

THE IMPACT OF RECESS BREAKS IN THE LEARNING PROCESS ON PRIMARY SCHOOL STUDENTS' CONCENTRATION SKILLS

Ilva Markus-Narvila¹, Maija Ročāne²
^{1,2}Liepaja University, Latvia

Abstract. Nowadays one of the major problems in education is the lack of a specific strategy for the implementation of breaks (recess policy) in an educational institution. The development of such a strategy in the majority of cases is different for every school, as evaluating several factors is required, e.g., the age of students, interests, learning needs and progress, the location and specialization of the school, etc. However, students' awareness of the necessity for individual recess strategy gains importance as well. The research aim is to investigate and clarify the possibilities and necessity of recess breaks in primary school. There are theoretical research methods and empirical research methods (students', teachers' and parents' surveys), data processing and analysis methods (quantitative, graphical representation of data, data analysis using IBM SPSS v.22 predictive analytics and statistical analysis software package) used in the research. The analysis of students' survey emphasized that students more often prefer listening to music or socializing during breaks. While parents' questionnaire highlighted the necessity for their offsprings to spend more time outside in fresh air. They mean it would help their children to better concentrate in lessons. While teachers' survey analysis revealed that students concentration is better if students are more interested in a particular subject.

Keywords: ability to concentrate; recess break; individual recess strategy; learning process; a student

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Introduction

One of the major problems in modern education is the lack of a specific strategy for the implementation of recess policy. The development of such a strategy is different for every school, evaluating several factors, such as the age of students, interests and learning needs, the location and specialization of the school, etc. To create such a strategy, it is also important to ask students: "Why do you need a break?" (Wood & Freeman-Loftis, 2015, 177).

The topicality of the recess breaks can be emphasized by the facts that:

- the course of the learning process is planned mainly for learning process in the lessons, while students most often spend their time in breaks not realizing that they are having a rest and how to recess during the breaks for everyone individually and all together. Students' interest, learning habits and style, strengths, learning goals etc. are unique and different, therefore, authentic activities during recess breaks also become especially relevant, as well as the need to integrate recess breaks into individual learning habits.
- the empirical experience of the authors of the study also allows us to conclude that, often teachers' attention is paid on the leading learning process within the lessons, but the time spent by students during the breaks is "up to the students themselves".
- there is a lack of understanding of the necessity for recess breaks, the possibilities, and opportunities to spend breaks.
- we live in an era of technological development. Smart devices are widely used both in free time and in the learning process. Also, during breaks, students often spend their free time using smart devices, which, in turn, reduces students' ability

to concentrate, which is one of the determining factors that positively affects student learning.

Thus, the research aim is to investigate and clarify the possibilities and necessity of recess breaks in primary school.

Research methodology:

- theoretical research methods (analysis of pedagogical and psychological literature to get acquainted with the possibilities of implementing recess breaks in the learning process and the need for recess breaks to promote concentration).
- empirical research methods (surveys of students, teachers, and parents), data processing and analysis methods (quantitative, graphical representation of data, data analysis using IBM SPSS v.22. predictive analytics and statistical analysis software package, Mann – Whitney U tests, Spearman’s Rho correlation, Kruskal-Wallis’s test).

Necessity of the recess breaks

The project “*Competence approach in the curriculum*” not only highlights the responsibility for one’s own learning and its planning, monitoring and evaluating one’s achievements, but also the need to “plan time for work and recess, to achieve own goals” (Skola2030, n.d., 76). Recess breaks are essential part of the learning process and their benefits are not only the psychological well-being of students. Although recess breaks are especially important for younger learners; they are also essential for improving concentration skills for older students. Murray et al. (2013) emphasizes that if a short break for recess is not possible during the lesson due to lack of time, in older classes it is useful more often to change teaching strategies during the lesson, for example, organizing group work, enriching the learning process with technologies, etc. (Murray, Ramstetter, Devore et al., 2013).

Kohl, Cook (2013) believe that recess breaks can be an effective way to reduce disruptive behavior and promote the ability to stay on task and focus on academic work. Breaks, whether in the learning process, help to improve physical readiness, which in turn improves cognitive ability (Kohl & Cook, 2013).

Recess breaks are necessary to optimize a child’s social, emotional, physical and cognitive development. Pellegrini & Bjorklund (1997) believe that the more intense the student’s cognitive load has been, the more important is a break for recess after it.

However, students often spend time during breaks without thinking or realizing the need for rest, using social networks and playing games on smart devices. The use of social networks significantly increases students’ stress and creates a sense of anxiety. The study “*Brief and rare mental 'breaks' keep you focused*” (2011) analyses differences between students who use and do not use smart devices during breaks. 83 % of students who actively use social networks admit that their lives are “*quite stressful*” or “*very stressful*”. The results of the study also emphasize that the use of social networks reduces students’ ability to concentrate and learn effectively (Atsunori & Lleras, 2011). On the other hand, in the study “*Your Brain on Facebook*” (2011) points out that when communicating with people online, we usually do not get the hormones of happiness that occur when we interact with someone in real time (Rock, 2012).

The learning process can be stressful and intense. Therefore, it is essential to evaluate and make useful, valuable time during breaks. Thus, the questions: *How would it be more meaningful to spend recess breaks at school?* and *What are the prerequisites for organizing full-fledged rest recess breaks at school?* become relevant. Murray et al. (2013) believe that such breaks should be considered as the student’s personal time and recess breaks should not be spent, for example, to continue the learning process started in class. Also, Ramstetter et al.

(2010) emphasize that recess breaks during the learning process should be considered as the student's personal time. However, at the same time, it should also be highlighted that without students' understanding of individual break for recess strategy, they can choose to use smart devices non-stop, which does not contribute to the ability to concentrate. The research "*The Crucial Role of Recess in School*" (2013) states that the result of the learning process largely depends on recess breaks, their frequency and duration, which should be sufficient so that the students can concentrate for learning (Murray, et al. 2013). The research also highlights a free play method as very effective for such breaks (Murray, et al. 2013).

It must be admitted that recess breaks are highly important for every person, regardless of age and field of work. However, recess breaks are essential in the first stage of primary education (Ramstetter, Murray, & Garner, 2010; Kohl, Cook, 2013). This range of age varies in different countries from the age of 5-12, which corresponds to grades 1-3 and 4-6 of basic education stages in the Latvian education system. Thus, the focus of the research is exactly on the possibilities of the implementation of recess breaks in primary school.

Historical aspects of recess breaks in Latvia

Looking at the historical aspects of the learning process, it can be considered that recess breaks historically have not been valued. E.g., in a medieval school, the learning process could be compared to technical and professional training (Kestere, 2005, 41). Also, the school day for students was very long- around 12, 13 hours without official holidays. During this period of history, students could have had a rest only on Cristian religious holidays. Strict discipline and orders were important in the organization of learning in schools. Studies also took place in monastery school, where students did home duties-cooking, tilling the land, herding cattle, etc., as well (Kestere, 2005). During this time, schools emphasized discipline, and recess was not considered an important part of the learning process.

It was in the 20th century that the importance of breaks was brought up in Latvian schools. Miķelsons (1941) emphasizes that "the school regime must provide for the procedure for accompanying breaks, as well as the procedure for children's arrival and leaving the school" (Miķelsons, 1941), highlighting that "disturbing, noisy games are not recommended during breaks: they disturb the students' concentration in the class after the bell. During the long breaks, reading rooms should be opened or special corners organized for reading and quiet games, where students could find interesting activities for themselves" (Miķelsons, 1941). On the other hand, Ozols (1944) expresses his belief that "students' answers in tests are better and more reliable when tests in individual subjects take place after longer breaks that they take place immediately at the same time" (Ozols, 1944).

Miķelsons also emphasizes the need for fresh air and outdoor walks, stressing that "during long breaks, it is highly desirable for students to go outside" (Miķelsons, 1941). Also, in the teachers' conference of August 1988, a statement was made about the possibilities of spending free time emphasizing that students should go out to play in nature during breaks because good environment should be created for children, so they feel good at school (Grobiņš, 1988).

Opportunities and necessity of recess breaks

Break can be defined as the time between lessons that is regulated by school management so that students can rest by engaging in various leisure activities, including physical activities. Researchers also emphasize that these activities can also be self-directed by students (Parrish, Okely, Stanley, & Ridgers, 2013).

Breaks are critical for memory consolidation, self-reflection and goal setting, development of literacy and cognitive abilities, as well as skills to generate and understand new ideas (Immordino-Yang, Christodoulou, & Singh, 2012). Also, Müller et al. emphasizes the importance of recess breaks in promoting reading skills and also “joy of reading” (Müller, Otto, Sawitzki et al., 2012).

Whereas the American Association of Pediatrics (2013) emphasizes that moments of rest in the learning process, or breaks, are necessary to improve students’ social skills, emotional and physical abilities, as well as cognitive development (The American Association of Pediatrics, 2013).

Cooperation and interaction are very important during breaks as they facilitate communication, sharing and problem solving (Murray, et al. 2013). That is why free play becomes especially useful during breaks, because by playing together, students improve cooperation skills and skills of solving conflict and problem. They also learn to self-regulate their emotions and behavior. Also, Ramstetter et al. (2010) highlights the need for students’ self-selected activities during breaks, or the need for unstructured breaks. It is the time when students relax, choose the way they want to relax from learning, for example, communicate with each other, spend time alone, listen to music, engage in physical activities, etc. In the 1st-6th grades free play also becomes relevant, which provides a unique contribution to the creative, social and emotional development of the student. However, at the same time, the awareness of various recess opportunities becomes relevant, i.e., so that students can plan and meaningfully spend their time during recess breaks, the creation and improvement of own individual strategies for such breaks becomes important.

Barros, Silver, Stein (2009) research “*School Recess and Group Classroom Behavior*” summarizes the observations of teachers, which emphasize that allowing children to take a break improves attention, and the number of behavioral problems decreases (Barros, Silver, & Stein, 2009). Therefore, devoting attention only to the learning and reducing time for recess is counterproductive. Recess breaks have traditionally been an integral part of the school day. However, recently many schools have been reducing recess time (Ramstetter et al., 2010).

To organize recess breaks more productive provision of appropriate premises and equipment; update and enforcement of safety regulations and teachers’ presence, with intervention only when necessary, becomes essential (The American Association of Pediatrics, 2013). While, Murray, et al. (2013) believe that the teacher’s presence is essential not only in structured but also in unstructured breaks. Patrick, Kaplan, & Ryan (2011) emphasize the importance of a positive emotional background for providing a full-fledged rest, thus emphasizing the professional actions of the teacher in promoting such a background (Patrick, Kaplan, & Ryan, 2011). Properly organised recess provides positive experiences for students, e.g. social and cognitive benefits. However, if the recess time is carried out without supervision, bullying can cause obstacles to prevent positive outcomes. Therefore, students’ safety becomes an important prerequisite in the process of recess implementation (Kroeker, 2022).

Amutio (2006) admits that walking, enjoying nature, sleep and regular physical activities ensure full relaxation (Amutio, 2006). Pellegrini & Smith believe that it is essential that breaks take place in the fresh air (Pellegrini & Smith, 1993, 51). Outdoor breaks are regularly implemented in Finnish schools where students have a 75-minute break every school day, most often outdoors. During these breaks students engage in both practical lessons and physical activities to promote a healthy lifestyle. Analyzing the importance of physical activities, it can also be considered that students engage in physical activities in sports and health lessons, but recess breaks cannot be replaced by sports lessons, because both breaks and sports classes promote a healthy lifestyle and improve learning habits (Ramstetter

et al., 2010). There are also educational institutions in Latvia that have planned at least one break that is longer in order to organize outdoor activities, where there are sports activities both: guided by the teacher and students` self-guided. These outdoor breaks can be also short walks to promote movement and relaxation. During outdoor breaks students can make observations about processes in nature in different seasons etc. Thus, recess breaks can become a learning environment as well (Ramstetter et al., 2010); (Parrish, Okely, Stanley, & Ridgers, 2013). Students` questionnaire analysis done within the current research (A Mann-Whitney U test) revealed that respondents who think that they are in the most of the cases able to concentrate during learning process, are more likely to agree with the statement that they want to do physical activity outdoors during breaks (Median 4, IQR 2) than respondents who quite often are unable to concentrate (Median 3, IQR 2.5, $p=0.002$).

Wood & Freeman -Loftis (2015) believe that it is important for students to interact with other students during the recess breaks, while emphasizing that it is essential to plan activities during recess breaks. For example, the teacher can teach the students a new game or bring up a topic during the break. Structured breaks also provide an opportunity to build a positive relationship between the student and the teacher (Wood & Freeman-Loftis, 2015). While an unstructured break greatly enhances creativity (Murray, et al. 2013). Free play (Murray, et al. 2013) and student self-directed activities (Parrish, Okely, Stanley, & Ridgers, 2013) also become particularly useful for recess during breaks.

However, if during the break students spend their time doing self-selected activities indoors or outdoors, the presence of the teacher becomes especially important. The presence of a teacher can reduce and prevent inappropriate and aggressive behavior, which can manifest as both physical and emotional abuse.

Ability to concentrate as a prerequisite for a successful learning process

The project “*School2030*” emphasizes the need for breaks in the learning process to develop students` concentration skills (Skola2030, 2018). The ability to concentrate can be described as focusing attention on the performance of a specific task to achieve a goal. The ability to concentrate promotes productivity and improves the ability to learn, remember information much faster and easier, as well as control one`s own thinking processes (Jerrell, McIntyre, & Park, 2015). When a person concentrates, he directs himself towards a specific goal without thinking or focusing on external irritants. Concentration is one of the most important aspects of a successful learning process (Sampaio & Almeida, 2018). Belickis emphasizes that “concentration is primarily a mental process that takes over the child`s entire personality, and at the end of this mental process, children radiate joy and happiness” (Belickis, 2001, 82).

Sampaio and Almeida (2018) also declare that the meaningful use of technologies in the learning process, including recess breaks, increases students` motivation and their ability to concentrate. However, to achieve the goal of promoting students` ability to concentrate, cooperation between the teacher and students becomes important (Sampaio & Almeida, 2018, 1560). Zoogman, Goldberg, Hoyt, & Miller (2014) consider that activities aimed at mindfulness practice become essential during the breaks (such as breathing exercises, self-reflection, etc.) to promote concentration skills (Zoogman, Goldberg, Hoyt, & Miller, 2014). Mindfulness practices also activate students` internal resources (Zenner, Herrnleben-Kurz, & Walach, 2014). While Amutio (2016) emphasizes the need for physical activities and the influence of the social environment on developing concentration skills.

Analysis of the impact of recess breaks on students' ability to concentrate

To clarify the impact of recess breaks on students' concentration abilities, students (4th to 9th grade students were interviewed (N=107)), teachers (N=20) and parents (N=64) surveys were carried out in order to find out the respondents' opinion about the quality of breaks and presence of recess in them. Only 20 primary school teachers participated in the survey (119 primary school teachers were asked to answer the questions of the questionnaire)). Survey was carried out from 16/12/2022 till 11/01/2023.

Analysing parents' answers about opportunities to spend breaks in the best way, the most often (35 times) walks, movement and physical activities were mentioned. Also parents have mentioned interaction, talking, communicating with peers, etc. (20 times); the importance of breathing fresh air was highlighted 19 times. 13 parents admitted that they would prefer their children not to use smart devices at all during the breaks. Majority of the parents believe that the activities during the breaks should involve being active: wide variety of physical activities, while only 5 parents have mentioned that their child/children needs/need silence. Less than a half of the parents believe that a break without studying, without tension and special organization is necessary, while ¼ of the respondents have an opposite opinion: during the break students should repeat the material for the next lesson, check whether the homework has been completed and prepare for the next lesson.

Analysis of students' questionnaire (The Mann-Whitney U test) reveal that respondents who believe that time during the breaks is not exactly a time for recess rate their ability to concentrate in the learning process lower (Median 7, IQR 2.5) than respondents who believe that breaks should be spent only for the recess (Median 8, IQR 2.5, $p=0.009$). This confirms theoretical finding on the need for mindfulness practice (Zoogman et al. 2014) to improve students' understanding of opportunities for the most productive way to spend a break as well as about learning itself. While the Kurskal-Wallis test revealed that respondents who believe that using of smart devices are not a quality way of spending the break study at a lower grade (Median grade 7, IQR 2) than the respondents who believe that using of smart devices offers a quality time during the breaks (Median grade 8, IQR 1.5, $p=0.041$). At the same time Spearman correlation revealed a negative correlation between the respondent's class and the ability to concentrate during lessons ($\rho=-0.342$, $p<0.001$): the subjective evaluation of the ability to concentrate during lessons decreases as the respondent's class increases.

Teachers' questionnaire analysis highlights the respondents opinion that students spend too much time on their gadgets. Some respondents even admitted that their students "do not let their smartphones out of their hands during breaks" and therefore "students are unable to concentrate during the lessons. 7 respondents-teachers believe that the main reason why students are unable to concentrate during lessons is the lack of interest. 4 respondents believe that students keep thinking about the issues not related to the topic of learning (e.g., social networks, games and other issues related to using of gadgets were mentioned by the respondents). 3 respondents mentioned that students are already tired in the morning when they arrive to school and thereone of the reasons could be the lack of sleep.

Conclusions

Recess breaks can be structured or unstructured time for rest. Breaks can be spent on doing sports, playing chess, playing and socialising with peers indoors or outdoors. It must be admitted that there is a lack of understanding of the necessity for recess breaks, as well as the possibilities, and opportunities to spend breaks as teacher's attention can be paid only on knowledge acquisition during the lessons, while the time during the breaks quite often is up to the students themselves.

Nowadays, it is becoming important for students to take responsibility and to be actively involved not only in their own learning process, but in the planning of the breaks as well. Recess breaks are becoming important to enhance students' concentration and motivation. The necessity for individual recess strategy gains importance as well. It is essential to develop a range of opportunities at school for taking recess breaks, thus, integrating recess breaks into individual learning habits.

The analysis of students' survey has emphasized that students more often prefer listening to music or socializing during the recess breaks. While parents' questionnaire highlighted the necessity for their offsprings to spend more time outside in fresh air, which could help their children to better concentrate during the lessons. While teachers' survey analysis revealed that students' concentration is better if students are more interested in a particular subject.

Awareness of the different opportunities for spending time during the recess breaks, e.g. different authentic activities, becomes an important issue. Such activities include the development and improvement of individual strategies of breaks, as well as authentic activities for recess. Thus, the necessity for individual recess strategy gains importance as students' interest, learning habits and style, strengths, learning goals etc. are unique and different.

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