

ADOLESCENTS' TEST-RELATED EMOTIONS IN ESTONIAN SCHOOLS

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Abstract

Positive and negative emotional experiences play an important role in academic achievement settings. Students at school experience a variety of stress-related situations. A major type of stress-related situations is tests students are regularly confronted with.

The purpose of this study was to compare test – related emotions of students studying in schools with Estonian as the language of instruction and with Russian as the language of instruction and also compare the evaluations of students studying in mainstream classes to evaluations of students studying in special classes for learning and behavioural difficulties.

This study assessed participants (N = 687) emotional experiences in academic settings when taking tests. We measured students' positive emotions (enjoyment, hope and pride) and negative emotions (anger, anxiety, shame and hopelessness) (Academic Emotions Questionnaire [AEQ] Pekrun, 2000).

Results showed that in academic achievement there were differences in grade, sex and class type level. In lower grades students reported significantly better marks than those in upper grade levels. According to our research test- related emotions differ between students studying in schools with Estonian as the language of instruction and with Russian as the language of instruction. That means those in Russian as the language of instruction reported significantly greater positive and negative emotions than those in schools with Estonian as the language of instruction. There was no significant difference in test- related emotions between regular classes and students in the classes for students with learning and behavioral difficulties.

Key words: *adolescents, school achievement, academic emotions, test-related emotions.*

Introduction

Students experience a rich diversity of emotions in academic settings. Until recently, emotional experiences related to learning have been neglected in educational research. In the past 10 years there has been an increase in theoretical and empirical contributions on emotions in education. Despite this increased interest in academic emotions, relatively few studies have focused on positive emotions like enjoyment, hope and pride (Pekrun, Goetz Titz, Perry, 2002; Goetz, Frenzel, Hall, Pekrun, 2008). Previous educational studies have mainly focused on negative emotions, such as test and exam anxiety (Hodapp, Benson, 1997; Zeidner, 1998).

The test can cause undue pressure on students, causing them to spend inordinate amount of time preparing for the tests. This effort is more often driven by a quest for good mark rather than by intrinsic interest in academic learning.

Those students who have had more positive emotions come to believe that they can attain desired goals, will be more likely to face challenging situations and engage in adequate strategies to achieve valued outcome. Children, who have had more negative outcomes tend to think that they cannot prevent negative consequences, will tend to react in a maladaptive manner. Some students crack under the pressure, experiencing test anxiety they perform below their ability level.

According to several studies, students frequently cite negative school experiences as an explanation for dropping out (Battin-Pearson, Newcomb, 2000; Rumberger, 2004). Perhaps the first

step in the process of alienation of the pupil from the school comes when the pupil experiences academic difficulties which are usually connected with negative emotions.

We can read from an extensive survey in Estonia „School as a Developmental Environment and Students' Coping: Aspects of Estonian school today” (2008): for 70% students schoolwork demands were constantly or sometimes too high; 67% students felt constantly or sometimes tired; 33% students said that they do not want to go to school; 33% students said that school is boring (Ruus, Veisson et al, 2008)

On the other hand in research PISA 2006 our students' achievements were on the fifth position in the world (Henno, Reiska, 2007). Does that mean that our students achieve their results despite negative emotions towards school and studying?

PISA 2006 also indicated a statistically significant difference between the main scores achieved by students in Estonian and Russian language instructions schools. In comparison, students of Estonian language schools were more successful in all main assessment areas (science, mathematics and reading) than students of Russian- language schools (Henno et al., 2008). However, there is a contradiction between the good academic results of students and positive school- related emotions. The mentioned studies showed that in spite of Estonia's good ranking in subject- related knowledge, stress, tiredness and anxiety due to high requirements reduce around one-third of the students' wishes to attend school.

Pupils who are engaged with their school both socially and academically tend to experience positive outcomes (e.g., Zweig, Phillips & Duberstein Lindberg, 2002). On the other hand, pupils who are estranged from their schools, either socially or academically tend to experience difficulties in either academic or behavioral domains or both.

This is the case when pupils experiencing difficulty are formally or informally transferred from the basic educational program within the mainstream of the school to special classes or, in some cases, alternative school settings. If the instructional strategies and the context of the alternative setting to which students experiencing difficulties are moved provide an environment that allows the students to participate more actively in the process of education and one in which learning is more meaningfully connected to their lives, these students may become more connected with the process of learning and thus more connected to the mission of the school.

According to the Estonian compulsory school program, one form of alternative placement for pupils experiencing academic and behavioral difficulties is to form special classes for those students. These classes are authorized by the Ministry of Education and Research from 2004 and are funded by the local governments.

The class (es) for the students with educational difficulties acquiring basic education are formed for those who do not follow general norms of behavior or the school regulations, who disregard the teachers' and parents' demands or who have either at school or outside school serious behavioral problems and who have repeated the class (Basic Schools and Upper Secondary Schools Act, 2004, 91, 1425). The maximum limit of class fulfillment is 12 students. The maximum limit of class fulfillment for the class compiled from the students of several classes is 10 students. A separate classroom is allotted to the formed class (Basic Schools and Upper Secondary Schools Act. 2004, 91, 1425). In academic year 2007/2008 47 schools have opened classes for pupils experiencing academic and behavioral difficulties with 680 pupils.

Academic Emotions

In our study we used Pekrun's control-value theory of achievement emotions as a theoretical framework (Pekrun, 2000). This theory implies that two types of appraisals are of specific relevance for the arousal of achievement-related emotions: appraisals of control over achievement activities and their outcomes, and of the value of these activities and outcomes.

Emotions may increase, or reduce academic motivation and related volitional processes. They can do so by inducing emotion-specific goals and intentions, which may be facilitated by emotion-congruent ways of processing self-related and task-related information. For example,

attention and recall can be focused on positive self-efficacy information in a positive mood and on negative information in a negative mood. In this way, positive activating emotions such as enjoyment of learning may generally enhance academic motivation, whereas negative deactivating emotions like hopelessness and boredom may just be disadvantageous (Pekrun et al, 2002).

Positive emotions such as relief or relaxation can deactivate any immediate motivation to continue academic work, thus facilitating disengagement. However, being positive emotions, they can also serve as reinforces strengthening motivation for the next stage of learning. The effects of negative activating emotions may be even more ambivalent. Anger, anxiety, and shame can be assumed to reduce intrinsic motivation, because negative emotions tend to be incompatible with enjoyment as implied by interest and intrinsic motivation. On the other hand, due to their activating nature these emotions can induce strong motivation to cope with the negative events that caused them, thus strengthening specific kinds of extrinsic motivation. For example, task-related anger is assumed to trigger motivation to overcome obstacles, and anxiety and shame may induce motivation to avoid failures by investing effort, thus strengthening academic motivation. Recent findings by J. E. Turner (2001) on students' shame are in line with this assumption.

Emotions serve functions of directing attention toward the object of emotion, implying that they use cognitive resources and can distract attention away from tasks. This has traditionally been assumed for negative emotions (Zeidner, 1998), but has been demonstrated experimentally for positive emotions as well. Emotions such as enjoyment, pride, anxiety or anger can relate to the setting, other persons, or the self, thus producing task-irrelevant thinking, reducing cognitive resources available for task purposes, and impairing academic achievement. Specifically, enjoyment of dealing with learning material and related experiences of flow may direct attention toward the task at hand, thus allowing for the full use of cognitive resources instead of reducing them.

Emotion effects on students' achievement may depend on the interplay between different motivational and cognitive mechanisms of self-regulation and on interactions between these mechanisms and task demands. This implies that emotion effects on academic achievement will inevitably be complex. Positive emotions are worthy of investigation because they help to envision goals and challenges, open the mind to thoughts and problem-solving, protect health by fostering resiliency, create attachments to significant others, lay the groundwork for individual self-regulation, and guide the behaviour of groups, social systems, and nations (Pekrun et al. 2002). Positive emotions are worth cultivating, not just as end states in themselves but also as a means to achieving psychological growth and improved well-being over time (Fredrickson, 2001).

More specifically, positive emotions play a pivotal role within educational settings. Pekrun, Goetz, Titz, and Perry (2002) highlighted the relevance of positive academic emotions with respect to self-regulation, strategy use, motivation, and activation of cognitive resources in students. Positive emotions have been found to positively relate to student involvement in terms of course enrollment, career aspirations, and occupational choices in specific domains. Accordingly students' experiences in classrooms are as important for their current functioning as for their future. For example, social experiences in math classes are associated with healthy adjustment and engagement and academic experiences predict high school and college plans (Hamm & Faircloth, 2005; Eccles, Vida, & Barber, 2004). If students experience fewer positive emotions related to languages or mathematics, they are significantly less likely to pursue a career in those domains.

In addition, in theories of emotion, researchers have typically explored emotion as an outcome rather than as a predictor. For example, Lazarus (1991) contends that a person's motivation influences how an event is appraised, leading to an emotional response. Researchers have only recently begun to examine the reciprocal possibility that affect, encompassing both emotions and moods, influences motivation, specifically students' motivation to learn (Boekaerts, 2001; Op't Eynde et al., 2001). Affect is increasingly considered a motivator because students seek activities they find enjoyable and associate with positive emotions (Op't Eynde et al.; Schultz & Pekrun, 2007; Schweinle, Turner, Mayer, 2008).

In conclusion, researches suggest that positive and negative emotional experiences play an

important role in academic achievement settings, and can have a considerable impact on students' cognitions, behavior, and ultimate success or failure in the academic domain.

More specifically, it is by examining why students experience specific positive or negative emotions in educational settings that we can offer better suggestions for designing academic environments that foster positive experiences such as enjoyment, hope, and pride.

The following research questions guided our studies on academic emotions:

1. Which test- related emotions do students experience in academic settings?
2. How do students with learning and behavioral problems test- related emotions differ from regular classes students?
3. Are there differences in test- related emotions between schools with Estonian as the language of instruction and with Russian as the language of instruction?

Methodology of Research

This study assessed participants' emotional experiences in academic settings when in class, studying, and taking tests. We used The Academic Emotions Questionnaire (AEQ) which is a multidimensional self-reported instrument to assess students' achievement emotions (Pekrun, Goetz, Titz, Perry, 2000). There are three sections to the AEQ, containing the class-related, learning-related, and test-related emotions. The test-related emotion scales include 71 items and measure seven emotions: test- related enjoyment, hope, pride, anger, anxiety, shame and hopelessness. Within each section, the items are ordered in three blocks assessing emotional experiences before, during and after being in achievement situations addressed by the section. The AEQ assesses students' typical, individual emotional reactions in achievement situations (trait achievement emotions).

In current article we analyze only test-related emotion

Response format consisted of a 5-point Likert scale ranging from (1) strongly disagree to (5) strongly agree.

Test-Related Emotion Scales

The questionnaire includes the seven test-related emotion scales assessing test-related enjoyment, hope, pride, anger, anxiety, shame and hopelessness.

Three positive emotions (enjoyment, hope, pride,) and four negative emotions (anger, anxiety, hopelessness and shame). There were 10 statements to measure test – related enjoyment. There are some of them. *For me the test is a challenge that is enjoyable. I am happy that I can cope with the test.* There were 8 statements to measure test-related hope. *I am optimistic that everything will work out fine. I am quite confident that my preparation is sufficient.* There were 10 statements to measure test – related pride. *I think that I can be proud of my knowledge. When I get the test results back, my heart beats with pride.* There were 10 statements to measure test- related anger. There are some of them. *I think the questions are unfair. I get angry about the amount of material I need to know.* There were 12 statements to measure test- related anxiety. There are some of them. *At the beginning of the test, my heart starts pounding. I worry whether I have studied enough.* There were 10 statements to measure test- related shame. There are some of them: *I get embarrassed because I can't answer the questions correctly. I feel humiliated.* There were 11 statements to measure test- related hopelessness. There are some of them: *I'd rather not write the test because I have lost all hope. I have given up believing that I can answer the questions correctly.*

So there were 10, 8, 10, 10, 12, 10, 10 and 11 items for enjoy, hope, pride, anger, anxiety, shame, and hopelessness respectively. Reliability (Alfa) was 0.89, 0.91, 0.91, 0.90, 0.87, 0.90 and 0.90 respectively.

During the translation of the test into Estonian and Russian the test was adapted due to specific features of the languages.

The sample consisted of 687 basic school students (51,7% female), including 191 students (109 female) from Grade 6, 137 students (82 female) from Grade 7, 74 students (28 female) from Grade 8, 265 students (121 female) from Grade 9 and 20 students (15 female) from Grade 10. From the respondents N=604 study in an ordinary class and N= 83 study in a class for students with learning and behavioral difficulties.

Sampling was based on the data from the Ministry of Education and Research concerning classes for students with learning and behavioural difficulties. These schools were especially asked to participate in the study. The questionnaire was sent to the teachers by e-mail. It was containing the introduction of research aims and the web address to the questionnaire. Data collection took place during the first part of academic year (October and December 2008). The students completed the Pekrun Academic Emotions Questionnaire e-formular in the school computer class.

In all analyzed groups academic achievements (marks), time spent on homework and languages of instruction in the school are used as factors influencing test-related emotional status.

Processing the data of present study, the computer statistical program SPSS was used. The reliability was calculated by an Alfa-coefficient.

Results of Research

Academic achievement

In academic achievement there were differences in grade, sex and class type level. Girls had better marks than boys in all grade level and class type level. 49.3% of girls and 22% of boys had all excellent or excellent and very good marks. In lower grades students reported significantly better marks than those in upper grade levels. There was a significant difference between regular and the class for students with learning and behavioral problems. Student from the class for students with learning and behavioral problems reported lower marks than regular class students. There was a difference also between schools with Estonian as the language of instruction and Russian as the language of instruction. 35.7% of students in the schools with Estonian as the language of instruction and 36.7% of students in the schools with Russian as the language of instruction noted only excellent or excellent and very good marks. 24.9% of students in the schools with Estonian as the language of instruction and 8.6% of students in the schools with Russian as the language of instruction had mostly satisfactory or some insufficient marks. So, the study shows that students in the schools with Russian as the language of instruction have better marks than students in the schools with Estonian as the language of instruction.

The following question dealt with time spent on homework. Academic achievement and time what students spend on their homework are definitely connected.

This study shows that 71.1% of students in the classes for students with learning and behavioral difficulties and 74.1% of students in ordinary classes spent 0.5-1.5 hours on homework. 28.9% of students in the classes for students with learning and behavioral difficulties and 25.9% of students in ordinary classes spent two to three hours on homework. If we compare schools with Russian as the language of instruction and Estonian as the language of instruction we can say that 81.5% of students in the schools with Estonian as the language of instruction spend 0.5-1.5 hours on homework, the respective figure among schools with Russian as the language of instruction was 62.3%. 18.5% of students in the schools with Estonian as the language of instruction and 37.7% of students in the schools with Russian as the language of instruction spent two to three hours on homework. So, we can conclude that the share of homework in the schools with Russian as the language of instruction is larger than in the schools with Estonian as the language of instruction. 70.4% of girls and 77.1% of boys manage with homework within 0.5-1.5 hours.

So, the results of this study, as well as other studies recently carried out in Estonia, indicate that students have too extensive homework that creates stress and school-tiredness.

Test-Related Enjoyment

There were 10 statements to measure test-related enjoyment. Reliability (Alfa) was 0.89. A two – way analysis of variance was conducted in the test to determine whether sex and grade level yield differences in enjoyment. One effect obtaining significance was grade level. That is those in lower grades reported significantly greater enjoyment than those in upper grade levels $F(3,552) = 4.19, p > 0.006$. There were no significance differences in boys and girls answers.

There were significant differences between following aspects: There are differences between students' test-related enjoyment and academic achievement. $F(1,553) = 8.68, p > 0.003$. Students who had good and satisfactory marks showed the highest enjoyment and students who had unsatisfactory marks showed the lowest enjoyment. Time spent on homework and test-related enjoyment was not related.

A two – way analysis of variance was conducted in the test to determine whether language of instruction in a school and class type yield differences in enjoyment. One effect obtaining significance was the language of instruction. There was a difference between schools with Estonian as the language of instruction and Russian as the language of instruction. It means that students in the schools with Russian as the language of instruction feel greater test-related enjoyment than students in the schools with Estonian as the language of instruction. $F(1,557) = 34.28, p > 0.001$. There were no differences between regular classes and students in the classes for students with learning and behavioral difficulties.

Test-Related Hope

There were 8 statements to measure test-related hope. Reliability (Alfa) was 0.91. A two – way analysis of variance was conducted in the test to determine whether sex and grade level yield differences in test-related hope. The effect obtaining significance was grade level. That is those in lower grades reported significantly greater hope than those in upper grade levels $F(4,545) = 3.02, p > 0.017$. There was also sex difference in hope. That is girls have more hope than boys $F(1,550) = 6.84, p > 0.009$.

There was a significant difference in students' test-related hope and marks. The students who have good and excellent marks are significantly more hopeful than students with satisfactory and unsatisfactory marks $F(3,546) = 3.10, p > 0.027$. There was not a statistically reliable relation between homework and hope.

There was also a significant difference between students from the schools with Estonian as the language of instruction and Russian as the language of instruction. Russian students had more hope than students from the schools with Estonian as the language of instruction. $F(1,550) = 10.44, p > 0.001$.

Test-Related Pride

There were 10 statements to measure test-related pride. Reliability (Alfa) was 0.91. A two – way analysis of variance was conducted in the test to determine whether sex and grade level yield differences in pride. But there were no differences in class level and sex difference in test-related pride.

Students who spend 3 hours on homework feel more test-related pride than students who study only 0.5 hours at home $F(1,542) = 3.05, p > 0.006$. There was also difference between Estonia and Russian schools. Students from schools with Russian as the language of instruction reported greater pride than Estonian students $F(1,552) = 11.16, p > 0.001$.

There was no significant difference between regular and students in the classes for students with learning and behavioral difficulties.

Test-Related Anger

There were 10 statements to measure test- related anger. Reliability (Alfa) was 0.90. A two – way analysis of variance was conducted in the test to determine whether sex and grade level yield differences in anger. One effect obtaining significance was homework and test- related anger. Students who study more than 3 hours at home feel more angry than those who study 0.5 hours $F(6,541)=2.26, p>0.036$. There was also difference between Estonian and Russian schools, students from the Russian schools showed more anger than Estonian students $F(1,551) =18.97, p>0.001$.

There was no significant difference between regular and students in the classes for students with learning and behavioral difficulties.

Test-Related Anxiety

There were 12 statements to measure test- related anxiety. Reliability (Alfa) was 0.87. The was only difference between Estonia and Russian schools, students from the Russian schools showed more anxiety than Estonian students $F(1,555) =16.99, p>0.001$.

Test-Related Shame

There were 10 statements to measure test- related shame. Reliability (Alfa) was 0.90. A two – way analysis of variance was conducted in the test to determine whether sex and grade level yield differences in shame. One effect obtaining significance was grade level. That is those in lower grades reported significantly grater shame than those in upper grade levels $F(4,543) =2.46, p>0.044$. There was also sex difference in test- related shame. Boys reported grater shame than girls $F(1,548) =10.03, p>0.002$.

There was statistically reliable difference between academic achievement and test- related shame. The students who have satisfactory marks feel significantly more shame than students with good and excellent marks $F(3,544) =3.28, p>0.021$. There was a difference between schools with Estonian and Russian as the languages of instruction. Students from the schools with Russian as the language of instruction feel more shame than students from the schools with Estonian as the language of instruction $F(1,548) =23.19, p>0.001$.

There was no significant difference between regular and students in the classes for students with learning and behavioral difficulties.

Test-Related Hopelessness

There were 11 statements to measure test- related hopelessness. Reliability (Alfa) was 0.90. A two – way analysis of variance was conducted in the test to determine whether sex and grade level yield differences in test-related hopelessness. There was difference between boys and girls. Boys reported grater hopelessness than girls $F(1,547) =16.16, p>0.001$.

There was a relation between hopelessness and academic achievement, i.e. those who had satisfactory marks on their academic reports felt greater hopelessness than those with better academic achievement $F(3,543)=3,06, p>0.028$. The was also difference between Estonia and Russian schools, students from the Russian schools showed more test- related hopelessness than Estonian students $F(1,547)=28.08, p>0.001$.

There was no significant difference between regular and students in the classes for students with learning and behavioral difficulties.

Discussion

The current article focused on test-related emotions of students from grades 6-7 and grades 8-9 from schools with Estonian and Russian as the languages of instruction. The results were compared with the emotional state of students with learning and behavioural difficulties during the test. Based on the main emotions in the Pekrun Academic Emotions Questionnaire [AEQ] that lists satisfaction, hope and pride as positive emotions and anger, anxiety, shame and hopelessness as negative emotions the following occurred:

1. There were no differences in test-related emotions between mainstream class students and students with learning and behavioural difficulties. Basically, the same result was achieved in a study where learning related emotions were compared between mainstream class students and students with learning and behavioural difficulties (Normak, Talts, 2009). This result allows us to conclude that work done with students with learning and emotional difficulties has been fruitful. These classes have less students and a teacher has more time to work individually and prepare them for taking tests. In „difficult“ classes teachers use more active learning to motivate students and more strategies to develop responsibility (expressing one's opinion, explaining behaviour, self-analysis etc.).

2. Positive and negative test-related emotions are more characteristic to students in schools with Russian as the language of instruction. We may say that they express their emotions more intensely than students in schools with Estonian as the language of instruction. Statistically relevant difference appears in relation to *hope* and *pride*, but at the same time negative sides of feelings are strongly represented too. E.g. anxiety and shame are much stronger in case of students from schools with Russian as the language of instruction.

3. Comparing the younger and the older student group the following tendency becomes evident – students in grades 6-7 experience more positive test-related emotions than students from grades 8-9. So, the statistically relevant difference is in general feeling of satisfaction that is significantly stronger among younger students. Also students from grades 6-7 experience shame more often while taking tests. As tests are related to assessment and numerical grades are the main indicators of academic success, also attitude towards students at school, home, in public and in media is related to numerical learning results, several students in the end of the compulsory school can't manage the curriculum requirements. The possible negative test results and over-estimated importance of numerical grades decrease positive emotions related to learning.

4. Comparing test-related emotions of boys and girls it occurs that boys experience negative feelings more. The same tendency appeared in the study on learning-related emotions (Normak, Talts, 2009). Negative emotions towards the school and learning are an important reason why the drop-out rate of boys in the end of compulsory schooling is high. The problem to be solved is how to increase learning motivation and interest of boys towards school?

Conclusion

It is possible to bring out some general conclusions from the current study that allows us to understand test-related emotions of youth better. It occurred that students who study more at home and are therefore better prepared for tests experience more positive emotions related to tests. Different researches have gathered the same evidence that homework has positive effect on students academic achievement (Cooper, Valentine, 2001; Keith, Cool, 1992). Conversely, students who spent more unstructured time (e.g., hanging out with peers) are at greater risk of negative educational outcomes (Cosden, et al. 2004). The results of this study confirmed also the results of a student survey conducted in 2004 at Tallinn University within the framework of the project „School as a developmental environment and students coping“ where 70% of students claimed that study load is always or sometimes too high. 67% of respondents felt always or often tired and almost half of the students felt tired already in the morning (Ruus, et al, 2007). Too much homework may lead to boredom with school, because all activities remain interesting only for so

long. Too much homework can deny children access to leisure activities that also teach important life skills (Cooper, Valentine, 2001).

Therefore, for better academic results teachers should pay more attention to the optimum amount of homework, to individual counseling in relation to homework and also to feedback on homework.

As academic results of girls are usually higher than of boys they experience negative feelings more seldom. It is also characteristic that negative emotions increase from year to year that, in return, is related to the decrease of general joy of learning.

Based on this study, we can conclude that classes for students with learning and behavioural difficulties are a possibility to increase student retention in educational system. Students, who during the earlier school years have had serious learning and behavioural problems, reported the same amount of positive and negative test- related emotions than their peers from mainstream classes.

The study about learning related emotions of youth helps to raise the awareness of its influence to different student groups and to find solutions to create a learning environment that takes into account young people's needs and is age specific.

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