overSEAS 2023

This thesis was submitted by its author to the School of English and American Studies, Eötvös Loránd University, in partial fulfilment of the requirements for the degree of Master of Education. It was found to be among the best theses submitted in 2023, therefore it was decorated with the School's Outstanding Thesis Award. As such it is published in the form it was submitted in **overSEAS 2023** (http://seas.elte.hu/overseas/2023.html)

SZAKDOLGOZAT

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angol nyelv és kultúra tanára – történelem és állampolgári ismeretek tanára

2023

EÖTVÖS LORÁND TUDOMÁNYEGYETEM
Bölcsészettudományi Kar

SZAKDOLGOZAT

Középiskolás tanulók elképzeléseinek vizsgálata a mozgásintegrációról az angol nyelvtanításban

Investigating secondary school students' perceptions on movement integration in the EFL classroom

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2023

Eredetiségi nyilatkozat

Alulírott Bohanek Lilla Veronika (TB9JDP) ezennel kijelentem és aláírásommal megerősítem, hogy az ELTE angol nyelv és kultúra – történelem és állampolgári ismeretek tanári mesterszakján írt jelen diplomamunkám saját szellemi termékem, melyet korábban más szakon még nem nyújtottam be szakdolgozatként, és amelybe mások munkáját (könyv, tanulmány, kézirat, internetes forrás, személyes közlés stb.) idézőjel és pontos hivatkozások nélkül nem építettem be.

Budapest, 2023.04.30. Bohanek Lilla Veronika s.k.

a hallgató aláírása

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Abstract

This study examines the perspectives of secondary school students in Hungary regarding the incorporation of movement activities into English lessons. Several studies have emphasised the positive effects physical movement can have on academic performance; however, little is known about the impact it has on student engagement in secondary school settings. In this small-scale research, a group of English learners participated in a short-term movement intervention, at the end of which they filled out a questionnaire. To get a more in-depth understanding, a control group's opinions were also analysed and compared to those of the intervention group. The results reveal that intervention can change adolescents' views on classroom-based movement, resulting in positive attitudes towards it.

I. Introduction

According to Németh and Költő (2014), on average, European children and adolescents sit for six to eight hours every day. Students spend the majority of their week sitting in class, and simultaneously, sedentary screen-based media consumption (e.g., TV, video, computer) accounts for a significant portion of their leisure time. Sedentary behaviour is related to a variety of detrimental physiological, psychological, and cognitive issues, such as obesity, low bone density, cardiometabolic disorders, low self-esteem, and inferior school performance. In spite of these detrimental effects, less than one-fifth of Hungarian adolescents aged 11 to 18 engage in sufficient daily physical exercise (Németh & Költő, 2014).

As a matter of fact, schools have been recognised as the primary environment for inactive behaviour, with the sedentary nature of classroom lessons identified as a contributing factor to physical inactivity among students (Martin & Murtagh, 2017). As Bedard et al. (2019) suggest, the solution to this issue is movement integration, also known as active classrooms, a pedagogical approach in which academic lessons are purposefully blended with physical activities in the classroom. The goal of this approach is to satisfy the learning outcomes of the lesson without sacrificing the amount of time students spend actively participating in physical activities. Both neurobiological and neurocognitive factors may be at play here, with the potential for this sort of intervention to lead to successful educational outcomes (Bedard et al., 2019). In addition to academic benefits, movement could also provide adolescents with the necessary emotional involvement for motivation and a focus on the learning goal (Corbin, 2008). As Corbin challenges the idea, in this manner, movement activities could serve as a powerful cognitive method to support learning, enhance memory, as well as boosting student morale and motivation.

While this is the case, there is a lack of research on the effects of classroom-based movement in secondary school classrooms. The majority of intervention studies have focused on elementary school students; therefore, little is known about adolescents' perceptions about increasing physical activity in the classroom (Uibu et al., 2021). The reason for this is that it can be difficult for secondary schools to include extra physical exercise in the daily schedule of classes due to the increased emphasis on academic achievement and examinations (Schmidt et al., 2022), even though a number of studies

concluded that there are many reasons to increase physical exercise in the classroom given the wide range of biological and psychological changes that occur during adolescence (Fenesi et al., 2022). As the authors point out, more exposure to physical activity throughout the school day may help alleviate those emerging concerns, especially considering the importance of physical activity in lowering anxiety and boosting self-esteem. This way, adolescents would then have access to the numerous neurocognitive and emotional benefits that come along with engaging in regular physical activity (Fenesi et al., 2022).

Having taught children of preschool and primary school age for many years, movement integration has always felt like a natural part of the learning process to me. When I started teaching English in a secondary school, I realised that it was more difficult to engage teenagers than primary school students. I had the assumption that physically active lessons might bridge these difficulties, even though I was hesitant to include movement tasks in my lessons as I did not know what kind of reactions to expect from the students. Following my decision to learn more, I developed the following research questions to direct my investigation:

1. What are secondary school students' views on movement integration before participating in physically active English lessons?
2. What are secondary school students' views on movement integration after two months of physically active English lessons?
3. How does movement intervention change the way students view active tasks?

During the course of the study, I integrated movement-based activities into the academic content of ESL classes at a secondary school in Hungary. After more than two months, I gathered student feedback, and I also asked the opinion of students accustomed to conventional English instruction. I analysed the responses of these two groups in order to answer the research questions, and then compared and contrasted them. The research presented here is divided into five sections. After a short introduction, the theoretical background will offer a summary of the present-day understanding of the topic. Following, the research methodology will be presented, with the context of the study and the instruments, including the limitations. Then the results and discussion section will provide answers for the research questions. The study is concluded with the main findings and the pedagogical implications.

II. Literature review

2.1. Movement and learning connection

2.1.1. Mind and body connection

There is more to learning than meets the eye. As noted by Corbin (2008), over the course of several decades, the academic and scientific communities were under the impression that thinking and movement were as distinct from one another as they possibly could be. Independent thinkers in the scientific community proposed the existence of connections between thought and action, but these hypotheses did not find support in the general public. However, as Hannaford (2007) pointed out, learning does not only occur in the head: the brain is not the only part of the body involved in the processes of learning, cognition, creativity, and intellect; the body as a whole is responsible. A person's feelings, movements, emotions, and the integrative processes of the brain all have their roots in their bodies. Therefore, it is impossible for the human attributes that are typically associated with the mind to ever exist in isolation from the body, as these two are inseparably connected (Hannaford, 2007).

Despite the lack of support from the public, many educators have long held the intuitive belief that getting their students moving is crucial to their success in the classroom. Gesture, dance, and other forms of physical activity have long been recognised as having positive impacts on learning, but scholars in the field of education have only just begun to examine these claims in depth (Lindt & Miller, 2017). The overwhelming data supporting a beneficial correlation between physical exercise, brain functioning, and cognitive ability is one of the key reasons for this interest (Fenesi et al., 2022). Various academics and policymakers have looked to classrooms as possible ways to boost children's physical activity behaviour in light of the rising prevalence of sedentary behaviour among children. More specifically, a large body of research has examined whether encouraging students to move around more in the classroom might improve their performance and overall wellbeing (Fenesi et al., 2022).

This strategy is called movement integration, which is an interdisciplinary approach to instruction that offers effective teaching in two topic areas simultaneously, allowing students to fulfil academic and physical education curriculum objectives (Lindt & Miller,

2017). It is important to note that movement integration in the classroom is not designed to serve as a substitute for physical education in schools, as explained by Webster et al. (2015). Physical education lessons are regarded as a behavioural programme that primarily aims to influence the daily behaviours of children, while classroom-based movement is considered an instructional programme that primarily focuses on the development of students' knowledge and skills.

As described by Watson et al. (2017), there are three main categories of physical exercise that are commonly used in the classroom, and they all serve different purposes. Active breaks, in which students engage in brief periods of physical exercise during class recesses, are the first type. They are carried out in order to provide a break from academic education. Another category is curriculum-focused active breaks, which are short periods of physical exercise that incorporate subject matter from the curriculum. Furthermore, physically active lessons refer to the incorporation of physical exercise into the core curriculum in subject areas other than physical education (Watson et al. 2017). As Quarmby et al. (2019) emphasise, the latter, because physical activity is integrated into the lesson in a meaningful way, represents a fundamental paradigm change in contemporary educational practice. This method of instruction is a radical change from the standard lecture format by shifting focus to a more problem-based learning model in which instructors play the role of facilitators for students' active learning (Quarmby et al., 2019).

It comes as no surprise that movement integration in academic classrooms has received national attention in the United States as an alternative for schools to consider when working towards educational and health-related goals. This is the result of the fact that movement integration has the potential to improve both educational and health outcomes. It is highly recommended by a number of national organisations, and the National Physical Activity Plan identifies it as a crucial strategy in the education sector for increasing children's physical activity (Webster et al., 2015).

2.1.2. Anatomical evidence

The use of traditional, sedentary learning activities overlooks the findings of cognitive neuroscience, which link the relevance of bodily movement to cognitive performance and learning (Schmidt et al., 2022). The principle that movement improves learning is a major component of brain-based theory—the view that one learns best when one encounters

information in a way that accords with, rather than contradicts, the natural tendencies of the brain (Pennington, 2010). The concept of brain-based learning encourages physical activity in the classroom. Since movement has been demonstrated to engage the minds of learners of all types and stimulate both hemispheres of the brain, it may be the best whole-brain method there is (Corbin, 2008).

Our bodies in motion are fundamentally how we perceive the physical world and our surroundings, in which perception and cognition play important roles. In this way, movement is essential to existence (Almond & Myers, 2017). Infants are always on the move: to discover new things, to learn, even to learn how to learn, and to gain a better understanding of their surroundings. The ability to move about is something we all evolved with, and therefore it's important to go deeper into the concept of learning through physical activity (Costas, 2019).

Today, there is overwhelming evidence of the connection between the mind and the body, and most neuroscientists agree that this connection is quite close (Ratey, 2008). The author makes a compelling case, supported by numerous studies and scientific experiments, that exercise is the most important tool for improving students' brain function. As Ratey states, people believe that the stress-relieving effects of exercise are responsible for the uplifted moods they experience after a workout. As for the genuine reason, it is because exercise boosts cognitive performance. Rather than what it does for the body, this advantage of physical activity is much more significant.

The author emphasizes that physical activity causes biological changes that enable brain cells to connect. These connections must be created in order for the brain to be able to learn, and they demonstrate the brain's inherent capacity to adapt to challenges. The more neuroscientists learn about this process, the more evident it becomes that exercise offers unrivalled stimulation, creating an environment in which the brain is willing, ready, and capable of learning. Exercise has a direct effect on learning at the cellular level, enhancing the brain's capacity to store and absorb new knowledge (Ratey, 2008).

The brain's most complicated region, the cerebellum, located in the rear of the head, is the region of the brain most closely linked to motor control, and compared to other parts of the brain, it contains the most neurons (Jensen, 2005). According to what Jensen indicates in his analysis of the relevant literature, the cerebellum has around 40 million nerve fibers. The information travels from the brain to the cerebellum through these fibers, and the cerebellum then sends data back to the cortex. In fact, most of the cerebellum's neural circuits are "outbound," meaning they affect the rest of the brain (Middleton & Strick, 1994).

In this study, scientists found a path from the cerebellum to parts of the brain that help with memory, attention, and spatial perception. Remarkably, the same part of the brain that controls movement is also responsible for learning (Jensen, 2005). Another piece of compelling evidence for this is that computer imaging demonstrates that the cerebellum is the most active area of the brain during learning, whereas it is practically inactive during non-learning tasks such as watching television (Hannaford, 2007).

As summarized by Pennington (2010), instead of approaching foreign languages as abstract concepts to be acquired by listening to tapes, reading, or writing translations, Asher, the developer of Total Physical Response (TPR), has taught languages as physical experiences. Based on Asher's findings (1966), the experimental group that used the technique of the TPR showed much greater retention than each of the control groups, who were taught the conventional method. Children in the experimental group were exposed to the language and asked to carry out an instruction, and the findings revealed significant improvement in their ability to recall the words (Asher, 1966). According to the results of several MRI tests, direct experience stimulates brain cells more than does the reconstruction of experience that typically takes place in educational settings. When students physically responded to words, neuroscientific data showed that they activated primary visual perception rather than secondary visual vision, which is usually active in traditional language learning settings (Pennington, 2010).

To summarize the necessity of movement, Dhority and Jensen (1998) shed light on the necessity of mental and physical practice in the acquisition of knowledge of any topic, but notably languages (as cited in Marshall, 2017):

> Current brain research validates the use of Total Physical Response [TPR] in several ways. First, a significant pathway for memory retrieval is through the physical body. This is known as procedural memory. We often recall what something is or what we wanted to do by simply getting up and moving. Second, areas in the brain that activate movement (cerebellum, frontal lobes, basal ganglia, motor cortex, etc.) are also well connected to the pleasure centers in the brain. Motion activates emotion; hence, moving can engage positive feelings and better retrieval. And finally, the peptide molecules which store information are distributed throughout the body. This means that almost any movement or motion can activate feelings and memories (p. 27).

2.1.3 Effects of physically active lessons on academic performance

A number of advantages have been discovered in research examining the effect of classroom-based physical activities on students' academic success, as Erwin (2012) outlines in the literature review. Findings indicated that a classroom-based physical activity program increased students' attention and participation in class (Mahar et al., 2006). Besides this, physical activities carried out in the classroom have been shown to increase students' ability to concentrate (Norlander et al., 2005), as well as improve reading and mathematical skills (Frederickd et al., 2006). Sauro's recent research (2022) also implies that physically active lessons increase academic achievement whilst positively affecting student perceptions, since students spend more time on task when provided with purposeful movement tasks. Mahar's (2011) research found moderate to strong evidence that physical exercise throughout the school day enhances attention-to-task in primary school children. Similarly, de Greeff et al. (2018) found that intervention programmes that incorporate mentally challenging physical activities could be a more effective method to enhance cognitive performance than aerobic physical exercise.

To date, several studies have confirmed the effectiveness of classroom-based movement in second language research. Liu et al. (2017) found that it is more effective to learn a foreign language while engaging in physical exercise than it is to study the same language while remaining still. Krüger's study (2018) revealed that combining physical activities with second language learning activities improved young refugees' second language acquisition. Not only does physical activity have the potential to increase the number of vocabulary items that students acquire, but there is also emerging evidence that it has the potential to speed up the process by which individuals learn new vocabulary (Campos, 2018).

Consequently, as noted by Erwin (2012), academic studies have emphasized not just the health advantages of physical activity and exercise, but also their influence on learning. Looking at the data, it is clear that engagement in physical activities has been linked to improved cognitive performance in children and adolescents across a variety of performance indicators. This is the case for both younger children and adolescents (Erwin, 2012). The evidence presented in this section suggests that physical activity interventions in the classroom may be a useful, low-cost, and effective way to more successful academic outcomes, especially in terms of improving on-task behaviour and reducing off-task behaviour (Watson et al., 2017).

2.2 The current generation's learning preferences

In order to be able to analyse students' perceptions about classroom-based movement, it is equally important to look at research that addresses their learning preferences. Educational systems have to be in a state of continual evolution and development in order to satisfy the requirements our society (Martin & Murtagh, 2017). Just as teachers have gotten better at connecting with millennial students, another generation, Generation Z (children born after 1995), has become the most recent generation of school-age students (Schenarts, 2020). Researchers have found that the average attention span of Millennials was 10 minutes, but that number has dropped to 6 minutes for members of Generation Z, and it may be as low as 8 seconds while they are using an electronic device (Powell, 2018), therefore, irrespective of the task, teachers should choose methods that promote engagement and connection in a way that accommodates short attention spans (Eckleberry-Hunt et al., 2018). Because of the similarities and differences between millennials and Gen Z, teachers need to adjust their methods of instruction in order to create a classroom setting that is optimal for learning (Shorey et al., 2021). There are only a few studies that take into account the current generation's needs and learning preferences.

According to a study of Barnes & Noble College (2018), members of Generation Z are anything but passive students. In the course of the study, a total of 1,300 middle and high school students between the ages of 13 and 18 were questioned. The students who participated in the survey came from 49 different states, both urban and rural. The findings suggest Gen Z students prefer in-person interaction and teamwork, despite being highly independent and technologically savvy. Both older and younger teenagers, whether working together or separately, prefer to learn by doing. Over half of the students who took the survey indicated they learned best through hands-on experience, while just 38% claimed they learned best by observation. Students gave a wide range of suggestions to teachers about how to make class time more engaging. The use of more modern tools, an emphasis on practical experience, and individualized instruction came out on top. Generation Z learners are looking for engaging, interactive learning experiences. They want to be challenged, and they want to be able to make their own choices (Barnes & Noble, 2018).

Seemiller et al. (2019) conducted research to better comprehend the perspectives, learning methods, and needs of Generation Z college students in the United States and Brazil. Based on the findings, students from both countries ranked kinaesthetic learning as their second-most preferred learning method, after intrapersonal (Seemiller et al., 2019).

Students' lack of affinity for interpersonal learning contradicts the findings of Barnes & Noble College (2018), but their desire to be active, rather than passive learners in the classroom is prevalent in both studies.

The idea that the learner has a crucial role to play in their own learning is not a novel pedagogical approach (Fielding, 2004), but it can be reformulated as a means of addressing the outdated notion that learners are only "blank slates" who learn best through the transmission of knowledge (Costas, 2019). As Costas argues, to achieve this, the student must be at the centre of the learning process, actively participate in their own education, and understand the significance of what they are learning. As proposed by Nicksic (2020), active learning, in its conventional meaning, does not include movement but is intended to dynamically involve students in the learning process. Given that physical activity in the classroom is fundamentally active learning, introducing movement-based activities into the classroom has the potential to improve students' learning experiences and academic achievement (Nicksic, 2020).

2.3 Student engagement and movement

In the twenty-first century's fast-paced environment, where engagement is directly linked to specific classroom behaviours, it is essential for effective teaching practice to prioritize students' engagement (Mercer & Dörnyei, 2020). Philip and Duchesne (2016) defined engagement "a state of heightened attention and involvement, in which participation is reflected not only in the cognitive dimension, but in social, behavioural, and affective dimensions as well" (p. 51). As Sneck et al. (2022) point out, an increasing body of research has shown a correlation between student engagement and improved academic outcomes, including test scores and graduation rates, suggesting that this factor plays a critical role in students' ability to learn and succeed in school. According to Finn and Zimmer (2012), students that are disengaged do not actively participate in class, do not get intellectually invested in learning, do not completely sustain a feeling of school belonging, and/or behave in a manner that is inappropriate. All of these lower the chances of academic achievement. Learning experiences should increase health, wellbeing, and student engagement while meeting curricular demands (Sneck et al., 2022).

According to Reeve (2012) engagement is a multifaceted concept with four separate, but strongly interconnected components. Behavioural engagement involves the student's

concentration, attention, effort, and the extent to which they are actively participating in the learning process. Emotional engagement, on the other hand, refers to the presence of emotions that are helpful to the activity, such as interest, and the absence of emotions that are distracting from the task, such as worry. Besides these two components, when students approach their education with an organised rather than an unstructured mindset, they demonstrate higher levels of cognitive engagement. The last dimension is agentic engagement, which describes the degree to which students actively participate in their own education rather than just receiving it as a given and accepting it without question (Reeve, 2012). Recent discussions have focused on the possibility of including a social engagement component into the engagement paradigm (Xerri et al., 2018, cited in Sneck et al., 2022).

Trudeau's research (as cited in Sauro, 2022) demonstrates that exercise helps the brain operate and grow cognitively. According to Trudeau (2009), engaging in physical exercise immediately raises pupils' alertness, and this alertness is accompanied by a rise in neuronal activity in the reticular formation of the brain. The author argues that a slight increase in physical activity and arousal will probably boost learners' attention and therefore make learning easier (Trudeau, 2009). Sauro links this increase in attention and arousal to student attitudes towards the class, stating that if a student is not engaged, their class emotions and impressions may suffer. If students' brains are not active and aroused, it is reasonable to expect that they will have a less favourable take on the class. The author suggests that students respond positively to movement in the classroom, and movement's immediate stimulation and brain activity can boost pupils' class attitudes (Sauro, 2022).

In connection to movement and engagement, Gonzales (2014) goes on to state that creating memorable and effective learning opportunities for students rely heavily on their constant and active participation. Consequently, students who do not actively participate in class may miss out on important opportunities to make connections and understand the material being taught. The author highlights that students have more chances to establish meaningful connections to the material and take an active role in the learning process when they engage in instructional activities that involve movement with a purpose (Gonzales, 2014).

Complementary to this, research conducted by Vazou et al. (2012) provided evidence that students' intrinsic motivation and effort can be increased through interventions that integrate physical activities with the academic concepts being taught in the classroom. This research offered a novel piece of evidence that such interventions can be implemented without negatively impacting the value of the academic lesson being taught. Fourth- to sixth-

grade students found lessons that incorporated physical activities to be much more engaging and entertaining than regular lessons, supporting the premise (Vazou et al., 2012).

Integrating movement into academic teachings was welcomed by both students and instructors, as demonstrated by an 8-week intervention in a primary school that incorporated movement. It has been found that active classrooms increase physical activity in the classroom and improve how students feel about academic teaching and classroom physical activity. Students expressed great satisfaction with their participation in the programme, noting their appreciation of the activities, supposed health benefits, and social interactions during the lessons. Teachers recognised improved teaching and learning as a consequence of enhanced student enjoyment, focus, and motivation (Martin & Murtagh, 2017).

Studies were not limited to involving elementary school kids. Students expressed a preference for being able to walk freely in the classroom, according to research cited by Pennington (2010). Valle et al. (1986) investigated student preference and effect of mobility in the context of the middle school classroom. Mobility refers to the chance for students to stand up and walk in the classroom at various points throughout the lesson. 217 of the 412 students who were polled to state their preferences responded that they liked the activities that involved mobility. A random sample of eighty students was used for the procedure. Forty of the students who participated in the survey preferred mobility, while the remaining forty indicated a preference for a more typical passive learning environment. The findings showed that students who reported that they favour mobility performed better in an environment that encouraged movement. The fact that more than half of the participants in this study stated that they had a mobility preference is, however, the most crucial piece of information that can be concluded based on this research. The study demonstrated that children preferred to learn in an environment in which they were allowed to move around rather than one in which they were required to sit quietly at their desks (Pennington, 2010).

Another research conducted as a follow-up to a movement integration program revealed important changes in teachers' use of physical activities in the classroom (Kalma et al., 2022). Therefore, teachers and their attitudes play a major role in determining the efficacy or failure of classroom-based interventions, since they impact the amount and intensity of physical exercise that their students are exposed to during class time (Martin & Murtagh, 2017). In the course of the study, teachers taught at elementary or middle schools (7–16-year-old students). Almost all instructors (98%) stated that students enjoy movement integration in the classroom because it makes learning more engaging. Nearly 65% of teachers noticed that when there was no movement during classes, children felt restless. This

is consistent with student experience, since students have acknowledged that extended sitting during academic courses can be tiring. It is also essential to note that the majority of instructors (88%) said that students are more attentive after physical activities (Kalma et al., 2022).

Similarly to the previous findings, Estonian researchers examined students' views of movement integration recently (Uibu, 2021). Based on 17 focus group interviews with 92 8-to15-year-old Estonian learners, the results indicate that although physical activity is not yet a natural component of academic teachings in Estonia, students are interested and motivated to engage in increased physical activity. Even though they do not generally associate physical activity with academic lessons, they are able to think about a variety of activities that might make the learning process more physically active. The study revealed that activity preferences differ by gender and age, but that active learning approaches and incidental physical exercise are well-received by all age groups, regardless of gender. This is crucial when attempting to incorporate physical activity into academic sessions and motivating kids to engage in activities (Uibu, 2021).

In higher education, a meta-analysis of 14 trials involving nearly 6,000 university students found that classroom movement breaks and physically active learning are feasible in the higher education setting and reduce problematic behaviours, improve well-being, and decrease fatigue in university students (Lynch et al., 2022). Furthermore, the use of movement breaks in the classroom helped students become more focused and attentive throughout class, and the use of physically active lessons did not have a negative impact on students' academic performance. The authors remark that educators at universities should have full faith in their ability to enhance the health and well-being of their students by incorporating either classroom movement breaks or movement integration strategies into their lesson plans (Lynch et al., 2022).

2.4 Obstacles of movement integration

Looking at the previous findings, it is apparent that classroom-based research in secondary school settings is lacking. Based on the ideas of Fenesi et al. (2022), the first possible reason is that, despite the fact that many researchers and educators recognise the significance of physical activity for various aspects of adolescents' mental and physical health, the implementation of physical activity in the classroom is hindered by a number of

environmental, practical, and institutional obstacles. Michael et al. (2019) identified four types of obstacles that may be classified as institutional factors. These include lack of time, resources, space, and administrative assistance. All of these challenges are connected. Instructors regularly reported having an overcrowded curriculum, which was characterised by curricular demands, and obstacles associated with standardised testing. Furthermore, instructors were usually under time pressure.

Another key point that Fenesi et al. (2022) noted is that secondary school education requires higher degrees of critical thinking in addition to increased information synthesising. It is possible, that blending the academic material with physical exercise might be more difficult than integrate it to elementary level-schooling. However, the authors also highlight that due to the many changes between elementary school and high school, it is even more important for students to understand the benefits of physical exercise throughout their time in high school. In the view of the authors, the second reason is that researchers may be discouraged from investigating how short bouts of classroom-based physical activity can support adolescent cognitive and academic success because there are inconsistent results surrounding the benefits of short breaks of physical activity on the cognitive function of adolescents (Fenesi et al., 2022).

Moreover, a widespread misperception that substantial developmental changes do not continue beyond adolescence and into adulthood may be the third reason why research in high school is not well represented in the field. The authors proposed the idea that another factor that can contribute to the lack of research in high settings is that adolescence is characterised by shifts in attitude as well as a greater sense of self-consciousness (Fenesi et al., 2022).

Overall, these studies emphasize the importance of classroom-based movement in assisting students to achieve academic success. Even though several studies support the notion that movement enhances student engagement in an elementary and middle school context, the data concerning the views of high school students is lacking. This aim of this research is to provide a clearer understanding of the perceptions about movement of secondary school students.

III. Research design and methods

The methodology and framework for the research are discussed in this section of the overall study. To begin, the context of the study, with the list of research questions, followed by a description has been provided. Following the research questions, the participants and the study's setting will be presented. After the segment on the participants and the settings, the instrument, the process of data collection and analysis are described. The limitations are then summarised as the final section of the research design and methods chapter.

3.1 Research questions

The majority of the studies that have been conducted in the field of physically active learning have focused on students in elementary and primary schools. These studies have found that physically active learning increases students' time spent on task, marginally enhances educational outcomes, and has a favourable correlation with student engagement in school. On the other hand, the experiences of secondary school students are hardly ever discussed (Schmidt et al., 2022). Following an examination of the relevant literature, I developed an interest in learning more about the perspectives of Hungarian secondary school students on the incorporation of movement into English lessons.
The purpose of the current study was to address the following research questions:

RQ1. What are secondary school students' views on movement integration before participating in physically active English lessons?
RQ2. What are secondary school students' views on movement integration after two months of physically active English lessons?
RQ3. How does movement intervention change the way students view active tasks?

Responses of a control group were collected and studied in order to provide an additional perspective on the opinions of secondary school students on movement integration. To answer the first research question, the discussion will centre on the control group's results. However, RQ2 is considered to be the primary focus of this research since it seeks to determine whether or not secondary school students have positive attitudes

regarding the incorporation of movement into the academic subject of English. The results of the answers to these questions can be found in Chapter 4.

3.2 Setting and participants

The study was carried out in the secondary school where the researcher is now completing her teaching practice. Students at this secondary school are usually very motivated and take their studies seriously since strong academic achievement is expected as the norm. Every year, hundreds of the school's students enter and achieve great success in city, county, national, international academic and sports competitions, and 95% of them continue their studies in higher education institutions. Regarding language studies, the aim is to ensure that as many students as possible obtain a B2 level certificate of English at the end of their secondary school studies. Besides this, teachers also try to promote the opportunity to take the C1-level exam. The large number of successful language exams shows that both classroom and extracurricular language education work well at the school. In the 2021-2022 academic year, students passed a total of 83 complex English language exams.

The groups that will be compared and contrasted share a number of characteristics in common with one another. Both groups completed a preparatory language year in which they studied English for a total of 18 hours per week. English is their first foreign language, and they are taught by the same teacher who teaches them with the same method. She has over 20 years of experience as a teacher, and the majority of the time she refers to the textbook while she is instructing.

Group A is the control group. Here, the students are 16- to 18-year-old; currently, they are 10th graders, but since they had a preparatory language year before 9th grade, this is their third school year. All students have a B2 level language exam. They learn from the English File 3rd edition Upper-intermediate book. A total of 17 (n=17) students took part in research, and their gender breakdown was as follows: males made up 65% (n=11), while females made up 35 % (n=6). Since the researcher did not instruct in this class, the students who filled in the questionnaire were mainly instructed using the textbook.

Group B is the intervention group. In this group, students' range in age from 15 to 16 years old; although they are currently enrolled in the 9th grade, this is their second year attending the school. At the conclusion of their first year of school, all of them, with the exception of one student, obtained a B2 level language exam, and in a period of time that

was less than half a year, two students reported that they successfully completed a C1 level English exam. They learn from Solutions Intermediate 3rd Edition. I taught this group of students for 30 lessons and aimed to integrate movement into the lessons. The research was conducted with a total of 16 students (N=50), and the gender distribution of those participants was as follows: males made up 50% (n=8) of the participants, while females made up 50% (n=8). The members of this group were very cooperative, and there were no instances of disruptive behaviour. As a result, working with them was not at all challenging. Although in the beginning, I had a hard time dealing with the fact that they were too quiet, this changed in a relatively short amount of time. On the other hand, they were always willing to try any kind of new activity, and they participated enthusiastically in the lessons. They filled out the questionnaire after engaging in physically active English classes for more than two months.

3.3 Instruments

3.3.1. Lesson plans

The main objectives and guiding principles I had in mind while designing lesson plans in order to find out more about my students' views and attitudes towards movement integration are detailed in this section. The 30 lessons with the group were part of my long teaching practice. The objectives of the lessons were to investigate the impacts that movement integration could have on students (for examples of tasks, see Appendix E).

I made sure that movement exercises were a part of the lessons from the very beginning in order to get them adjusted to this different type of learning. The kinaesthetic activities covered the four foundational skills of language learning, such as reading, listening, speaking, and writing. Generally, the aim of the tasks was to revise the material from the previous lesson at the beginning. An example of a task like this is called "running dictation", which is a well-known ESL game. To play this, I put numbered sentence strips all around the wall. The sentences were formulated using the future perfect and future continuous tenses since the aim of the lesson was to check whether students could use these tenses correctly. Some sentences contained grammatical mistakes. Students worked in pairs; one of them was the secretary, and the other was the runner. The runner had to read the sentences and run back to the secretary, who wrote them down on paper, but this time without any mistakes. Similarly, instead of having the students work in the workbook, I

printed out the "fill in the blank" exercises, cut them out task by task, and put them on the wall. Students were given an answer sheet on which they could only write the answer if they could find the corresponding task in the room, competing with each other. Another example of a revision game is "run, talk, trade". Here, I cut out small cards and put the vocabulary from the previous lesson on them. Each student was given one card, and their task was to mingle around the room, find a pair, and define the word on the card, while the other one had to guess. When they were done, they had to switch and find a new pair.

Some activities served the purpose of practising the newly learnt material in the middle of the lesson. For instance, after familiarizing students with the vocabulary of house types and the adjectives that can be used to describe them, I put pictures of a variety of peculiar houses all around the classroom. Students worked in pairs, with one of them being a real estate agent and the other being a seller. Their task was to do a role play activity, and I also emphasised the importance of body language. They kept wandering around the classroom, acting out conversations. This was one of the most successful tasks during my teaching practice.

On the other hand, there was one activity that served no purpose other than to wake up or excite the students. The activity is called "chain reaction", and the reason we played it was that students were generally tired on Mondays and English was the last lesson of the day. Here, I cut out cards and gave one to each student. On the cards, there were commands, but students had to wait for their sign, as they could only execute the command if the previous student had finished doing the action. The activity was filled with interesting movement tasks and achieved its objectives well.

The classes needed a significant amount of preparation on my part since I aimed to make the activities as relevant to the subject matter that was going to be covered as they could possibly be. In order to ensure this, I always consulted with my mentor teacher. I made sure to emphasise task value, as the students at this school take their academic success very seriously. A number of studies have shown that interventions that focused on increasing the significance of the task, such as informing students about the activity's relevance and importance, had a positive impact on the students' motivation and performance levels (Tibbets et al., 2016). In this regard, the development of movement tasks that clearly demonstrated their usefulness was of the highest priority. I made sure to imply to the students that first and foremost, the purpose of the movement activities was to help them gain better understanding of the material that was being covered. If the activities served no purpose besides waking up the students, it was important for me to emphasise the task's relevance to

students' lives, and I told them what the main objective of the task was. When designing the tasks, it was also essential that the activities were tailored to the students' age and developmental level, and the challenges posed by them should be demanding enough to spark interest.

However, as it will be detailed in the limitations section, not all the classrooms were suitable for the activities. When adding movement to the lesson plans, safety was always the first and foremost concern. As a result, to ensure that the movement exercises were risk-free and suitable for the setting of the classroom, not all the lessons included movement.

3.3.2. Questionnaire for the students

To get answers to the research questions, students were asked to fill in a questionnaire that consisted of 26 close-ended questions addressing their opinions (see Appendix A and B). Concerning the content of the questionnaire, after the piloting, it was evident that there were a few questions that were not obvious to secondary school students because they contained phrases related to EFL methodology. To make sure students understand the statements and in order to ensure validity, I consulted about the content of my questionnaire with my supervisor, and after the feedback, a second version was finalised.

The questionnaire can be divided into three main sections. The first part inquired about students' views on English and conventional English lessons in general. The second part consisted of the most questions, and the statements referred to the benefits of movement integration. The purpose of the third section was to identify students' negative perceptions connected to classroom-based movement.

The reason questionnaire was used as a research instrument is that it supplies the best foundation for comparisons between different groups, providing reliable, and accurate data with the least amount of subjective distortion (Dörnyei, 2007). The questionnaire consisted of Likert scale-based queries. Based on the literature (Dörnyei, 2007), I used a six-point measure since some respondents might postpone making a decision by selecting one of the intermediate options, such as "neither agree nor disagree". On the scale, 6 meant strongly agree, 5 agree, 4 slightly agree, 3 slightly disagree, 2 don't agree, and 1 strongly disagree. The students' responses to the questionnaires were kept anonymous so that they would feel more encouraged to respond to questions in an open and honest manner. The questions were

posed in Hungarian so that there would be no room for misinterpretation. It took around ten minutes for the students to finish fill out the questionnaire.

3.4 Procedures

Dörnyei (2007) advises researchers to incorporate a control group into their experimental designs. Based on this, the intervention study should have at least two groups: the "treatment" or "experimental" group, which gets the treatment or is introduced to some special conditions, and the "control" group, in order to provide a standard for comparison. Therefore, the main difference between experimental designs and survey research is that in experimental designs, the researcher does not just look at how different variables relate to each other; they also change one (or more) variables and see how that affects other variables. By adding a control group, we can clearly see the effect of the goal variable (Dörnyei, 2007).

The comparison was necessary to determine how classroom-based movement effects student engagement. As it has been detailed in the “participants” section (3.2), the groups share many similarities, most importantly that both the control group and the intervention group had been instructed by the same teacher in the same manner prior to the beginning of my teaching practise. As for the differences, there is a one-year age gap and a slight difference in language proficiency, however, since members of both groups are independent users of the language, the control group continued to meet the requirements necessary to serve as a benchmark for analysis.

I started teaching English in the intervention group (Group B) in September 2022. In order to examine students’ views on movement integration, the first step of the research was creating lesson plans. The guiding principles of the lesson plans can be in found the instruments section (3.3). Taking everything into account, the steps above were completed over the course of 30 lessons.

The data collection in the intervention group took place in the last lesson. In the control group (Group A), students filled in the questionnaire in February 2023. In order to achieve maximum responses and avoid problems, the survey was paper based. This was the most efficient method for collecting the students' responses because the lessons were held in person. The time needed by participants to complete it was approximately 10 minutes. The participation was entirely voluntary, and the appropriate institutional ethical procedures

(approval from the school's principal and the head teacher, and agreement from the mentor teacher) were adhered to.

3.5 Data analysis

First, the data that was collected on paper was put into an Excel document, where negatively worded items were immediately recoded in a reversed way. In order to eliminate the possibility of errors, the responses went through a double check. To make the results more transparent, de average scores were conditionally formatted using colour scales. In the analysis, the questions were translated to English. In the thesis chart was added with the number of students who provided each response before the analysis of the findings of each question. This was done in order to facilitate better comprehension. Finally, I compared the responses of the two groups, deriving the appropriate inferences.

3.6 Limitations

The research has a number of limitations, all of which need to be taken into account in order to provide an accurate evaluation of the findings. First of all, the study was small-scale, as only two groups' views were compared, and due to the relatively small number of respondents, the results cannot be generalised and are limited to this context. Secondly, the population that was selected is not at all representative of all secondary school English learners. The potential impact of this circumstance on the accuracy and reliability of the findings cannot be overlooked. Besides, the intervention was carried out over a relatively short period of time, which means that the investigation of the long-term consequences of classroom-based movement is unknown. Additionally, the use of a Likert scale questionnaire as the only instrument of assessment may not be adequate to capture all aspects of students' perspectives on classroom-based movement because this instrument has its limitations. It would provide a clearer understanding of the topic if interviews were also included. Other variables, such as the teacher's behaviour or the classroom environment, may impact students' perceptions of classroom-based movement but may not be controlled in the experiment. Aside from that, unfortunately, not all the classrooms were suitable for movement tasks. Therefore, it was not possible to include movement in every lesson, and lessons that needed to be planned according to that for further investigation, it would be

beneficial to conduct research that is more in-depth by trying out movement integration with even older learners, such as students in the 11th and 12th grades.

IV. Results

The results of the questionnaires are presented in this part of the thesis. First, the responses of the students in the control group are shown. Students in this group did not participate in the movement integration, and they are used to conventional, textbook-based English instruction. The second part of this chapter will focus on the responses of the students who were part of the intervention group. Lastly, the results of the two groups are compared and contrasted.

4.1 Results of Group A – control group

4.1.1. Demographics

There are a total of 17 students in this class, 11 of whom are male and 6 of whom are female. Most of the students are 16-17 years old, although there is one student who is already 18. They all live in a town in Pest County, Hungary, with the exception of three students who live in a village. At the conclusion of the first year of school, every student passed the B2 language exam, indicating that they are presently upper intermediate speakers of the language. Among the respondents, 12 students reported engaging in extracurricular physical activities, while 14 students expressed their appreciation for recreational trips in their free time.

4.1.2 Opinions on English lessons in general

The first section of the questionnaire inquired about the students' perspectives on learning English and, more generally, on conventional English instruction.

Table 4.1

The control group's opinions on English lessons

Statement		**1**	**2**	**3**	**4**	**5**	**6**	**M**
1	I like to learn English.				**2**	**3**	**12**	**5.6**
2	English lessons do not cause any difficulties for me.					**6**	**11**	**5.6**
3	During English lessons, I can free myself up a bit.				**4**	**5**	**8**	**5.2**

5	I like to speak English.					**5**	**12**	**5.7**
15	Traditional English lessons do not make me enthusiastic.	**1**	**3**	**2**	**4**	**5**	**2**	**3.9**
16	I get bored sitting easily.	**2**	**7**		**4**	**1**	**3**	**3.2**
17	I do not like it when the focus is on the textbook.		**2**	**3**	**4**	**1**	**6**	**4.4**
18	I do not think using textbooks is practical.		**2**	**3**	**2**	**4**	**6**	**4.5**
19	It is tiring to sit all day.	**1**	**1**	**3**	**5**	**2**	**5**	**4.2**
	Overall							**4.7**

Based on the responses, it can be seen that all students in this group appreciate learning and enjoy speaking English. Learning English does not cause and difficulties for them, and some of them even feel as though they are able to ease up a little while they are learning the language. Over half of the students expressed a degree of agreement, ranging from slight agreement to full agreement, concerning the statement that conventional English lessons do not spark enthusiasm between them. However, this statement was also met with varying degrees of disagreement among the students; therefore, six students feel engaged by traditional English lessons. As for the use of the textbook, the majority of students agreed that they dislike it when the textbook is the primary focus of the class (11 students), and a large percentage of the class (70%) agreed that they do not believe the use of textbooks to be practical. According to the table, only half of the students reported that they become bored quickly while sitting, but a larger number of respondents (12 students) think that it is tiring to sit all day.

4.1.3. Opinions on classroom-based movement

The following section formed the primary focus of the questionnaire, in which students were asked about their viewpoints on the incorporation of physical activity into English language lessons.

Table 4.2

The control group's opinions on classroom-based movement

Statement	**1**	**2**	**3**	**4**	**5**	**6**	**M**

4	I do not have a problem with standing up during the lesson.		**2**	**4**	**3**	**8**	**5.0**
6	When I'm able to get up and walk around the class during a task, I usually feel good.	**4**	**3**	**1**	**6**	**3**	**4.1**
7	I can learn effectively when I am not sitting at the desk.	**1**	**3**	**4**	**4**	**5**	**4.5**
8	Being able to move freely encourages me to participate.	**1**	**7**	**3**	**4**	**1**	**3.6**
9	I feel less anxious when on the move.	**1**	**4**	**4**	**3**	**1**	**3.5**
10	I feel freer after a physically active task	**1**	**5**	**3**	**4**		**3.3**
11	I feel more motivated after a physically active task	**1**	**7**	**3**	**2**		**3.1**
12	I benefit from being able to talk to more of my classmates during the movement tasks, not just my benchmate.		**1**	**4**	**6**	**5**	**4.9**
13	I like moving during English lessons.	**1**	**4**	**4**	**6**	**1**	**3.9**
14	I like to revise the material with a movement task at the beginning of class.	**2**	**6**	**6**	**1**	**1**	**3.4**
	Overall						**3.9**

Looking at the table, it can be seen that there were only two statements that the group seemed to agree on. One of the statements was simply concerned with standing up during the lesson, and except for two students, all students agreed that they had no problem with it. The other was concerned with one of the benefits of movement integration, which is being able to talk to many different people face-to-face, not just the one the student is sitting next to in a traditional classroom setting. Only one student did not agree with this benefit of movement integration. It can also be seen that many students believe that they can learn effectively when they are not sitting at the desk, since 13 students agreed with this statement. Another statement that received a relatively high score was concerned with feeling good

when walking around the classroom, which 10 students agreed with. Similarly, 11 students stated that they like moving during the lessons; however, only one student chose to strongly agree. With the rest of the statement, more than half of the group did not agree, although mainly just partly. Students responded with the lowest score to question 11, which inquired about whether they felt more motivated about a movement task. Only five students agreed with this statement, and three of them only slightly. In addition to this, 10 students reported that they do not experience an increase in their sense of freedom following a movement task, and 9 students did not agree with the statement that these tasks encourage them to participate. Additionally, less than half of the group (8 students) indicated that they enjoy reviewing previously covered material with a movement-based activity at the beginning of each class period.

4.1.4. Students' attitudes towards movement integration

The final section of the questionnaire inquired about issues that students may have with movement integration. Here, negatively worded items were recoded in a reversed way.

Table 4.3

The control group's attitudes towards classroom-based movement

Statement		**1**	**2**	**3**	**4**	**5**	**6**	**M**
20	I am okay with solving tasks in the textbook.		**9**	**2**	**1**	**2**	**3**	**3.3**
21	I do not like getting up during English lesson.		**3**	**4**	**6**	**1**	**3**	**3.8**
22	I prefer to work sitting down.	**1**	**7**	**4**	**1**	**3**	**1**	**3.1**
23	I get bored easily during movement-based tasks.		**1**	**3**	**6**	**2**	**5**	**4.4**
24	Physically active tasks are tiring.	**1**	**5**	**1**	**1**	**2**	**7**	**4.1**
25	I feel there is no point in standing up in English class.		**5**	**4**	**3**	**2**	**3**	**3.6**
26	I prefer sitting while having discussions in class.	**6**	**7**	**1**	**3**			**2.1**
	Overall							**3.5**

(*Note*. 1: Strongly Agree. 2: Agree, 3: Partly agree, 4: Partly disagree, 5: Disagree, 6: Strongly disagree)

Students do not particularly consider movement activities to be boring, according to the responses; however, they do associate some other negative attributes with these tasks. According to the responses, a number of students believe that performing these tasks can be tiring (7 students), despite the fact that 7 other students strongly disagree with the statement. Nine students, which is more than half of the total, are of the opinion that standing up during the lesson is pointless; however, eight students are of the opposite opinion. In terms of personal preferences, there were 12 students who stated that they prefer to sit while working, and there were 14 students who claimed that they prefer sitting while participating in classroom discussions.

4.2 Results of Group B – intervention group

4.2.1 Demographics

The group is made up of 16 learners, of whom there are equally 8 males and females. Apart from two students who live in a village, they all live in a town in Pest County, Hungary. As it has been mentioned previously, each student, with the exception of one, passed the B2 language exam at the end of the first school year, which means that on average they are currently (upper-) intermediate level. Two students passed the C1 level exam. As the main focus of the study is physical exercise, the questionnaire also sought find an answer to the question whether students do any sports outside of school, to which 80% answered yes, and 90% go hiking in their spare time.

4.2.2. Opinions on English lessons in general

Table 4.4

The intervention group's opinions on English lessons

Statement		1	2	3	4	5	6	M
1	I like to learn English.				**2**	**7**	**7**	**5.3**
2	English lessons do not cause any difficulties for me.				**1**	**10**	**5**	**5.3**
3	During English lessons, I can free myself up a bit.	**1**		**2**	**5**	**6**	**2**	**4.3**
5	I like to speak English.			**1**	**2**	**4**	**8**	**5.3**
15	Traditional English lessons do not make me enthusiastic.			**2**	**4**	**4**	**6**	**5.1**
16	I get bored sitting easily.		**1**	**2**	**1**	**3**	**9**	**5.1**
17	I do not like it when the focus is on the textbook.				**6**	**6**	**4**	**4.9**
18	I do not think using textbooks is practical.			**3**	**5**	**6**	**2**	**4.4**
19	It is tiring to sit all day.		**1**		**2**	**4**	**9**	**5.3**
	Overall							**4.4**

As can be seen from the table, even if more than half of students do not look forward to going to school, the vast majority of them take pleasure in learning English, and they feel like it does not cause them any difficulties. However, this does not mean that English lessons do not present any challenges; indicating uncertainty, on average, students "slightly agree" when it comes to the question of whether English classes are an opportunity to chill down. It can also be seen from the responses that most students like to speak English. On average, students claimed that traditional English lessons do not make them enthusiastic. Based on the answers, it can be seen that, in general, students do not like it when the focus is on the textbook, and 13 students believe that it is not practical to use them. Regarding the statement that "I get bored sitting easily," it appears that the students have a variety of opinions, the majority of which are in agreement with the statement. In a similar vein, with the exception of one student, all of the students were of the opinion that sitting all day can be exhausting.

4.2.3. Opinions on classroom-based movement

In this part, students could express their opinions the movement tasks.

Table 4.5

The intervention group's opinions on classroom-based movement

Statement		**1**	**2**	**3**	**4**	**5**	**6**	**M**
4	I do not have a problem with standing up during the lesson.				**3**	**7**	**6**	**5.2**
6	When I'm able to get up and walk around the class during a task, I usually feel good.				**2**	**7**	**7**	**5.3**
7	I can learn effectively when I am not sitting at the desk.			**1**	**2**	**4**	**9**	**5.3**
8	Being able to move freely encourages me to participate.			**2**	**3**	**8**	**3**	**4.8**
9	I feel less anxious when on the move.		**1**	**1**	**5**	**6**	**3**	**4.6**
10	I feel more free after a physically active task		**1**	**1**	**2**	**4**	**8**	**5.1**
11	I feel more motivated after a physically active task	**1**		**1**	**6**	**3**	**5**	**4.6**
12	I benefit from being able to talk to more of my classmates during the movement tasks, not just my benchmate.			**1**	**7**	**6**	**2**	**4.6**
13	I like moving during English lessons.			**2**	**1**	**6**	**7**	**5.1**
14	I like to revise the material with a movement task at the beginning of class.		**1**	**1**	**2**	**3**	**8**	**5.1**
	Overall							**5**

According to the table, the overall mean score of the second section is 5, showing that the majority of the class agrees with the positively phrased statements related to

classroom-based movement. Without exception, the whole group agreed with two statements. One of them was simply concerned with standing up during the lesson, to which all students gave a minimum score of 4. The next statement, which everyone agreed with, was related to feeling good during movement tasks, with very similar results to the previous one, with a mean score as high as 5.3. Half of the group (8 students) strongly agreed that they like to revise the material with a movement task at the beginning of class and feel freer after one. The statement that received the highest score from the respondents was connected to learning effectively during these types of tasks. Out of 16 students, 9 strongly agreed with this statement, even though there was one who partly disagreed. Concerning the statement, "being able to move freely encourages me to participate", the respondents gave scores a bit lower compared to the previous two questions, but the answers still gravitate towards the higher end of the spectrum, with a mean of 4.8.

However, two students slightly disagreed. One of them is a boy, and based on the other answers, he does not seem to like classroom-based movement and prefers to stay still. The other is a girl, who seems to be the least fond of English lessons in general. In order to shed light on the communicational benefits of physically active lessons, students were asked what they thought of the fact that they speak to more than one classmate face-to-face during movement activities. On average, the class chose 4.6, which is a relatively high result; however, not many students chose to strongly agree, only 2, and there was one student who slightly disagreed. An important aspect of the questionnaire was related to motivation. The mean score of the statement related to feeling more motivated was 4.6; however, the aforementioned girl strongly disagreed. Although only two students gave a lower score than 4, it seems like 87% of the group feels more motivated after a physically active task. The statement that got the relatively lowest score was connected to feeling less anxious during these tasks. The mean is 4.6; most students opted for "agree" (6 students) and "slightly agree" (5 students). Surprisingly, S10 marked "slightly agree" too.

4.2.4. Students' attitudes towards movement integration

In this section, the survey ought to find out about the reasons students dislike movement tasks. The aim of the questions was also to gain more information on students' learning preferences.

Table 4.6

The control group's negative perceptions with movement integration

Statement		**1**	**2**	**3**	**4**	**5**	**6**	**M**
20	I am okay with solving tasks in the textbook.		**6**	**2**	**4**	**3**	**1**	**3.4**
21	I do not like getting up during English lessons.	**2**		**3**	**2**	**7**	**2**	**4.1**
22	I prefer to work sitting down.		**1**	**2**	**6**	**5**	**2**	**4.3**
23	I get bored easily during movement-based tasks.		**1**		**3**	**8**	**4**	**4.9**
24	Physically active tasks are tiring.			**2**	**1**	**8**	**5**	**5.0**
25	I feel there is no point in standing up in English class.		**1**	**1**		**8**	**6**	**5.1**
26	I prefer sitting while having discussions in class.	**1**		**2**	**8**	**4**	**1**	**4.1**
	Overall							**4.4**

(*Note*. 1: Strongly Agree. 2: Agree, 3: Partly agree, 4: Partly disagree, 5: Disagree, 6: Strongly disagree)

All in all, six statements are connected to this part. In this part of the questionnaire, the results are interpreted differently. Here, 6 means "strongly disagree", while 1 means "strongly agree". The most controversial statement was connected to the use of the textbook, as 8 students did not agree with this statement, which means only half of the students in the class might have problems working in the book. Based on the answers of the respondents, it can be seen that only two students feel like there is no point in standing up during the lesson. The questionnaire was also supposed to find out whether students consider these tasks to be tiring, as sometimes we had these physically active lessons at the beginning or end of the day. Two students slightly agree with the statement that movement tasks are tiring, and only one student agrees with the statement that it is easy to get bored during these tasks; therefore, in general, it seems like they do not consider these tasks to be boring. The scores are remarkably high here, as high as 4.9. Based on this, participating in tasks that involve mobility is more exciting for students than boring. Three of the students stated that they find it more comfortable to have conversations and work while seated.

Surprisingly, not just two but a total of five students came to the conclusion that they do not like to stand up and get up during the course of the instruction. Looking at the

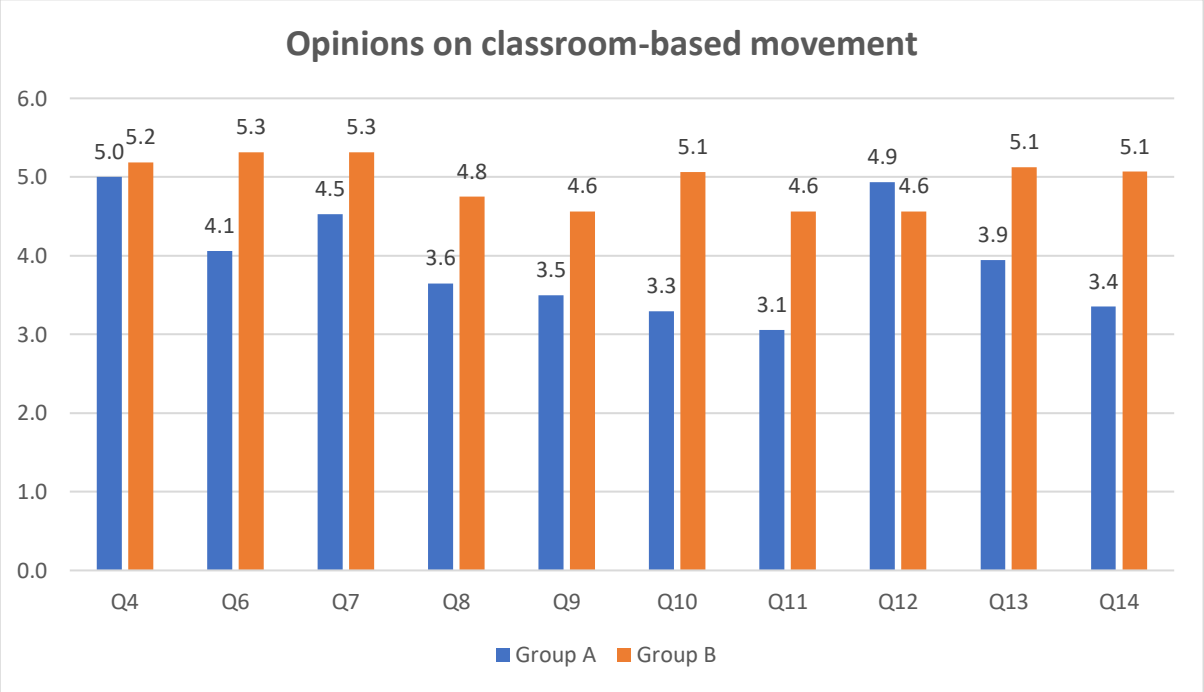
answers one by one, the scores would not differ significantly, but two girls gave a score of "1", which brought down the average (S15, S16). It is interesting to note that these two students have previously provided better scores; consequently, it is possible that they misunderstood the statement, as it was the first statement to be phrased in a negative manner. The overall mean score in this part is 0.6 points lower than it was in the previous part of the questionnaire.

4.3 Comparison of the results

In this section, the results of the two groups are compared and contrasted.

Figure 4.1

Comparison of the two groups' opinions on classroom-based movement.



Note. 1: Strongly disagree, 2: Disagree, 3: Partly disagree, 4: Partly agree, 5: Agree, 6:Strongly Agree.

When looking at the chart, it is noticeable that the two groups' perspectives on movement-based instruction are distinctly different. On average, the scores in this section differ by 1.0. As the positively worded statements suggest, there are only two statements in which there is no big difference. One of them is question 4, which was simply concerned with standing up during the lesson. The other one is the twelfth question, where,

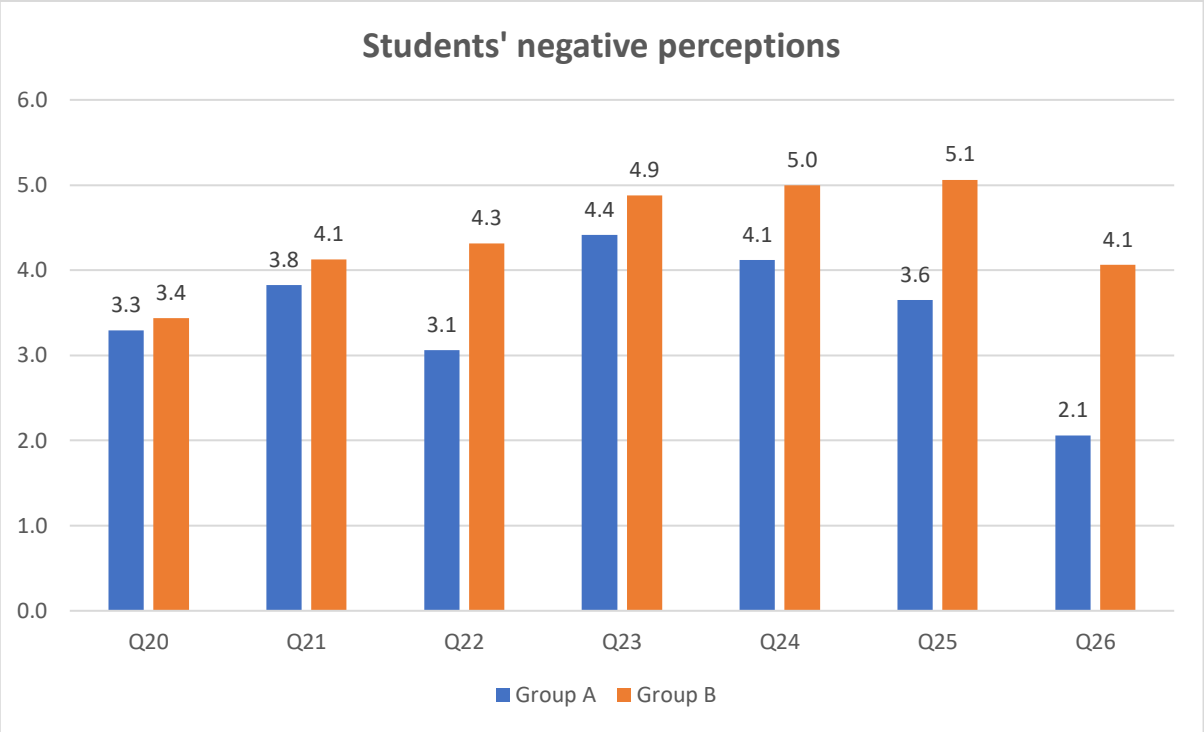
interestingly, the control group gave higher scores. This statement was concerned with one of the benefits of movement integration, which is being able to communicate face-to-face with more than one person during a task. This is the only statement where the higher scores are provided by the control group. Besides these two, the scores of the two groups are vastly different. As it can be seen, both groups agree that they can learn effectively when not sitting at the desk (question 7), but the intervention group holds this opinion more strongly.

The biggest difference that can be found is connected to question 10, where the difference in scores is 1.8. This statement was meant to find out whether students feel more at ease after a movement task. In a similar vein, the groups' opinions vastly differed on question 14, where the difference in scores was as high as 1.7. The replies of the students in the intervention group to this statement show that they do appreciate reviewing the previously covered material with a movement task at the beginning of the class. On the other hand, the responses of the students in the control groups imply the opposite, since the majority of students decided to slightly disagree with the statement. Another controversial statement was connected to motivation (question 11). Based on this, the control group is not motivated by classroom-based movement, as only 4 students indicated that they feel more or less motivated after a movement task. On the other hand, in the intervention group, except for two students, a lot of students suggested that movement tasks were motivating.

Similar differences in the scores (1.3 and 1.2) can be found regarding questions 6 and 13, which concerned how students feel during a physically active task. Based on this, it can be concluded that the intervention group experiences a significantly higher level of comfort throughout a movement task when compared to the control group. In response to question 8, which inquired whether or not being able to freely move around encourages participation, the control group gave an average score of 3.6, whereas the intervention group gave an average score of 4.8. Similarly, in question 9, which asked the students whether they felt less anxious when on the move, the scores are 3.5 and 4.6. Looking at individual responses, it can be seen that some students do believe that movement can alleviate anxiety and encourage participation, but not everyone in the group shares this opinion.

Figure 4.2

Comparison of the two groups' attitudes towards movement integration.



Note. 1: Strongly Agree. 2: Agree, 3: Partly agree, 4: Partly disagree, 5: Disagree, 6: Strongly disagree

Similarly to the previous part, where the difference between the average values of the scores was 1.0, the difference in this section is 0.9. The purpose of this part of the questionnaire was to determine some aspects of the learning preferences of the students. This section included items that were negatively worded. Looking at the last statement, question 26, it can be seen that two groups chose almost the opposite answer. This question revealed that most students in the control group prefer to have classroom discussions while seated, whereas in the intervention groups, most students disagreed with this statement to some extent. Individual answers show that in the control group, only 3 students disagreed, and only partly, as opposed to the intervention group, where 13 students voiced their disagreement, indicating that they do enjoy participating in classroom interactions while on the move.

Another statement that was related to learning preferences was question 22, which shows a 1.2 difference in the answers of the two groups. In the control group, only 5 students indicated that they prefer to work sitting, whereas this number in the other group is 13. Even

though the responses related to the use of the textbook do not really differ (question 20), there is a big difference in the two groups' answers as to whether it makes sense to stand up in English class. Only two of the students in the intervention group were of the opinion that there was no point in standing up during the lesson, whereas in control group this number was as high as 9.

V. Discussion

In this section, the discussion of the results from the previous chapter will be presented. Moving along the research questions, first the control group's views on movement integration will be discussed, followed by the experimental group. Finally, in order to get answers on how two months of movement integration changed secondary school students' attitudes towards classroom-based movement in the English lesson, the two groups will be compared.

5.1 What are secondary school students' views on movement integration without participating in physically active English lessons?

In order to address the first research question, the discussion will be based on the results of the control group. As it has been highlighted in the literature review, research on the current generation's learning preferences, especially in the field of foreign language teaching, is lacking. However, some research has demonstrated students' motivation to participate actively in the learning process (Barnes & Noble, 2018, Seemiller et al., 2019). The results of the questionnaire support these claims, as many students expressed their dissatisfaction with textbook-based instruction, and in spite of the fact that they do enjoy learning English, many students do not become excited about learning through traditional methods. This does not apply to each and every student in the group. However, even though it is clear from the responses that the majority of the students in the control group would be willing to participate in more engaging and dynamic lessons where the focus is not on the textbook, this does not suggest that all of them consider classroom-based movement to be the solution to this problem.

Although 70% of the group admitted that it can be exhausting to sit through the whole day, more than half of the students (53%) do not see the point in standing up during the lesson. As for learning preferences, the data suggest that most students would rather stay seated while participating in discussions, but at the same time, a small percentage of the group (30%) does not prefer to work sitting. There are a variety of possible explanations for this. As Fenesi et al. (2022) hypothesized based on the review of their literature, adolescents who are more interested in competitive and athletically challenging physical exercise might

not be motivated to move in classroom settings. Another factor could be that as the answers indicate, students in this group are able to concentrate very well for longer periods of time without becoming bored, in addition to already feeling good generally during English lessons. This could be an explanation for why a lot of students presume that standing up during English class is pointless. Besides, since they do not have many experiences with tasks that involve movement, they might not be able to imagine a purposeful movement task into which the material is integrated into, therefore considering it pointless. This contradicts to some extent the fact that most students agree that to learn effectively, they do not have to sit at the desk.

Examining the responses, it is also noticeable that the statement that linked motivation to movement integration scored the lowest, and as Fenesi et al. (2022) highlighted, students' enthusiasm is a key factor in the activity's success. On the other hand, as the authors also speculated, teenagers would be more willing to take part in classroom-based movement if it had been part of their school routine since primary school. The authors also suggested that adolescents are in a particularly vulnerable period of self-esteem development, and therefore they might be experiencing fear of social judgement, making them reluctant to participate in physical activities. Nevertheless, a large part of the control group agreed that movement tasks can provide benefits, such as being able to talk to several people in the classroom face-to-face and learning effectively. Perhaps this explains why the majority of them would be willing to give these activities a try if given the opportunity. This is supported by the data that suggests that, generally, most students in this group have no issue standing up during the lessons. Examining the positively worded statements related to classroom-based movement, it is apparent that students are not of the same opinion.

After the calculation of individual scores, it can be seen that eight students provided scores higher than 4.0, which means that less than half of the group (47%) shows a positive attitude towards movement integration. Seven of these students share the similarity of doing sports outside of school, but their answers cannot be generalised as they hold a variety of different opinions concerning the statements. Overall, further studies would be needed to see if this type of learning is appropriate for this group. Although the majority of the students would like to try more engaging ways of learning, not all of them agree that movement integration can be purposeful. On the other hand, it seems that most of the students are not discouraged from trying this type of learning, and a bit less than half of the students exhibit a positive attitude towards the incorporation of movement. This way, individual needs and learning preferences should be taken into consideration when planning these activities.

The results suggest that movement integration could be a possible way to enhance student engagement in the control group; however, to confirm this, they would need to participate in physically active English lessons. When including movement tasks, it would be essential to emphasise task value since it might be crucial in keeping students motivated, as suggested by previous research (Tibbets et al., 2016). Besides, as many students indicated that interacting directly with several classmates could be a great advantage of these activities, it would also be beneficial to design tasks that provide them with this opportunity.

5.2 What are secondary school students' views on movement integration after two months of physically active English lessons?

In order to find an answer to the research question of whether incorporating movement into English lessons can enhance student engagement, I asked students about their perspectives after more than two months of movement intervention. All in all, the findings are in line with the theory that adolescents have favourable impressions of classroom-based movement, although due to the fact that it was a relatively small-scale study, the generalizability of the results is limited. Since the mean score of the positively worded statements related to movement is 5.0 out of 6, I am inclined to believe that students in the experimental group generally feel comfortable and engaged during the tasks.

When examining those statements that most students chose to strongly agree with, it is apparent that students feel freer after the tasks and that they learn effectively with their help. Additionally, they also like to review the material from the previous lesson this way; therefore, the tasks can be great as warm-up activities in the beginning. They also agreed that it is beneficial to be able to talk to more of their classmates during the tasks, which suggests the intervention might have had a good effect on social interactions; however, this claim cannot be confirmed based only on these results. The introduction of physical tasks led to improvement in students' levels of attentiveness and engagement during the lessons, as it was indicated in the literature review (Mahar et al., 2006; Sauro, 2022).

Several factors can contribute to students' positive attitude towards the tasks. One can be that 80 percent of the students do sports outside of school, with some of them even competing at a high level. Furthermore, considering that almost all of the students wrote that they frequently go hiking with their families, it is safe to assume that being physically active is an important part of their lives outside of school. This could have an impact on how they

typically feel during a task, especially when it comes to competitive relay races. It is also noteworthy that, except for one student, everyone in the group indicated in the questionnaire that it is tiring to sit all day, given that they typically have 6-7 classes per day, including one P.E. session. It has also been mentioned before that students who attend this school typically exhibit a strong commitment to their academic pursuits, which indicates that they spend a significant amount of time doing their homework after school.

Moreover, students expressed dissatisfaction with conventional English instruction. There can be several reasons for this. The fact that the research is centred on classroom-based teaching is one possible explanation. Students might have felt pressured to live up to my expectations as the researcher, which can be a threat to validity, as pointed out in the literature by Dörnyei (2007). It is also possible that since students had a preparatory language year in which they had 18 English lessons a week, they might have reached a point where they had had enough of the textbook-based instruction to which they were exposed in the previous school year. Another statement can be drawn here from the questionnaire regarding the use of textbooks. Without expectations, all students indicated that they do not favour it when the primary focus is on the textbook; however, there is less consensus on whether or not it is practical.

It is equally important to mention that from examining tables 4.4, 4.5, and 4.6, it is evident that out of a total of sixteen, two students did not benefit significantly from participating in these activities. One participant is a girl who gave the movement-related activities a total score of 3.30. Regarding her language proficiency, she is the only student who did not receive a final grade of 5 the previous year and the only student who did not obtain a B2 level language exam at the end of the preparatory year. In her responses, she wrote that she does not like attending school and that traditional English classes fail to engage her. She believes that standing up during the lesson serves no purpose and prefers to complete the speaking activities while sitting. More importantly, she certainly does not feel more motivated after completing a task that requires her to move around the classroom. Her answers suggest that perhaps her lack of motivation or interest might be connected to how she felt during these tasks, as she might not be engaged in school activities in general. The fact that she does not do any sports outside of school might be another factor that can be connected here.

However, it was not her who gave the lowest score, but another student, with a score of 2.75 on average. Contrary to the previous participant, this student stated that he enjoys going to school and doing sports outside of school; therefore, it is probably not for the same

reason that none of them appreciated these tasks. Based on his responses, it is evident he prefers working in the textbook over movement tasks, considering the latter to be boring and pointless. Based on this, he gained no educational benefits from them, and neither did the tasks engage him. It seems to be that traditional learning methods are closer to the way he can learn effectively, as he might see more value and enjoyment in tasks that require structure or concentration. Overall, the lack of affination for movement tasks might be common to these students; however, the underlying reasons are presumably different, and there might be other factors that the questionnaire did not reveal.

On the other hand, it is evident that social factors probably did not play a role since both students admitted that it is advantageous that they can talk to their classmates during the tasks. The answers of these students should be taken into consideration when planning a lesson so that teachers are aware that not every student will equally benefit from classroom-based movement.

All in all, examining the last part of the questionnaire, which was concerned with the students' negative perceptions in connection to movement integration, it can be concluded that even though the scores given by the students are 0.6 points lower than they were in the previous section, students appreciated participating in the movement integration. The majority of them saw the tasks as purposeful and motivating, and the responses of the students indicate that some of them may even prefer to learn in this manner. The analysis supports the theory that incorporating movement could be a viable way to enhance engagement in the EFL classroom, as it has been suggested by several authors (Vazou et al., 2012; Martin & Murtagh, 2017; Kalma et al., 2022; Uibu, 2021).

5.3 How does movement intervention change the way students view active tasks?

The analysis of the results of the two groups supports the theory that a short-term movement intervention might be able to change the way adolescents perceive active tasks in the ESL classroom. This is indicated by the average of 1.0 difference in their responses, since while the students in the control group provided a mean score of 3.8 to all questions related to classroom-based movement, this number is as high in the intervention group as 4.8. The results of the questionnaire reveal that while most students in the control group believe that they would benefit from more engaging English lessons, not everyone is enthusiastic about trying these tasks—only around 47% of them are. The findings are in line with the literature,

stating that older students who have not been exposed to these kinds of tasks might view them as childish or improper (Uibu et al., 2021). Contrary to this, 86% of the students approved classroom-based movement in the intervention group.

There was only one statement to which the control group gave higher scores, and it was related to social factors: the benefit of being able to mingle with multiple classmates during, for instance, a mingle task. One plausible explanation for this could be that since the control group is one grade above, they spent more time together than the intervention group; therefore, the social connections in the class might be better.

Overall, the results suggest the two groups' opinions vastly differ on aspects like motivation, participation, and feeling comfortable and freer during a movement task. The biggest difference that can be found in the questionnaire when comparing the two groups is connected to learning preferences. The answers demonstrated that the majority of the students in the control group preferred having classroom discussions while seated, whereas the opposite was true for the other group. In a similar vein, more students in the intervention group expressed that they do not necessarily prefer to work while seated. It is also evident that intervention proved to students that movement tasks can serve a purpose in the EFL classroom and can be a feasible way to review, learn, and practise the material.

The interpretation of the results builds on the hypothesis that the intervention group would have held a similar opinion as the control group. This way, it can provide a clearer understanding of how students' perceptions can change after a short-term intervention. However, generalizability is limited. As it has been detailed in the methodology section, the two groups are comparable in many aspects, but there are also a number of differences between them. In terms of proficiency, the students in both groups are independent users of the language, and normally they are also taught by the same teacher, so they are used to the same type of instruction. As for the differences, students in the control group are one year older, which is a possible threat to validity. Besides, the results would be easier to generalise if the same teacher taught them during the course of the intervention, for example, if I had the opportunity to teach in both groups and not only in the experimental group. Further research should consider variables like these. The methodological choices were constrained; in order to get more in-depth and qualitative data, interviews should be conducted in both groups.

VI. Conclusion

While previous research has focused on either teachers' or primary school-age children's perceptions, this study adds to the relatively small body of research conducted on secondary students' opinions on classroom-based movement, and this way it can provide a new insight for teachers who would like to improve student engagement in their EFL classrooms. As Uibu et al. (2021) noted, there is a tendency towards extensive sedentary time in the classrooms, and for this reason "it is essential to find and apply more methods to disrupt continuous sitting" (p. 21). A number of studies in the literature review have highlighted the benefits physically active tasks can have on cognitive performance and motivation in elementary school, but little is known about secondary school students' attitudes towards these tasks.

The aim of the first research question was to discover students' presumptions who are used to conventional, textbook-based English instruction. The results revealed that most students would be open to trying these activities, but only less than half of them associate positive attributions with these tasks, such as feeling comfort, alleviating anxiety, and motivation. A bit more than half of the students considered standing up during the lesson to be pointless, indicating that they could not necessarily imagine that these tasks could have integrated academic content. Consequently, in secondary school settings, it is crucial to design activities that enhance learning and serve a real purpose in the lesson, which can pose a challenge for teachers.

The second research question investigated whether classroom-based movement is well-received by secondary school students. By analysing the perceptions of students after a two-month movement intervention, this thesis has shown that the use of these activities can be an effective strategy to reduce sedentary time and review, learn, and practice the material in a way that is engaging to 15–16-year-old students. Generally speaking, based on responses, students appreciated, for the most part, that they felt good during the tasks while learning effectively. However, individual preferences also need to be taken into account, as two students seemingly did not benefit from these activities as much as the others. Therefore, when planning the lessons, teachers should be aware that not everyone will profit from these activities to the same extent, and they should consider the different characteristics in the classroom.

The purpose of the last research question was to determine how a short intervention can change students' perceptions about the topic. To find out more about this question, the

answers of the participants in the control and experimental groups were compared and contrasted. Even though the results cannot be generalized due to the limitations formulated in this previous chapter, the comparison still provides a clearer understanding. The findings are in line with my theory that teenagers' perceptions can be improved through a brief intervention of active tasks in the EFL classroom. More specifically, 86% showed a positive attitude in the experimental group, while this number 47% in the other one.

The conduct of the research reinforced my belief that not only small children appreciate the opportunity to move around the classroom. Sedentary time was reduced by an average of ten minutes in those sessions where it was possible to carry out the tasks. This probably did not have a significant effect on students' health, but the research provided new insight about adolescents' learning preferences. Further research should include more qualitative research methods, such as interviews. Additionally, conducting an intervention with students in higher grades could also contribute to the understanding of student engagement in secondary school settings.

Pedagogical implications

Overall, when planning these activities, it is essential to consider the unique characteristics of the students in the classroom. As the study revealed, not all students might favour the incorporation of movement tasks. Besides, it is equally important to integrate the academic material into these activities in all cases; otherwise, older students might not see them as valuable, which could demotivate them. In the literature, Fenesi et al. (2022) also warned teachers that the whole atmosphere of the classroom plays a paramount role in how receptive students are to engaging in these activities, since "if a majority (or even a vocal minority) of students view classroom-based physical activity as "un-cool", the risk of social ostracization will almost always outweigh the willingness to participate" (p. 7). Therefore, teachers should be careful when incorporating movement tasks, and it is probably more advisable to start with simple mingle activities instead of an activity like the chain reaction (for a list of activities, see Appendix E). Teachers should also be aware that, in order to be successful, the design of the tasks might require significant effort and time. However, if a teacher has a tried and tested repertoire, it can reduce the time spent preparing.

Bibliography

Almond, L., & Myers, L. (2017). Physical literacy and the primacy of movement. *Physical Education Matters*, 12(1), 19-21.

Asher, J. J. (1966). The Learning Strategy of the Total Physical Response: A Review. The Modern Language Journal, 50(2), 79. https://doi.org/10.2307/323182

Barnes & Noble College. (2018). Getting to know Gen Z: Exploring middle and high schoolers' expectations for higher education. Retrieved from https://www.bncollege.com/wp-content/uploads/2018/09/Gen-Z-Report.pdf

Bedard, C., St John, L., Bremer, E., Graham, J. D., & Cairney, J. (2019). A systematic review and meta-analysis on the effects of physically active classrooms on educational and enjoyment outcomes in school age children. PloS one, 14(6), e0218633. https://doi.org/10.1371/journal.pone.0218633

Campos, C.P. (2018). Physical activity as an enhancer of vocabulary learning: a brief narrative overview. *Cambridge Occasional Papers in Linguistics*. *11*(7), 146–151.

Corbin, B. D. (2007). Unleashing the Potential of the Teenage Brain. *Ten Powerful Ideas*. https://doi.org/10.1604/9781412957625

Costas, B. (2019). Learning in, through and about movement - Teaching research methods and research skills, engaging the imagination to develop creative and reflective thinkers. Retrieved from http://hdl.handle.net/2299/21356

de Greeff, J. W., Bosker, R. J., Oosterlaan, J., Visscher, C., & Hartman, E. (2018). Effects of physical activity on executive functions, attention and academic performance in preadolescent children: A meta-analysis. Journal of Science and Medicine in Sport, 21(5), 501–507. https://doi.org/10.1016/j.jsams.2017.09.595

Valle, J. D., Dunn, K., Dunn, R., Geisert, G., Sinatra, R., & Zenhausern, R. (1986). The Effects of Matching and Mismatching Students' Mobility Preferences on Recognition and Memory Tasks. The Journal of Educational Research, 79(5), 267–272. https://doi.org/10.1080/00220671.1986.10885690

Dhority, L., & Jensen, E. (1998). Joyful fluency: brain-compatible second language acquisition. The Brain Store. doi:10.1111/obr.12285

Dörnyei, Z. (2003). Questionnaires in second language research: Construction administration, and processing. Mahwah, NJ: Lawrence Erlbaum Associates Inc.

Dörnyei, Z. (2007). Research Methods in Applied Linguistics. https://doi.org/10.1604/9780194422581

Eckleberry-Hunt, J., Lick, D., & Hunt, R. (2018). Is Medical Education Ready for Generation Z? *Journal of Graduate Medical Education*, *10*(4), 378–381. https://doi.org/10.4300/jgme-d-18-00466.1

Erwin, H., Fedewa, A.L., & Ahn, S. (2012). Student Academic Performance Outcomes of a Classroom Physical Activity Intervention: A Pilot Study. *International Electronic Journal of Elementary Education*, 4, 473-487.

Fenesi, B., Graham, J. D., Crichton, M., Ogrodnik, M., & Skinner, J. (2022). Physical Activity in High School Classrooms: A Promising Avenue for Future Research. *International Journal of Environmental Research and Public Health*, *19*(2), 688. https://doi.org/10.3390/ijerph19020688

Fielding, M. (2004). "New Wave" Student Voice and the Renewal of Civic Society. *London Review of Education*. https://doi.org/10.1080/1474846042000302834

Finn, J. D., & Zimmer, K. S. (2012). Student Engagement: What Is It? Why Does It Matter? Handbook of Research on Student Engagement, 97–131. https://doi.org/10.1007/978-1-4614-2018-7_5

Fredericks, C. R., Kokot, S. J., & Krog, S. (2006). Using a developmental movement programme to enhance academic skills in grade 1 learners. *South African Journal for Research in Sport, Physical Education and Recreation*, *28*(1). https://doi.org/10.4314/sajrs.v28i1.25929

Gonzales J. (2014). The Effect of Kinesthetic Learning Strategies on the Engagement of Middle School Students. *Goucher College.*

Hamar P., Karsai I., Soós I. (2016): Pedagógusi vélemények az iskolai testnevelés aktuális kérdéseiről. In: Értékteremtő testnevelés.

Hannaford, C. (2007). Smart Moves. *Why Learning Is Not All in Your Head, Second Edition*. https://doi.org/10.1604/9780915556373

Jensen, E. (2005). *Teaching with the Brain in Mind*. https://doi.org/10.1604/9781416600305

Jensen, E. P. (2006). Joyful Fluency. *Brain-Compatible Second Language Acquisition*. https://doi.org/10.1604/9781890460013

Kalma, M., Mägi, K., Mäestu, E., Mooses, K., & Kull, M. (2022). Design Process and Implementation of Teacher Training Modules in Movement Integration: What Have We Learnt? *Sustainability*, *14*(9), 5484. https://doi.org/10.3390/su14095484

Krüger, M. (2018). Second language acquisition effects of a primary physical education intervention: A pilot study with young refugees. *PLOS ONE*, *13*(9), e0203664. https://doi.org/10.1371/journal.pone.0203664

Lindt, S. F., & Miller, S. C. (2017). Movement and learning in elementary school. *Phi Delta Kappan*, *98*(7), 34–37. https://doi.org/10.1177/0031721717702629

Liu, F., Sulpizio, S., Kornpetpanee, S., & Job, R. (2017). It takes biking to learn: Physical activity improves learning a second language. *PLOS ONE*, *12*(5), e0177624. https://doi.org/10.1371/journal.pone.0177624

Lynch, J., O'Donoghue, G., & Peiris, C. L. (2022). Classroom Movement Breaks and Physically Active Learning Are Feasible, Reduce Sedentary Behaviour and Fatigue, and May Increase Focus in University Students: A Systematic Review and Meta-Analysis. *International Journal of Environmental Research and Public Health*, *19*(13), 7775. https://doi.org/10.3390/ijerph19137775

Mahar, M. T., Murphy, S. K., Rowe, D. A., Golden J., Shields, A. T., & Raedeke, T. D. (2006). Effects of a Classroom-Based Program on Physical Activity and On-Task Behavior. *Medicine & Science in Sports & Exercise*, *38*(12), 2086–2094. https://doi.org/10.1249/01.mss.0000235359.16685.a3

Marshall, C. (2007). Increasing International Interest Requires a Quantum Leap in Methodologies for Learning World Languages.

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

Mercer, S., & Dörnyei, Z. (2020). *Engaging Language Learners in Contemporary Classrooms*. https://doi.org/10.1017/9781009024563

Middleton, F. A., & Strick, P. L. (1994). Anatomical Evidence for Cerebellar and Basal Ganglia Involvement in Higher Cognitive Function. *Science*, *266*(5184), 458–461. https://doi.org/10.1126/science.7939688

Németh, Á., & Költő, A. (2016). Egészség és egészségmagatartás iskoláskorban. Budapest: Nemzeti Egészségfejlesztési Intézet (NEFI). 32-33.

Nicksic, H. Lindt, S.F. & Miller S.C. (2020). Move, Think, Learn: Incorporating Physical Activity into the College Classroom. *International Journal of Teaching and Learning in Higher Education*. *32*(3), 528-535.

Norlander, T., Moås, L., & Archer, T. (2005). Noise and Stress in Primary and Secondary School Children: Noise Reduction and Increased Concentration Ability Through a Short but Regular Exercise and Relaxation Program. *School Effectiveness and School Improvement*, *16*(1), 91–99. https://doi.org/10.1080/09243450500114173

Pennington, E. (2010). Brain-Based Learning Theory: The Incorporation Of Movement To Increase The Learning Of Grammar By High School Students. Dissertation. The Faculty of the School of Education Liberty University.

Philp, J., & Duchesne, S. (2016). Exploring Engagement in Tasks in the Language Classroom. *Annual Review of Applied Linguistics*, *36*, 50–72. https://doi.org/10.1017/s0267190515000094

Powell J. (2018). Generation Z in the Workplace. Montreat College. Retrieved from https://www.montreat.edu/about/reflection/spring-2018/genzworkplace/.

Quarmby, T., Daly-Smith, A., & Kime, N. (2018). 'You get some very archaic ideas of what teaching is . . . ': primary school teachers' perceptions of the barriers to physically active lessons. *Education 3-13*, *47*(3), 308–321. https://doi.org/10.1080/03004279.2018.1437462

Ratey, J. J. (2008). Spark. *The Revolutionary New Science of Exercise and the Brain*. https://doi.org/10.1604/9780316113502

Reeve, J. (2012). A self-determination theory perspective on student engagement. In Christenson, S. L., Reschly, A. L., & Wylie, C. (Eds.), Handbook of research on student engagement (pp. 149–172).

Sauro, K. (2022). The effects of incorporating kinesthetic learning on learning outcomes and on-task behavior. *Master's Theses*. 154.

Schenarts, P. J. (2020). Now Arriving: Surgical Trainees From Generation Z. *Journal of Surgical Education*, *77*(2), 246–253. https://doi.org/10.1016/j.jsurg.2019.09.004

Schmidt, S. K., Bratland-Sanda, S., & Bongaardt, R. (2022). Secondary school teachers' experiences with classroom-based physically active learning: "I'm excited, but it's really hard." *Teaching and Teacher Education*, *116*, 103753. https://doi.org/10.1016/j.tate.2022.103753

Schmidt, S. K., Bratland-Sanda, S., & Bongaardt, R. (2022). Young adolescents' lived experience with teacher-led classroom-based physical activity: A phenomenological study. *Teaching and Teacher Education*, *116*, 103777. https://doi.org/10.1016/j.tate.2022.103777

Seemiller, C., Grace, M., Dal Bo Campagnolo, P., Mara Da Rosa Alves, I., & Severo De Borba, G. (2019). How Generation Z College Students Prefer to Learn: A Comparison of U.S. and Brazil Students. *Journal of Educational Research and Practice*, *9*(1). https://doi.org/10.5590/jerap.2019.09.1.25

Shorey, S., Chan, V., Rajendran, P., & Ang, E. (2021). Learning styles, preferences and needs of generation Z healthcare students: Scoping review. *Nurse Education in Practice*, *57*, 103247. https://doi.org/10.1016/j.nepr.2021.103247

Sneck, S., Syväoja, H., Järvelä, S., & Tammelin, T. (2022). More active lessons: teachers' perceptions of student engagement during physically active maths lessons in Finland. *Education Inquiry*, 1–22. https://doi.org/10.1080/20004508.2022.2058166

Tibbetts, Y., Canning, E. A., & Harackiewicz, J. M. (2015). Academic Motivation and Performance: Task Value Interventions. International Encyclopedia of the Social & Behavioral Sciences, 37–42. https://doi.org/10.1016/b978-0-08-097086-8.26078-9

Trudeau, F., & Shephard, R. J. (2009). Relationships of Physical Activity to Brain Health and the Academic Performance of Schoolchildren. *American Journal of Lifestyle Medicine*, *4*(2), 138–150. https://doi.org/10.1177/1559827609351133

Uibu, M., Kalma, M., Mägi, K., & Kull, M. (2021). Physical Activity in the Classroom: Schoolchildren's Perceptions of Existing Practices and New Opportunities. *Scandinavian Journal of Educational Research*, *66*(7), 1109–1126. https://doi.org/10.1080/00313831.2021.1958376

Vazou, S., Gavrilou, P., Mamalaki, E., Papanastasiou, A., & Sioumala, N. (2012). Does integrating physical activity in the elementary school classroom influence academic motivation? *International Journal of Sport and Exercise Psychology*, *10*(4), 251–263. https://doi.org/10.1080/1612197x.2012.682368

Watson, A., Timperio, A., Brown, H., Best, K., & Hesketh, K. D. (2017). Effect of classroom-based physical activity interventions on academic and physical activity outcomes: a systematic review and meta-analysis. *International Journal of Behavioral Nutrition and Physical Activity*, *14*(1). https://doi.org/10.1186/s12966-017-0569-9

Webster, C. A., Russ, L., Vazou, S., Goh, T. L., & Erwin, H. (2015). Integrating movement in academic classrooms: understanding, applying and advancing the knowledge base. Obesity Reviews, 16(8), 691–701. https://doi.org/10.1111/obr.12285

Xerri, M. J., Radford, K., & Shacklock, K. (2017). Student engagement in academic activities: a social support perspective. *Higher Education*, *75*(4), 589–605. https://doi.org/10.1007/s10734-017-0162-9

Appendices

Appendix A

Questionnaire in Hungarian

1. Nem:
   a. férfi
   b. nő

2. Kor: _____

3. Lakóhely:
   a. főváros
   b. megyeszékhely
   c. város
   d. falu

4. Melyik csoportba tartozol?
   a. Angol I.
   b. Német I.

5. Milyen másik nyelvet tanulsz az iskolában? _____

6. Tavalyi év végi jegy angolból: _____

7. Van B2-es nyelvvizsgád angol nyelvből? : _____

8. Szeretsz iskolába járni?
   a. igen
   b. nem
9. Sportolsz iskolán kívül?
   a. igen
   b. nem
10. Szoktál kirándulni?
    a. igen
    b. nem

	Teljesen egyetértek	Egyetértek	Inkább egyértek	Inkább nem értek egyet	Nem értek egyet	Egyáltalán nem értek egyet
1. Szeretek angolul tanulni.						
2. Az angol órák nem okoznak számomra nehézséget.						
3. Az angol órákon fel tudok egy kicsit szabadulni.						
4. Nem okoz számomra problémát, ha fel kell állni angol órán.						

5. Szeretek angolul beszélni.						
6. Jól szoktam magamat érezni azoknál a feladatoknál, amikor mozogni tudok a teremben.						
7. Úgy érzem hatékonyan tudok tanulni, ha nem a padban ülök.						
8. Ha szabadon tudok mozogni, az ösztönöz a részvételre.						
9. Ha nem a padban ülök, kevésbé szorongok.						
10. Felszabadultabbnak érzem magam egy mozgásos feladat után angol órán.						
11. Motiváltabbnak érzem magam egy mozgásos feladat után angol órán.						
12. Előnyös, hogy több csoporttársammal tudok beszélni a mozgásos feladatok során, nem csak a padtársammal.						
13. Szívesen mozgok angol órán.						
14. Szívesen ismétlem át az anyagot egy mozgásos feladattal óra elején.						
15. A hagyományos angol órák nem mindig tesznek lelkessé.						
16. Hamar elunom magam egyhelyben ülve.						
17. Nem szeretem, ha a fókusz a tankönyven van.						
18. Nem érzem praktikusnak a tankönyv fókuszú órákat.						
19. Fárasztó egész nap egyhelyben ülni.						
20. Szívesen oldok meg feladatokat a könyvben.						
21. Nem szívesen állok fel angol órán.						
22. Jobban szeretek a padban ülve dolgozni.						
23. Hamar elunom magam a mozgásos feladatok közben.						
24. A mozgásos feladatok fárasztóak.						
25. Úgy érzem nincs értelme felállni angol órán.						
26. Jobban szeretek ülve beszélgetni órán.						

Appendix B

Questionnaire translated to English

1. Gender:
   a. female
   b. male

2. Age: _____

3. Current location:
   a. capital
   b. county seat
   c. town
   d. village

4. Which group do you belong to?
   a. English I.
   b. German I.

5. End-of-year grade in English last year: _____
6. Have you got an English B2-level exam? _____

7. Do you enjoy attending school?
   a. yes
   b. no
8. Do you do any sports outside of school?
   a. yes
   b. no
9. Do you go usually go hiking?
   a. yes
   b. no

	Strongly agree	Agree	Partly agree	Partly disagree	Disagree	Strongly disagree
1. I like to learn English.						
2. English lessons do not cause any difficulties for me.						
3. During English lessons, I can free myself up a bit.						
4. I do not have a problem with standing up during the lesson.						
5. I like to speak English.						
6. When I'm able to get up and walk around the class during a task, I usually feel good.						
7. I can learn effectively when I am not sitting at the desk.						

8. Being able to move freely encourages me to participate.						
9. I feel less anxious when on the move.						
10. I feel freer after a physically active task						
11. I feel more motivated after a physically active task						
12. I benefit from being able to talk to more of my classmates during the movement tasks, not just my benchmate.						
13. I like moving during English lessons.						
14. I like to revise the material with a movement task at the beginning of class.						
15. Traditional English lessons do not make me enthusiastic.						
16. I get bored sitting easily.						
17. I do not like it when the focus is on the textbook.						
18. I do not think using textbooks is practical.						
19. It is tiring to sit all day.						
20. I am okay with solving tasks in the textbook.						
21. I do not like getting up during English lessons.						
22. I prefer to work sitting down.						
23. I get bored easily during movement-based tasks.						
24. Physically active tasks are tiring.						
25. I feel there is no point in standing up in English class.						
26. I prefer sitting while having discussions in class						

Appendix C

Table X – Questionnaire results of the control group

	Group A - control group																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
B2 exam	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gender	1	1	1	0	1	1	1	0	0	0	0	0	1	1	1	1	1
Age	17	17	17	17	17	18	16	17	17	17	16	17	17	16	17	17	17
Location	3	3	3	3	3	4	4	3	4	3	3	3	3		3	3	3
Grade	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
School	0	1	0	1	1	1		0	0	0	0	0	0	0	0		1
Sport	1	1	1	1	1	1	1	1	1	0	0	0	1	0	1	1	0
Hiking	1	1	1	1	1	1	1	0	0	1	0	1	1	1	1	1	0
Q1	6	6	6	5	6	6	6	5	4	5	4	6	6	6	6	6	6
Q2	5	6	6	5	5	6	6	6	5	6	6	6	6	6	5	6	5
Q3	5	6	6	5	5	6	6	4	4	4	6	6	5	5	6	4	6
Q4	3	4	5	5	6	4	6	6	3	4	6	4	6	6	5	6	6
Q5	6	6	6	5	5	6	6	5	5	5	6	6	6	6	6	6	6
Q6	2	3	5	6	6	2	6	5	5	2	2	3	5	5	3	5	4
Q7	4	3	5	5	4	5	4	6	6	5	2	3	6	6	3	6	4
Q8	3	3	4	6	5	3	5	3	5	1	4	2	3	3	3	5	4
Q9	2	5	4	5	3	4	5	3	6	1	2	2	4		3	4	3
Q10	3	2	3	5	5	4	4	3	5	1	4	2	2	2	3	5	3
Q11	2	3	3	4	3	4	5	3	5	1	3	2	2	2	3	4	3
Q12	5	4	4	4		6	5	6	6	3	6	5	5	5	6	5	4
Q13	4	4	4	5	5	2	5	5	5	3	1	3	3	5	4	6	3
Q14	4	1	4	4	4	3	4	6	3	1	3	3	3	3	5	4	2
Q15	4	1	5	2	2	3	5	6	4	5	6	4	5	5	3	2	4
Q16	2	2	5	2	2	4	4	6	6	2	6	2	1	1	4	4	2
Q17	2	3	4	2		4	6	6	6	6	6	5	4	6	3	3	4
Q18	5	2	5	2	3	4	5	6	6	6	6	6	4	6	3	3	5
Q19	6	4	5	3	3	6	4	6	6	3	4	2	4	1	4	5	6
Q20	2	2	2	2	2	4	2	6	6	3	5	5	3	6	2	2	2
Q21	4	3	4	4	5	4	4	6	2	3	2	2	4	6	3	6	3
Q22	2	3	3	2	3	3	5	6	1	2	2	2	4	5	2	5	2
Q23	4	3	4	5	6	4	6	6	6	3	3	2	6	4	4	5	4
Q24	6	5	2	6	6	2	3	6	6	1	2	2	6	2	4	5	6
Q25	2	3	2	6	5	3	5	6	4	3	2	2	4	4	3	6	2
Q26	1	2	2	2	4	2	4	2	1	1	1	2	4	1	2	3	1

Appendix D

Table X – Questionnaire results of the intervention group

	Group B - intervention group															
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
B2 exam	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1
Gender	1	1	1	0	0	0	1	0	1	0	0	0	0	1	1	1
Age	16	15	16	16	15	15	15	16	16	15	15	16	15	16	16	16
Location	3	3	3	3	3	3	3	4	3	3	4	3	3	3	3	3
Grade	5	5	5	5	5	5	5	5	5	4	5	5	5	5	5	5
School	0	1	1	0	0	0	1	1	1	0	0	0	0	1	0	1
Sport	1	0	1	1	1	0	1	1	1	0	1	1	0	1	1	1
Hiking	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Q1	5	6	6	5	4	6	6	5	6	4	6	5	5	5	5	6
Q2	5	5	5	4	5	6	6	5	6	5	5	5	5	6	5	6
Q3	4	5	6	3	3	6	5	4	5	1	4	5	4	4	5	5
Q4	5	5	6	5	5	6	6	6	6	5	4	4	5	4	5	6
Q5	3	6	6	5	5	6	6	4	6		6	6	4	5	5	6
Q6	5	5	6	6	6	6	6	6	6	4	5	5	5	4	5	5
Q7	6	6	6	6	6	6	5	6	6	4	5	5	5	3	6	4
Q8	5	5	5	5	5	5	5	6	6	3	4	4	6	3	5	4
Q9	4	5	6	5	5	4	5	6	5	4	4	6	4	3	5	2
Q10	5	6	6	6	6	6	4	6	6	3	5	6	4	2	5	5
Q11	4	4	6	4	4	6	4	6	6	1	5	6	4	3	5	5
Q12	5	5	5	4	3	5	6	4	4	4	4	4	5	4	6	5
Q13	4	6	6	5	6	6	5	6	6	3	5	5	5	3	6	5
Q14	4	4		6	6	6	5	6	6	3	6	6	5	2	5	6
Q15	4	5	5	6	6	6	5	6	3	6	4	6	4	3	5	4
Q16	3	6	6	5	5	6	6	6	4	6	5	6	6	2	6	3
Q17	4	6	5	4	4	6	4	5	5	6	5	6	5	4	5	4
Q18	5	5	3	4	4	5	4	5	5	6	5	6	4	3	4	3
Q19	6	4	6	6	6	6	5	5	6	6	4	6	6	2	5	5
Q20	4	4	3	2	2	4	2	4	5	6	5	5	3	2	2	2
Q21	4	5	6	5	5	1	5	1	6	3	5	3	4	3	5	5
Q22	3	6	6	5	5	4	4	5	5	3	4	4	4	2	5	4
Q23	6	5	6	5	5	5	5	6	6	4	5	4	4	2	5	5
Q24	4	5	6	5	5	6	5	5	6	3	6	5	5	3	6	5
Q25	5	5	6	5	5	6	5	5	6	3	6	6	5	2	5	6
Q26	4	4	4	5	5	4	5	4	6	3	3	4	4	1	5	4

Appendix E

Examples of movement tasks

Name of the activity	**Aim of the activity**	**Description**	**Materials**
Running dictation	Students can use the future perfect and future continuous tense.	The teacher puts sentence strips on the wall, which together form a story. Students work in pairs and compete in a relay race in which one person runs to a specified spot to recite the phrase and then returns to their secretary, who transcribes it. They debate whether or not the use of tense is right, revising as needed.	Sentence strips on the wall
Making predictions	Students can use the future perfect and future continuous tense.	Students form assumptions about their classmates. They open each statement with the name of a classmate for whom they believe the prediction will come true. Following that, they must stand up, mingle, and ask questions to determine whether these claims are true or likely to become true.	Worksheet/student
Real estate agent role play	Students can use the vocabulary related house types and adjectives describing houses. They make, accept and refuse an offer.	Students role-play a conversation between a real estate agent and a potential buyer. They imagine they are on a big field with different houses. They constantly wander around the classroom and put emphasis on body language while acting out the conversations in front of the houses.	Pictures of real-world houses all around the classroom
Run around and fill in the blanks	Students can use the grammar correctly.	Teacher prints out a “fill in the blanks” worksheet, cuts into to small chunks, and puts them on the wall. Students get an answer sheet. The aim is to fill out	Strips on the wall, one answer sheet/student

		the answer sheet by running around the classroom as quickly as possible.	
Run, Talk, Trade	Students are familiar with the vocabulary.	Students mingle in the classroom, find somebody, and define the word on their card. Their classmate guesses. At the end of each interaction, students swap cards and run to a new partner.	Cards with words of the vocabulary
Chain reaction	Students can understand the present perfect.	The teacher cuts the cards and distributes one to each student. When the teacher shouts "Hello," a chain reaction begins. Students must pay attention and complete the assignment on the card. They are unable to finish their task until the former student has finished the one before it.	1 card/student. One example card: “Someone has just left the classroom. Take a chair and put it on a desk.”
Parts of the body	Students can identify parts of the body.	In pairs, students stand in front of each other. They take turns describing a different part of the body. If their partner guesses, they have to say the name of the body part and touch it.	-
Creating stories	Students can understand the vocabulary related to injuries.	Teacher looks at the photos with the class and elicits the words for the injuries (broken ankle; sprained wrist; black eye; broken arm). Students then work in groups to create stories about how each person got the injury. They are encouraged to think of unusual or funny ideas. The teacher then invites groups of students to act out the story for the rest of the class. The class guesses.	Photos of people with injuries
Find someone who	Students can understand the vocabulary related extreme sports.	Students walk around the classroom asking each other yes/no questions based on the worksheet's instructions. When a classmate responds,	One worksheet/student

		"Yes, I do," the student notes down their name and asks further to learn more.	
Vocabulary riddle	Students can understand vocabulary related to sports.	Teacher puts vocabulary riddles all around the classroom and does not provide any help. Students need to come up with a 3-digit code. Once they are done, they need to realise that this code will open a lock on a box in the room.	Strips of paper, a box with a lock.
Pass the ball	The objective is to encourage interaction between the students.	Instead of calling out someone, students are encouraged to stand up and throw or catch a ball for a more fluent discussion.	A ball
Sentence battles	Students can describe a picture.	The class is divided into two teams, each occupying two opposite sides of the classroom. Teacher projects a picture. Students need to say sentences about the picture and throw the ball to the opposite team. After 3 minutes, the team that has the ball loses the game.	A ball, projector
Whisper game	Students can use and understand a range of vocabulary related to the topic.	Teacher puts the vocabulary words on two sides of the board. Students form two teams and stand in line. The last student in line chooses a vocabulary word, (e.g. I'd like to try…bungee jumping) and whispers it to their teammates. The first in line erases the word from the board and goes back to the end of the line. The first team to erase all the words wins.	Board sponge/team