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The dynamics of learning engagement and its relationship with teachers’ classroom practices in primary school

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ABSTRACT

The current study was part of a larger project which examined teachers’ classroom practices and relationships with students’ learning engagement in primary-school education in Estonia. The focus was the role of autonomy supportive and structured teaching on learning engagement. Two primary-school teachers and their 46 students were selected for this study. The aim of the study was to explore how teachers’ classroom practices influence students’ learning engagement over two years during grade two and grade four of the educational system. Three trained observers rated classroom practices and students self-reported learning engagement. The results highlight primary students’ high-learning engagement, and did not confirm an expectation that low-autonomy-supportive teaching results in low-learning engagement in primary school.

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KEYWORDS

Autonomy-supportive teaching; structured teaching; learning engagement; primary school; longitudinal study

Introduction

Self-determination theory (SDT; Deci and Ryan 2000) posits that the fostering of students’ needs for autonomy, relatedness and competence will result in their higher engagement and self-regulation skills. Learning engagement is critical in classroom settings as it expresses a student’s behavioural, cognitive and emotional condition during learning activity: behavioural engagement refers to participation in class, on-task behaviour and asking questions, cognitive engagement refers to psychological investment in learning, being strategic and preferring challenging work and emotional engagement refers to students’ emotional reactions i.e. happiness, anxiety, interest (Fredricks, Blumenfeld, and Paris 2004). Cognitive engagement is highly dependent on the interaction between students and a school environment, namely daily pedagogical practices (Pietarinen, Soini, and Pyhältö 2014). Teachers’ words and actions can play an effective and extensive role in students’ motivation to learn, influencing their learning behaviour and academic engagement (Stefanou et al. 2004). Engagement predicts students’ achievement (Skinner et al. 2008), completion of school or dropping out (Connell, Spencer, and Aber 1994).

Many studies of large samples (Jang, Reeve, and Deci 2010; Vansteenkiste et al. 2012; Hospel and Galand 2016) have been carried out in middle and high school which have investigated autonomy-supportive and structured teaching effects on learning engagement. The majority of the results have reported a positive correlation between autonomy support and engagement, also between structured teaching and engagement. On the other hand, studies (e.g. Fredricks and Eccles 2002) have found signs of disengagement across all grade levels i.e. boredom, passivity during lessons, skipping school, lack of effort, disruptive behaviour. Furthermore, the transition from primary school to middle school is also characterised by a declining quality of teacher–student relations (Fredricks, Blumenfeld,
and Paris 2004). As a result, 40–60% of students are disengaged from school by the time they reach high school (Klem and Connell 2004). Thus, it is important to understand the effect of teachers’ classroom practices on learning engagement in primary school as the source of disengagement is believed to be there (Hornstra et al. 2013).

Learning engagement is important in the early years of schooling since it has long-term effects for students and it is also a predictor of dropping out (Fredricks, Blumenfeld, and Paris 2004). Hence, the expectation of our study was that students’ engagement would be lower overall within two years (during grades two and four of school) and a teacher with low-autonomy-supportive teaching style would have more disengaged students.

In Estonia, school education is mandatory for children until they have completed basic education (grades 1 to 9) or until they are 17 years old. Usually, children begin with school education at the age of 6–7 and before grade 1 attend kindergarten. In primary school, students have the same primary teacher from grades 1–4 and by the end of grade 4 are 9–10 years old. Primary teachers teach all main subjects throughout the four years: language, mathematics, science, social studies, art and handicrafts, physical education and music. A significant change for students is during the transition from primary school to middle school. Students no longer have one main teacher but instead different teachers for all subjects. Such change can cause teacher–student relations to descend (Fredricks, Blumenfeld, and Paris 2004).

Although not many studies confirm the beginning of disengagement in primary school, Hornstra et al. (2013) find that it is likely to start at the primary stage of education. Therefore, the aim of the study was to explore how teachers’ classroom practices influence students’ learning engagement. Classroom observation sheets (Jang, Reeve, and Deci 2010) to identify teachers’ classroom practices and students’ self-report questionnaire of engagement (Fredricks, Blumenfeld, and Paris 2004) were used to explore effects of teachers’ classroom practices on learning engagement.

**Autonomy support**

SDT (Ryan and Deci 2000) ranges teacher’s motivating styles from highly controlling to highly autonomy supportive. Ryan and Deci posit that autonomy-supportive teachers promote and encourage students during learning activities and contrast SDT teaching to highly controlling teachers who often interfere between students’ self-determined intrinsic motives and classroom exercise. Autonomy-supportive teachers facilitate learning and activities by nurturing students’ interests and needs, creating opportunities and giving choices to students which create an atmosphere in the classroom where students are guided by inner motives. On the other hand, teachers who are relatively controlling impede students’ inner motives because they instruct students in a way which defines what students should think, feel and do. In order to achieve that, controlling teachers are prone to rely on extrinsic motives and use pressuring or teacher-centred speech (Reeve et al. 2004).

Assor et al. (2005) contrasted teacher’s motivating styles into autonomy supportive and directly controlling, where directly controlling teacher seeks to fully control, instantly change student behaviours and opinions if they do not match the teacher’s. Their results indicated that directly controlling teacher behaviour has a negative effect on students’ emotions, motivational orientations and engagement styles. Studies (Kaplan, Assor, and Roth 2003; Poom-Valickis et al. 2016) reveal that the frequency of controlling teacher behaviour increases in middle and high school and, although most primary-school teachers are autonomy supportive, controlling behaviour also has a negative effect on primary students.

A study in Estonia by Poom-Valickis et al. (2016) found primary students’ engagement to be significantly higher than middle-school students’ engagement because primary-school teachers used autonomy-supportive teaching methods more often than middle-school teachers. Girls self-reported higher engagement in both school levels in this same study. The study by Poom-Valickis et al. (2016) used students’ self-report questionnaire (Fredricks, Blumenfeld, and Paris 2004). Research in Belgium by Hospel and Galand (2016) also found girls’ engagement in middle school to be higher than boys’,
students in this study assessed their perceptions of teacher autonomy support and structure and their engagement by a questionnaire. Teacher autonomy support was seen to predict cognitive engagement in primary school (Poom-Valickis et al. 2016) and emotional engagement in middle school (Hospel and Galand 2016).

Assor, Kaplan, and Roth (2002) posit that to foster the relevance of schoolwork for students, teachers need to understand student’s goals, interests and needs. After analysing the schoolwork, teachers can link them with school tasks (Assor, Kaplan, and Roth 2002). More specifically, autonomy-supportive teachers listen to their students and allow them to handle instructional materials and ideas more often. They were also more likely to understood students’ emotional state – they would, for example, ask what a student wants, responded to questions and listen to students’ perspectives. They would give hints but not solutions and they would not use directives (Stefanou et al. 2004). The most crucial predictors of student autonomy, according to the students themselves, are the promotion of relevance and the suppression of critique (Assor, Kaplan, and Roth 2002).

Based on the premise that teacher’s classroom practices also promote student academic achievement and feelings of competence, a longitudinal study in the USA in first grade by Perry, Donohue, and Weinstein (2007) showed that teachers who nurtured students’ interests and initiative, provided challenging opportunities and created positive social relationships, had a higher percentage of students who met high-academic standards by the end of the school year.

A contrasting comparative study in the Netherlands by Stroet, Opendakker, and Minnaert (2015) investigated need supportive teaching practices in traditional class and social constructivist class. Their findings revealed that teachers in a social constructivist class spent significantly more time using autonomy-supportive practices during class and individual/small group instruction. During individual/small group instruction, more time was spent on structure and very little time on autonomy thwart and disaffection than in traditional class. Teachers did not promote chaos, autonomy thwart nor disaffection during class instruction in either class. Also, both types of teacher often answered students’ questions and treated their students fairly. The main differences between the teachers and their practices stemmed from their pedagogical practices. The traditional teachers took the responsibility for students learning on themselves and did not have time for individual guidance or to initiate discussions on the value. The social constructivist teachers shared responsibility for students learning with the students.

Although many teachers acknowledge the importance of autonomy-supportive teaching, in many schools the structure and the resources of the school limit the extent to which students can be provided with highly interesting and relevant tasks (Assor, Kaplan, and Roth 2002).

**Structured teaching**

Students’ learning engagement is not guaranteed solely by autonomy-supportive practices: structured teaching is just as important (Jang, Reeve, and Deci 2010). The study in the USA by Skinner et al. (2008) of high-school students reported strong and positive association between students’ classroom engagement and teachers’ instructional styles. Students filled out self-report questionnaires which were administered by trained interviewers. Structured teaching consisted of clear instructions, the communication of information about teacher’s expectations and ways of effectively achieving wanted educational aims (Skinner et al. 1998). Strong structure stands in opposition to chaos where teachers are contradictory or puzzling, do not express clear instructions and directions and expect positive outcomes without explaining how students should attain those (Jang, Reeve, and Deci 2010).

Fox (2014) underlines a problem related to instructional strategies, more specifically research-based instructional strategies, which have been proven to enhance students’ memory and skills to use what they have been learning. Fox stresses that these strategies are used inconsistently in classrooms and therefore student achievement is hindered. His findings reveal, for example, that teachers
would, in 50% of lessons, identify a clear learning goal at the beginning of the lesson. Also, teachers would let students reflect or summarise at the end of the lesson less than 33% of the time.

From a motivational point of view, teacher-provided structure helps students to develop a sense of perceived control over school outcomes (Skinner et al. 2008). Thus, when teachers communicate clear expectations and directions, take the lead during some instructional activity, provide strong guidance during a lesson, provide detailed directions when needed, schedule and organise student activities, offer task-focused and personal control-enhancing feedback and provide consistency in the lesson, student-learning engagement is promoted (Jang, Reeve, and Deci 2010). The results of the study in Germany by Schroeder et al. (2011) confirm this – more engagement was reported by their students when teachers taught clear strategies. Students in this study self-reported their engagement by a four-item questionnaire which focused on the emotional aspect.

Another study conducted in high schools in Belgium by Vansteenkiste et al. (2012) divided teachers into four groups according to how students perceived them: high-autonomy supportive – clear expectations, low autonomy supportive – vague expectations, high-autonomy supportive and clear expectations. Students in the first group displayed the most flexible outcomes in academic and social aspects.

Structured teaching does not have as strong effect on students’ engagement in primary school as it has in middle school. Students in highly structured lessons report higher behavioural and cognitive engagement in middle school but not high-emotional engagement. Primary-school students, however, reported higher engagement overall than middle-school students (Poom-Valickis et al. 2016). Hospel and Galand (2016) produced similar findings higher structure at classroom level was correlated positively with higher student behavioural engagement. Hospel and Galand also found that combined high levels of autonomy support and structure are associated with higher emotional engagement.

A study in Estonia by Timoštšuk and Jaanila (2015) in grade 4 science lessons suggests a context-specific and student-oriented balanced teaching style as the predictor of higher learning engagement. Balanced teaching means that a teacher combines different teaching methods depending on the subject and students in order to support students learning and development. In this study, however, the lowest negative and neutral scores of self-reported engagements were also related with balanced teaching.

Method

Although not many studies confirm the beginning of disengagement in primary school, Hornstra et al. (2013) find that it is likely to start at the primary stage of education. Therefore, the aim of the study was to explore how teachers’ classroom practices influence students’ learning engagement over two years at primary school. Expectations were that students would report lower engagement overall and that low-autonomy-supportive teaching would result in lower engagement than high-autonomy-supportive teaching.

Participants

The teachers observed were both female with one having teaching experience for more than 10 years and the other for 4 years. In grade two, students were 7–8 years old and by the end of grade four 9–10 years old.

This study is Stage 3 of a larger project. All three stages are based on research conducted with the same teachers and students. A breakdown of the process is:

Stage 1: In 2014 11 second grade primary teachers’ classroom practices – autonomy-supportive and structured teaching – were observed and their students’ (N = 224) learning engagement self-reported (Näkk and Timoštšuk 2015). Teachers’ autonomy-supportive teaching content varied
from low-autonomy supportive to high-autonomy supportive. All 11 teachers applied high-structured teaching, thus this variable was not used for the selection of teachers. Students from every class reported high-learning engagement. Based on the results, the highest and lowest autonomy-supportive teachers and their students were selected for the detailed analysis of teacher’s classroom practices and its relationship with their students’ self-reported engagement in the next stage of the study.

Stage 2: A comparative analysis of the highest and the lowest autonomy-supportive teacher with the addition of a balanced teacher and all their students’ self-reported engagement was conducted when the students were in their second grade in 2014. The results of the teachers’ autonomy-supportive teaching styles differed the most in relying on different motivational sources, whereas low-autonomy-supportive teacher results relied on extrinsic sources. Balanced style teacher alternated between intrinsic and extrinsic motivation sources depending on the context. The high-autonomy-supportive teacher analysis relied on intrinsic sources of motivation (Näkk and Timoštšuk 2016). Structured teaching scores were high for all three teacher categories, even though the balanced teacher used commanding, confident speech and did not offer choices. A detailed analysis of the student engagement in all the three classes showed a striking difference in cognitive and emotional engagement, the lowest being reported in the low-autonomy-supportive teacher’s class.

Stage 3: A longitudinal case study of three selected teachers and their students based on Stage 2 was conducted when the students were in grade four (in 2016) using classroom observation sheets to distinguish teachers’ classroom practices and students’ self-reported engagement questionnaire. Only two teachers (the lowest and the highest autonomy supportive teacher), however, accepted the request to take part. Observational data and self-reports from this stage were analysed and a comparative analysis of Stage 2 and Stage 3 data was conducted.

Data collection instruments

The same data collection instruments were used in all three phases. Teachers were rated based on Jang, Reeve, and Deci’s (2010) autonomy supportive and structured teaching observation sheets. Both rating sheets consisted of three clusters of items and their bipolar factors which the observers assessed on a 1–7 Likert scale.

The autonomy-supportive teaching rating sheet’s bipolar factors were:

1. Relying on extrinsic versus intrinsic motivational resources.
2. Use of controlling language versus informative language.
3. Countering or accepting and acknowledging students’ negative affect.

The structured teaching rating sheet’s bipolar factors were:

1. Confusing, inconsistent, unclear instructions versus clear and comprehensible instructions at the start of the lesson.
2. Weak guidance versus strong guidance during the lesson.
3. Confusing or lack of feedback versus constructive feedback during the lesson.

Fredricks, Blumenfeld, and Paris’s (2004) engagement construct was used for students’ self-reported questionnaire. In which two first statements measured behavioural engagement, third statement measured cognitive and fourth emotional engagement. All statements started ‘During this class …’ and ended with:

1. I paid attention.
2. I worked very hard.
(3) I tried to learn as much as I could.
(4) I enjoyed this class.

The original 1–7-point Likert scale (Fredricks, Blumenfeld, and Paris 2004) was modified to a 1 (not at all true) to a 5 (very true)-point scale since it would be better understood by Estonian students because it follows the Estonian 1–5-point grading system. From grades 2–12 students' academic results, i.e. tests, independent work, group work etc. are evaluated on a scale of 1 (very poor) to 5 (excellent). Students were encouraged to be as honest as possible when rating themselves.

In addition, observers’ notes, lessons’ typology, activities in lessons and subject were also taken into account in order to clarify observer ratings and to better understand teachers' and students’ classroom behaviour. Observers were asked to take notes of cases and situations, even direct speech, if they found it remarkable and helpful to describe the lesson.

**Data collection and analysis**

The goal of this study was to explore how different classroom practices – low, balanced and high-autonomy-supportive teaching style influence learning engagement in a two-year-period in primary school.

Before commencing the study, it was explained to the teachers selected for participation that the study was a follow-up to a previous study held in the same class two years ago and was intended to explore and analyse the differences that had taken place between then and now. Two observers from the university would visit their classroom to observe lessons and question their students after each lesson. Only the lowest and highest autonomy-supportive teacher, however, accepted the request.

The observers arrived approximately five minutes before the start of lessons and observed two lessons for each class. They sat at the back of the classroom and did not move during lessons. The lessons lasted 45 minutes (the usual time for a lesson in Estonia) and teachers were asked to spare around three minutes at the end of each lesson in order to give guidance to students for the completion of the self-reported questionnaires (Fredricks, Blumenfeld, and Paris 2004) that would report the students’ engagement in each observed lesson. Students were asked to write their first name, mark their gender and only write appropriate score for short statements about the lesson. Unlike in the Step 1 study (Näkk and Timoštšuk 2015), the rating scale was not written on the blackboard and students were instructed verbally instead.

The data analysis consisted of four stages.

(1) Collected data was sorted by the teacher and students’ self-reports were arranged to match their teacher.
(2) Observational data was analysed. Teachers’ scores were summarised and an overall average score calculated for autonomy-supportive and structured teaching. Those scores were divided into low-autonomy-supportive or structured teaching (1–3), balanced autonomy-supportive or structured teaching (4), high-autonomy-supportive or structured teaching (5–7).
(3) Students’ self-reports were analysed according to each statement and a summarised average score calculated for each class. A summarised average score for boys and girls engagement was also calculated for both classes. Scores were divided into low engagement (1–2), medium engagement (3) and high engagement (4–5).
(4) Comparison and detailed analysis of previous and current study data. A comparison was made of teachers’ classroom practices (Table 1), students’ self-reports by class (Table 2) and the differences in boys and girls self-reported engagement (Table 3). Observers’ comments were also used to better understand the results.

Although two lessons from each class were observed, only one lesson of each class was used for analysis. When guidance for the students’ self-reported questionnaire in low-autonomy-supportive teacher’s class was given, the observer reported that the teacher interfered with the statements.
Also, the teacher had commented that students sitting close to the teacher give themselves higher scores because the teacher could see what they are writing. Therefore, a decision was made not to use data from that lesson. The high-autonomy-supportive teacher did not interfere during the gui-
dance sessions at all.

Results

The aim of the study was to explore how teachers’ classroom practices influence students’ learning engagement within a two-year-period. The same method was used in both Stage 1 conducted in 2014 and in Stage 2 conducted in 2016 – namely classroom observation and students’ self-reported questionnaire (cf. Näkk and Timoššuk 2015). The expectations were that the teacher with a low-autonomy-supportive teaching style would have more disengaged students and that students’ learning engagement would be lower. A comparison of results from Stage 1 (Näkk and Timoššuk 2015) and Stage 3 are presented for autonomy-supportive and structured teaching (Table 1), students’ self-reported learning engagement (Table 2) and a comparison of boys’ and girls’ learning engagement (Table 3).

**Autonomy-supportive and structured teaching**

The biggest difference in Stage 1 (conducted in 2014 when the students were in the second grade of their education) for the two teachers was in the category of autonomy-supportive teaching style. The

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<tr>
<th>Table 1. Primary teachers’ classroom practices.</th>
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<tbody>
<tr>
<td>Classroom practice</td>
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<tr>
<td>I. Autonomy support</td>
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<tr>
<td>Motivational sources</td>
</tr>
<tr>
<td>Language</td>
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<tr>
<td>Negativity</td>
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<td>Average</td>
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<tr>
<td>II. Structured teaching</td>
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<tr>
<td>Introduction</td>
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<td>Guidance</td>
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<td>Feedback</td>
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<th>Table 2. Student’s self-reported learning engagement.</th>
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<td>I paid attention</td>
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<tr>
<td>I worked very hard</td>
</tr>
<tr>
<td>I tried to learn as much as I could</td>
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<tr>
<td>I enjoyed this class</td>
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<tr>
<td>Class average</td>
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<th>Table 3. Boys’ and girls’ self-reported engagement.</th>
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<tr>
<td>Boys</td>
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<tr>
<td>I paid attention</td>
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<td>I worked very hard</td>
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<tr>
<td>I tried to learn as much as I could</td>
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<tr>
<td>I enjoyed this class</td>
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<td>Average</td>
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low-autonomy-supportive teacher’s average score was 3.9 and the high-autonomy-supportive teacher’s average score was 6.7. The main difference was usage of different motivational sources. The low-autonomy-supportive teacher relied on extrinsic sources and the high-autonomy-supportive teacher relied on intrinsic sources. Also in Stage 1, both teachers scored high for structured teaching: the low –autonomy-supportive teacher’s mean score was 6.5 and the high-autonomy-supportive teacher’s score 6.7.

The results of the Stage 2 study (Table 1) reveal that, based on their average scores, both teachers have remained low- or high-autonomy-supportive practitioners. Although the low-autonomy-supportive teacher’s average score for relying on motivational sources has shifted to balanced, her negativity acceptance has declined to 2, and her average score for autonomy support has declined to 3.3. The high-autonomy-supportive teacher’s average scores for all three items of autonomy support have slightly declined but remain high with an average score of 6.

In Stage 2 structured teaching scores for the two teachers differ significantly more than in Stage 1. The low-autonomy-supportive teacher scored lower whereas the high-autonomy-supportive teacher scored higher for all three items. The low-autonomy-supportive teacher’s introduction and feedback scores decreased the most from 6.5 to 4, hence her average score for structured teaching was 4.6. The high-autonomy-supportive teacher’s scores were the highest possible for all three items thus her average score was 7.

The observers noted that the low-autonomy-supportive teacher’s science lesson was filled with many different activities. She had put iPads on each student’s desk and the lesson started with a test about parts of the human body as the teacher was not satisfied with the results of a first test. A few students immediately started playing with their iPads – this was noticed by a peer who reported it to the teacher – playing with iPads was not allowed by the teacher, they were for use as a learning tool. A few girls kept crocheting during the lesson – the teacher stopped this once but later on did not pay attention to. After the test, the teacher did not announce a new topic or why new information is useful for students to learn. She kept up a good pace, and announced the next activity in advance but rarely mentioned the benefits or value of the lesson for students. Throughout the lesson, students were whispering or chatting with each other which forced the teacher to ask for attention and silence.

The observers of the lesson of the high-autonomy-supportive teacher noted that, at the start of the lesson, the teacher gave instructions about group work that would take place throughout the lesson. She explained the topics on the work sheet that students would receive and fill by the end of the lesson, and also stated the goals of the group work. A time limit for each group work activity was set. The activities were written on the blackboard so that groups who finished early could continue with their next tasks. After each activity, conclusions were made and different students had a chance to introduce what they had written on their work sheet. There were not that many activities overall compared to the low-autonomy-supportive teacher’s lesson but the teacher had organised time for group discussion and conclusions. A few students expressed their dislike of working with some peers in their group, in which case the teacher acknowledged their complaints and asked whether they could still work together towards the same goal and promising that she would discuss the problem during break time – an approach acceptable to the students.

**Students’ self-reported learning engagement**

The average class results of the student’s self-reported learning engagement reports (Table 2, 2016) have remained, compared to Stage 1 (2014), high. On a scale of 1–5, the average engagement score was 4.5 for the low-autonomy-supportive teacher’s class and 4.8 in the high-autonomy-supportive teacher’s class.

The low-autonomy-supportive teacher’s students reported higher engagement, a rise from 4 to 4.5 since the Stage 1 study. The biggest changes in that class came in statements three and four,
the statements which measured cognitive and emotional engagement. Cognitive engagement has risen from 3.7 to 4.5 and emotional engagement from 3.7 to 4.7.

In the high-autonomy-supportive teacher’s class, the results showed high-learning engagement. Seventy-five per cent scored higher than in Stage 1 when the children were in the second grade of school (aged 8–9). Statement one (‘I paid attention’) which measures behavioural engagement scored the same as in Stage 1. In a comparison of the two selected classes, the high-autonomy-supportive teacher’s students reported higher engagement in all four aspects.

The average scores for the boys’ and girls’ self-reported engagement (Table 3) indicate that in Stage 1, the boys of the low-autonomy-supportive teacher’s class reported lower engagement than girls. On the other hand, in the high-autonomy-supportive teacher’s class boys reported a slightly higher engagement than girls in Stage 1.

A detailed analysis of the boys’ and girls’ self-reported engagement reports showed that in the Stage 1 boys (second grade, 2014) scored lower than girls in all four statements in the class of the low-autonomy-supportive teacher, with emotional engagement scoring lowest of the four – 2.8. In the Stage 2 (fourth grade, 2016) both boys and girls reported high engagement, but the boys’ average score was slightly lower than the girls’. The biggest changes in the low-autonomy-supportive teacher’s class were in boys’ cognitive and emotional engagement where cognitive engagement rose from 3.1 to 4.4 and emotional engagement from 2.8 to 4.4. The girls’ scores in all aspects remained high in a comparison with Stages 1 and 2, although slightly lower behavioural engagement was revealed in Stage 2.

In the class of the high-autonomy-supportive teacher all four aspects were rated high by boys and girls in both Stage 1 (second grade) and Stage 2 (fourth grade). In Stage 1, the boys scored higher than girls in three out of the four statements and in Stage 2 girls reported higher engagement than boys in all three aspects. The biggest differences between Stage 1 and Stage 2 in the high-autonomy-supportive teacher’s class were in the cognitive and emotional engagement of the girls where cognitive engagement rose from 4.4 to 4.8 and emotional engagement from 4.2 to 4.9.

Based on these results, it is evident that there are more factors in classroom teaching that influence learning engagement other than autonomy-supportive and structured teaching, and further research exploring affecting factors should be made.

**Discussion and conclusion**

This study aimed to indicate the dynamics of learning engagement and its relationship with teachers’ classroom practices over the course of two years. The focus of teachers’ classroom practices was on autonomy-supportive and structured teaching as it is found to enhance students learning engagement regardless of school level (Jang, Reeve, and Deci 2010; Hospel and Galand 2016; Poom-Valickis et al. 2016). The period selected was between 2014, when the students were in their second grade of education (average age 8) and 2016 when the students were in the fourth grade (average age 10). This current study is the final stage of a larger project which explored primary teachers’ instructional styles and students’ learning engagement. The expectation was that students would report lower engagement after some years. Subsequent results (in 2016) did not confirm this and it was decided to undertake a further study to take into account observation notes, lesson typology subject and activities in lessons.

The observational data of this study was derived from a low-autonomy-supportive teacher’s science lesson and a high-autonomy-supportive teacher’s Estonian language lesson. The decision to choose a science subject class followed a study by Timoššuk and Jaanila (2015) exploring engagement in fourth-grade nature study lessons in Estonia. This study found that 38% of students gave negative statements about engagement in science lessons. Any similar studies of engagement in Estonian language lessons had never been carried out.

Our results confirmed that students’ learning engagement in primary school is high (Poom-Valickis et al. 2016) and, even though disengagement has not been studied thoroughly in primary school the source of it is thought most likely to be there (Hornstra et al. 2013) because the beginning years of
schooling are critical and affect students’ learning behaviour in the long term (Fredricks, Blumenfeld, and Paris 2004). A study by Hospel and Galand (2016) found engagement to be related with the character of individual students but also class-grade variables, with teacher’s classroom practices and class atmosphere also influencing student’s learning. Our results confirm this as the observed lessons were very different in their typology and practices used by teachers were different. Low-autonomy-supportive teacher’s science lesson was concentrated on independent learning whereas high-autonomy-supportive teacher’s Estonian lesson fixated on group work. Both teachers had engaging aspects in their lessons – low-autonomy-supportive teacher gave her students a chance to receive a better grade and high-autonomy-supportive teacher used group work although not for a grade.

Teachers can also affect the overall social preference of the students in their classroom because primary-school children’s evaluations of their peers might be partly based on their observations of the teacher’s reactions to other students (Mikami et al. 2012). Social problems can interfere with the learning atmosphere for a whole classroom and students with peer problems are at high risk for subsequent academic disengagement, school failure and dropout (Buhs, Ladd, and Herald 2006). Observers did not note frequent unfair behaviour towards students in either of the classes. The only questionable situation they noted was in the low-autonomy-supportive teacher’s lesson during a test. She let a few students redo the test together because of technical issues but did not allow this for other students who wanted to do the same. A social problem arose in the high-autonomy-supportive teacher’s class when a boy did not want to belong to the same group as another boy, but after an effective discussion with the teacher he was reconciled to this and was willing to co-operate.

In the low autonomy, supportive teacher’s class students sat in pairs, the most common classroom layout for Estonian schools. The students had individual tasks throughout the lesson, from repeating a test to achieve a better grade, listening to the teacher talk, reading a new topic and filling in a workbook. Discussions in this lesson were held between teacher and student, student–student interaction was not welcomed by the teacher. There was mainly a talk to the whole class with a few cases of individual guidance. This implies that the low-autonomy-supportive teacher tended to use more traditional teaching methods where a teacher takes responsibility for students’ learning (Stroet, Opdenakker, and Minnaert 2015). Observers had also noted that students were very happy and focused when the teacher announced she is giving them a new chance for a better grade. During the retest the class was silent. After the test students remained happy although not as focused on the new topic and tasks.

On the other hand, the students in the high-autonomy-supportive teacher’s class were sitting in groups of four or five. Their activities alternated between listening to the teacher, individual tasks and group discussion. The teacher used more individual/small group discussion and talked to the whole class only to give instructions or check students’ progress. Thus, the high-autonomy-supportive teacher was using more social constructivist methods where the responsibility of learning shifts from teacher to the students (Stroet, Opdenakker, and Minnaert 2015) in the manner examined by Blatchford et al. who found that frequent systematic group work is found to improve students’ social skills and interaction, although teachers need to train students with necessary group work skills (Blatchford et al. 2006). Based on observers’ notes, high-autonomy-supportive teacher’s class was very engaged in group work and there was no disruptive behaviour, off-topic talk or joking. The teacher walked around in the class throughout the lesson, examining how students are progressing with group work and often asked if anyone needed guidance or help.

Blatchford et al. also found that primary students benefit most for academic outcomes from small classes as these help them to adjust better to school and to accommodate attention to individuals (2003). A newer study by Blatchford, Bassett, and Brown (2011) indicates that in larger classes, there is more whole-class teaching which usually means listening to the teacher talk and less attention to the needs of individual students. They also found that students display more on-task behaviour as class size decreased at primary level and vice versa. Both the observed classes in our study are considered large classes in Estonia – 26 students (with a few absentees) in the low-autonomy-
supportive teacher’s class and 20 students (also with few absentees) in the high-autonomy-supportive teacher’s class. According to the observers’ notes, the high-autonomy-supportive teacher spent more time on individual guidance and feedback than the low-autonomy-supportive teacher.

As discussed, both observed teachers in this study used different classroom practices, but they also used engagement promoting activities, which resulted in high engagement for students of both classes. Low-autonomy-supportive teacher offered an incentive but at the same time created a sense of challenge by letting students achieve a higher grade. High-autonomy teacher gave assignments, communicated clear goals and created opportunities for initiative by letting students work in groups. Thus the expectation that students’ engagement would be lower overall within two years and low-autonomy-supportive teacher would have more disengaged students was not met as both teachers used engagement enhancing activities which resulted in high-learning engagement in both classes. However, there are a variety of factors which influence learning engagement in classroom settings and are not measured by this study – for example, classroom variables, social context and lesson time in the day. Hence these aspects should be studied further to get a better understanding of the issues influencing learning engagement in classroom settings.

The authors acknowledge the limits of this study as it is based on a small sample. Therefore, conclusions for larger audiences will not be made, although longitudinal case studies provide valuable information which cannot be measured by quantitative data. To get a better understanding of this topic in primary school, future studies should include larger samples and all primary classes, also different data collection methods i.e. interviews with teachers and students about classroom expectations and engagement aspects could be considered as interviews often provide more personal information. This would give valuable information for educators and primary teachers.

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