- Skage, I., & Dyrstad, S. M. (2019). 'It's not because we don't believe in it...': Headteachers' perceptions of implementing physically active lessons in school. *BMC Public Health*, 19, 9. <https://doi.org/10.1186/s12889-019-8021-5>
- Skulstad, A. U. (2020). Developing oral skills. In *Teaching English in the 21st century* (2 ed.). Fagbokforlaget.
- Utdanningsdirektoratet. (2017). Core curriculum – values and principles for primary and secondary education. <https://www.udir.no/lk20/overordnet-del/prinsipper-for-laring-utvikling-og-danning/tverrfaglige-temaer/folkehelse-og-livsmestring/?lang=eng>
- Utdanningsdirektoratet. (2020a). Curriculum in English - Basic Skills (ENG01-04). <https://www.udir.no/lk20/eng01-04/om-faget/grunnleggende-ferdigheter?lang=eng>
- Utdanningsdirektoratet. (2020b). Curriculum in Physical Education (KRO01-05). <https://www.udir.no/lk20/kro01-05/om-faget/fagets-relevans-og-verdier?lang=eng>
- Utdanningsdirektoratet. (2022). Rett til fysisk aktivitet Udir-11-2009. <https://www.udir.no/regelverkstolkninger/opplaring/Innhold-i-oppleringen/Udir-11-2009-Rett-til-fysisk-aktivitet/>
- Vingdal, I. M. (2014). *Fysisk Aktiv Læring* (1 ed.). Gyldendal Akademisk.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Webster, C. A., Zarrett, N., Cook, B. S., Egan, C., Nesbitt, D., & Weaver, R. G. (2017). Movement integration in elementary classrooms: Teacher perceptions and implications for program planning. *Evaluation and Program Planning*, 61, 134-143. <https://doi.org/10.1016/j.evalprogplan.2016.12.011>

Appendix 1 – Informed consent

Vil du delta i forskningsprosjektet "Fysisk aktivitet i engelskundervisningen"?

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er å undersøke hvordan FAL (fysisk aktiv læring) blir brukt i engelskundervisningen. I dette skrivet gir vi deg informasjon om målene for prosjektet og hva deltakelse vil innebære for deg.

Formål

Formålet med masterprosjektet vil være å undersøke hvordan FAL benyttes i engelskfaget av lærere. Prosjektet vil se på undervisningssituasjoner til 2-4 lærere som jobber ved FAL skoler. Problemstillingen vi skal undersøke er: «Hvordan bruker lærere ved FAL (fysisk aktiv læring) skoler fysisk aktivitet i engelsktimene?».

Vi har også supplert med to forskningsspørsmål for å hjelpe oss å besvare denne problemstillingen. De er som følger:

- Hvilke aktiviteter tar læreren i bruk?
- Hvordan begrunner læreren valg av aktiviteter?

Disse opplysningene skal kun brukes til dette forskningsprosjektet.

Hvem er ansvarlig for forskningsprosjektet?

Institutt for lærerutdanning og pedagogikk (ILP) ved UiT Norges arktiske universitet er ansvarlig for prosjektet.

Hvorfor får du spørsmål om å delta?

Du får denne henvendelsen om å delta fordi vi har fått opplysning fra rektor ved din skole om at du kan være en aktuell kandidat for vårt prosjekt. Vi vil sende ut denne henvendelsen til et lite utvalg lærere. Kriterier for å være med på vårt masterprosjekt er at man jobber som engelsklærer og benytter FAL i engelsktimene sine.

Hva innebærer det for deg å delta?

Hvis du velger å delta i prosjektet, innebærer dette at du samtykker til at 2-4 undervisningsøkter observeres, og at det gjennomføres et semistrukturert intervju i etterkant av observasjon. Intervjuet vil det bli gjort lydopptak av, og spørsmålene vil omhandle FAL og engelsk, samt eventuelle momenter fra observasjon som virker spennende og relevant.

Det er frivillig å delta

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykket tilbake uten å oppgi noen grunn. Alle dine personopplysninger vil da bli slettet. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger

Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket.

Opplysningene vi innhenter vil kun være tilgjengelig for masterstudentene Lars Hågensen og Lars Morten Stjern, samt veileder Ingrid K. Jakobsen. Informanter vil bli gitt fiktive navn og skoler blir ikke spesifisert. Vi vil også oppbevare data på UiT sin skylagringstjeneste, med passordbeskyttet mappe. Lydopptak fra intervju samt transkripsjon skal lagres separat. Dataen vil bli behandlet på en slik måte at informanter forblir anonym gjennom hele prosessen, og at kun de mest nødvendige opplysningene blir publisert. Deltakere skal ikke kunne bli gjenkjent av andre.

Hva skjer med personopplysningene dine når forskningsprosjektet avsluttes?

Prosjektet vil etter planen avsluttes når oppgaven er levert 15.05.2023. Etter prosjektslutt vil datamaterialet med dine personopplysninger anonymiseres. Opplysningene vil bli anonymisert slik at hver deltaker blir tildelt et tall (Lærer 1, Lærer 2...), og ingen navn, titler eller alder vil bli brukt. I intervjuet vil vi ikke bruke navn, og eventuelle navn som dukker opp under intervjuet vil bli kodet om i transkripsjonen slik at det forblir anonymt. Når prosjektet er avsluttet, vil dataen bli terminert og fjernet.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi behandler opplysninger om deg basert på ditt samtykke.

På oppdrag fra *institutt for lærerutdanning og pedagogikk* har 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:

- *Instituttet for lærerutdanning og pedagogikk UiT*
- *Masterstudenter: Lars Hågensen, lha252@uit.no og Lars Morten Stjern, lst116@uit.no*
- *Veileder for prosjektet: Ingrid K. Jakobsen, ingrid.jakobsen@uit.no*
- *Vårt personvernombud: Joakim Bakkevold, personvernombud@uit.no, 776 46 322*

Hvis du har spørsmål knyttet til Personverntjenester sin vurdering av prosjektet, kan du ta kontakt med:

- Personverntjenester på epost (personverntjenester@sikt.no) eller på telefon: 53 21 15 00.

Med vennlig hilsen

Ingrid K. Jakobsen
(Forsker/veileder)

Lars Hågensen og Lars Morten Stjern

Samtykkeerklæring

Jeg har mottatt og forstått informasjon om prosjektet [*Fysisk aktivitet i engelsk*], og har fått anledning til å stille spørsmål. Jeg samtykker til:

- å bli observert under undervisningsøkter
- å delta i *et intervju*

Jeg samtykker til at mine opplysninger behandles frem til prosjektet er avsluttet

(Signert av prosjektdeltaker, dato)

Appendix 2 – NSD form

[Meldeskjema](#) / [Fysisk aktivitet i engelskundervisningen](#) / Vurdering

Vurdering av behandling av personopplysninger

Referansenummer

351183

Vurderingstype

Standard

Dato

22.11.2022

Prosjektittel

Fysisk aktivitet i engelskundervisningen

Behandlingsansvarlig institusjon

UIT Norges Arktiske Universitet / Fakultet for humaniora, samfunnsvitenskap og lærerutdanning / Institutt for lærerutdanning og pedagogikk

Prosjektansvarlig

Ingrid Karoline Jakobsen

Student

Lars Hågensen

Prosjektperiode

24.10.2022 - 15.05.2023

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 15.05.2023.

[Meldeskjema](#) 

Kommentar**OM VURDERINGEN**

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

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

VIKTIG INFORMASJON TIL DEG

Du må lagre, sende og sikre dataene i tråd med retningslinjene til din institusjon. Dette betyr at du må bruke leverandører for spørreskjema, skylagring, videosamtale o.l. som institusjonen din har avtale med. Vi gir generelle råd rundt dette, men det er institusjonens egne retningslinjer for informasjonssikkerhet som gjelder.

TYPE OPPLYSNINGER OG VARIGHET

Prosjektet vil behandle alminnelige personopplysninger frem til 15.05.2023.

LOVLIG GRUNNLAG

Prosjektet vil innhente samtykke fra de registrerte til behandlingen av personopplysninger. Vår vurdering er at prosjektet legger opp til et samtykke i samsvar med kravene i art. 4 nr. 11 og 7, ved at det er en frivillig, spesifikk, informert og utvetydig bekreftelse, som kan dokumenteres, og som den registrerte kan trekke tilbake.

For alminnelige personopplysninger vil lovlig grunnlag for behandlingen være den registrertes samtykke, jf. personvernforordningen art. 6 nr. 1 a.

PERSONVERNPRINSIPPER

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

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

DE REGISTRERTES RETTIGHETER

Vi vurderer at informasjonen om behandlingen som de registrerte vil motta oppfyller lovens krav til form og innhold, jf. art. 12.1 og art. 13.

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

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

FØLG DIN INSTITUSJONS RETNINGSLINJER

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

Ved bruk av databehandler (spørreskjemaleverandør, skylagring eller videosamtale) må behandlingen oppfylle kravene til bruk av databehandler, jf. art 28 og 29.

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

MELD VESENTLIGE ENDRINGER

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

OPPFØLGING AV PROSJEKTET

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

Kontaktperson hos oss: Silje Fjelberg Opsvik
Lykke til med prosjektet!

Appendix 3 – Interview guide

Forslag til intervjuguide

Litt innledende spørsmål for å få litt info om bakgrunn til informanten

- Hvilke fag har du?
- Hvilken lærerutdanning har du tatt?
- Hvilke trinn har du jobbet på/jobber på nå?
- Hvor lenge har du jobbet som lærer?
- Har du erfaring som kontaktlærer?

Dette blir informasjon som ikke gjør at man kan kjenne igjen læreren, men som kan være aktuell for oppgaven vår mtp erfaring

FAL i undervisningen

1. Innledningsvis, kan du fortelle litt om din interesse for FAL
2. Er det slik at rektor/skoleledelse har tatt initiativ til FAL? Hvis ja, på hvilken måte?
 - Jobbet du på denne skolen da de ble kurset i FAL?
 - Hva er (eller var) din personlige motivasjon for å ta i bruk FAL i undervisningen?
 - Hva tror du elevene du underviser synes om fysisk aktivitet i engelsk-undervisningen?
3. Hva er din mening om bruk av FAL i Engelsk, og i andre fag?
4. Hva betyr FAL for deg?
5. Engelsk er jo et typisk sitte-ned fag. Hva tenker du om FAL som metode i Engelsk?
6. Hvordan integrerer du fysisk aktivitet i engelskundervisningen?
 - Har du et eksempel på en økt der du integrerte FA?
 - Hvordan syns du denne økta gikk?
 - Har du eksempel på aktiviteter du tok i bruk?
7. Er det deler av engelskfaget der du mener det kan være en fordel å bruke FAL som metode?
 - Er det temaer der det er fordelaktig å bruke FAL, eller der det er utfordrende?
 - Er FAL noe du bruker når du introduserer noe nytt for elevene?
 - Hvorfor/hvorfor ikke
 - tror du FAL kan bidra til begrepslæring og/eller dybdelæring? I så fall, hvordan
8. Hvordan ser en typisk engelsktime uten FAL ut?

- Med FAL?
- 9.** Samarbeider du med andre engelsklærere om å utvikle opplegg eller gjennomføre opplegg knyttet til FAL?
- Er det noen krav til innhold i øktene fra SEFAL sin side?
 - Har du mulighet til å bruke undervisningsopplegg som er utviklet av SEFAL?
 - Evt. Erfaring med dette?
- 10.** Er det enkelte ting som avgjør om du benytter deg av FAL i undervisningen?
- Hvilke hensyn må du ta høyde for når du planlegger undervisning med FAL?
 - (Spennende å se på)
- 11.** Hva må, i dine øyne, til for at et undervisningsopplegg som bruker FAL i engelsk som metode skal være vellykket?
- 12.** Hva tenker du skal til for at andre benytter seg av FAL i engelskundervisning?
- Tenker du at FAL kan brukes effektivt uten å ha vært gjennom kursing fra SEFAL? I så fall, hva må til?
 - Føler du at det krever mye av deg å benytte deg av FAL som metode?

Avslutningsvis

- Er det noe du vil legge til?

Appendix 4 – Observation form

| Observasjonsskjema | | |
|--|-------------|----------|
| 1. Fastsatte ting vi vil observere | | |
| | OBSERVASJON | TOLKNING |
| Rommets (gang, klasserom, gymsal, ute) størrelse, plasseringen av elever, utstyr Stemning i klassen, vær, osv | | |
| Antall elever/voksne i situasjonen | | |
| Hvilke typer aktiviteter blir brukt? Pauseinnslag, pedagogisk opplegg, aktivitetsboost? | | |

| | | |
|--|--|--|
| | | |
| Aktivitet 1 (Navn på aktivitet) hvem gjør hva, hvilken aktivitet etc, vurder å skriv klokkeslett Tykke beskrivelser | | |
| Aktivitet 2 | | |

