Students’ motivation and academic success in relation to the quality of individual and collaborative work during a course in educational psychology

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Abstract

The aim of our study was to find out if there are any differences in academic motivation for coursework and academic success among groups of students who differ in the quality of their individual and group work. The subjects were 143 student teachers in their 2nd year of studies. At the beginning of the semester they filled in the Motivational Strategies for Learning Questionnaire – MSLQ (Pintrich, Smith, Garcia, & McKeache, 1991). Also at the beginning of the semester, they chose their seminar group. During the semester, students prepared and presented their seminar work in groups of three. After each presentation, students were given verbal feedback on their presentation and each member of the group filled in three self-report scales. Each student assessed the quality of his/her individual preparation, the quality of group work during preparation and his/her part of oral presentation. Students also reported about the intensity of intrusive thoughts during their presentation. According to their evaluations of individual preparation (IP) and group work (GW), students were assigned to one of the following groups: low IP-low GW, low IP-high GW, high IP-low GW, and high IP-high GW. The results showed that students in the four groups differ in the following motivational dimensions: extrinsic motivation, task value and anxiety. The groups also differ in self-reports on intrusive thoughts during presentation, students’ self-assessments of their presentation and teacher nomination of excellent presentations. The results of our study lead to the conclusion that we have to consider students’ motivation before we start to work on certain educational goals very carefully, especially when developing complex teacher competencies such as presentation and cooperation skills at the same time. We can promote student motivation by choosing relevant, authentic problems that are related to students’ future profession and thus assure their individual accountability.

During student teachers’ undergraduate studies, several very complex competencies have to be developed in order to enable them to become successful teachers. Presentation and collaboration skills are among the most important ones. Clear presentation and explanation of learning material is a necessary condition for meeting students’ cognitive level and promoting their understanding of learning material. At the same time, a collaborative learning climate is also a necessary condition for students’ school achievement. Teachers have to establish a cooperative atmosphere in their work with a class, among the students, with their colleagues in school, with parents and also within the broader community. At the Faculty of Arts we educate student teachers in a concurrent model. Beside their disciplinary subjects they also have to accomplish the so called “professional” subjects. Educational psychology is the first obligatory course they have to attend. During the course we start to develop student teachers’ professional competencies. Among them, the development of presentational skills and collaboration competencies are important too. We do it systematically in the seminar work, where students have to work in groups to prepare and present their chosen seminar topic.
Motivation plays a major role in students’ academic work and in their achievement. It reflects in students’ choices of learning tasks, in the time and effort they devote to them, in their persistence on learning tasks, in their coping with the obstacles they encounter in the learning process. Previous research (Bandalos, Geske & Finney 2005; Chemers, Hu & Garcia, 2005; Senko & Harackiewicz, 2005; Wiegfield, et. al. 1997; Zohar, 1998) showed that students’ achievement goals, their interest in courses and their success expectancies were positively related to their final course grade. At the beginning of their undergraduate studies students do not have a clear representation of the content and methods used in the teacher training courses. In addition, some of our students do not elect those courses because they would be interested in the teaching profession but just to secure a wider range of employment opportunities in the future. In fact, we have surveyed our students as to how much they want to work as teachers after graduation. 18% of the students in our sample reported that they do not want to work as teachers, and another 48% reported that they want to become teachers but only for a limited time in their professional life. We were thus interested to investigate the relations between different aspects of student teachers’ academic motivation and the quality of their individual and group work during the academic year. These are believed to develop their teaching competencies and help them towards better academic performance. Speaking more generally, we think that the results obtained in this kind of study might help university teachers to obtain feedback on students’ levels of motivation in a specific course and reveal the usefulness of different tasks that teachers set to students in order to promote the quality of their coursework (self-initiative, individual study, group work), and thus improve their professional competencies as well as overall course grades.

Motivation is a multidimensional construct. Researchers in the field of motivation (Wiegfield & Eccles, 2001) agree that a student engaging in any learning situation has to answer three fundamental questions: ‘Can I do this activity?’, ‘Do I want to do this activity and why?’, and ‘What do I need to do to succeed?’ (Wiegfield & Eccles, 2001).

Constructs relating to the question “Can I do this activity?” are the expectations students have according to their capabilities to perform a certain activity in different areas. Bandura (1986, p.391) defined self-efficacy as “people’s judgment of their capabilities to organize and execute courses of action required to attain designated types of performance.” Self-efficacy affects students’ choice of activity, their effort and persistence in it. Students constantly judge their intellectual capabilities against the curriculum demands and values of school tasks, and they then decide to persist in the coursework or not. Different studies show that self-efficacy is one of the most powerful predictors of student achievement (Bandalos, Geske & Finney 2005, Pintrich & De Groot, 1990, Schunk, 1984, 1989, 1996, Zohar, 1998). In a longitudinal study among first year college students, self-efficacy proved to be positively related to performance, personal adjustment, health and commitment to stay in school (Chemers, Hu, Garcia, 2005).

The most important motivational construct, related to the question “Do I want to do this activity and why?”, is intrinsic end extrinsic motivation. Intrinsically motivated students engage in an activity for its own sake – because they find working on the task enjoyable. Students learn because they are curious about the content and they feel challenged by the learning activity. Many studies showed that intrinsic motivation was positively related to students’ learning achievement and their self-perception of competencies (Ames, 1992, Blumenfeld & Pokay, 1990, Gotfried 1990, Hofer, Yu & Pintrich, 1998, Wiegfield, et. al. 1997).
On the other hand, students can also be extrinsically motivated to engage in an activity when they believe that working on the task will result in desirable outcomes (e.g. reward, good grade, parents’ and teachers’ approval, avoidance of punishment). Intrinsic motivation usually results in more cognitive engagement than extrinsic motivation (Ryan & Deci, 2000). However, the relationships between intrinsic and extrinsic motivation, engagement and achievement are complex. It is better to think about intrinsic and extrinsic motivation as two separate continuums than extreme ends of one, because students can be low in one and high in the other type of motivation, low in both or high in both (Pintrich & Schunk, 2002). Student teachers at the beginning of their studies can be low in intrinsic motivation (when they are taking teacher education courses merely because of better employment opportunities after graduation). In this situation, extrinsic motivation can keep them attending the courses and finishing the tasks, and enable them to start enjoying working with pupils and develop intrinsic motivation.

According to the researchers, from the perspective of the achievement goals theory two general classes of goals that influence students’ motivation and achievement can be identified: mastery and performance achievement goals. Students with mastery goals are directed toward learning, improvement and demonstrating competence in a certain field. On the other hand, students with performance goals are directed to the competence needed to outperform others (Ames, 1992, Dweck, 1986, Nichols, 1984). Early research in this area concentrated on mastery versus performance goal comparisons and found superiority of mastery goals over performance in promoting achievement (Harackiewicz & Linnenbrink, 2005). Later, mastery and performance goals were conceptualized as independent dimensions. Research also constantly indicates a possibility of performance goals having some positive effects on performance and achievement as well (Church, Elliot & Gable, 2001, Senko & Harackiewicz, 2005).

The next important aspect of the level of engagement in an activity is task value. Eccless et. al. (1983) defined subjective task values as incentives for doing different tasks. They include interest in the task, its importance to individuals and its utility (Wigfield et. al. 1997). Subjective task values have been found to be positively related to student achievement (Pintrich & De Groot, 1990, Wigfield, Eccles, 1992), but when both expectancy beliefs and values are used to predict achievement, expectancy beliefs are important predictors while values are not (Pintrich & Schunk, 2002).

The affective component, a student’s emotional reactions to the task (Pintrich, DeGroot, 1990, Pintrich, Schunk, 2002), is also important for the student’s engagement in a certain activity. Task anxiety is the most frequent affective variable related to student performance and achievement. Research results consistently show a negative effect of anxiety on academic performance (Pintrich & Schunk, 2002). Hembree (1988) in his meta-analysis found that test anxiety is negatively related to performance and self-esteem. It is also related to students’ defensiveness and fear of negative evaluations. During a verbal presentation, a student can be mainly occupied with task-relevant thoughts such as concentrating on the content, thinking of the way to organize activities and stimulate colleagues to participate in discussions. On the other hand, if the situation is perceived as a threat to the student, when the student perceives a discrepancy between the demands of the task and his personal resources available to accomplish them, emotions-focused coping and irrelevant cognitions are elicited. Research has shown that negative intrusive thoughts relate negatively to academic performance, especially in presenting to peer groups, as we have found in a similar study with pre-service teachers (Peklaj & Puklek, 2001, Puklek, 2001).
Related to the question “What do I need to be successful in an activity?” is the use of cognitive and metacognitive strategies in a learning activity. Cognitive (i.e. rehearsal, elaboration, organization) and metacognitive strategies (planning, monitoring, evaluation) also proved to be connected to motivation and to learning achievement. The connections between (meta)cognitive strategies, the motivational dimension and achievement are multidirectional and complex. Positive correlations were found between self-efficacy and cognitive strategy use (Pintrich & De Groot, 1990), and between self-efficacy and deep processing in a statistics course (Bandalos, et al, 2003). Learning (mastery) goals were positively related to task interest (Senko & Harackiewicz, 2005), to information processing, planning and monitoring (Ames, Archer, 1988), and to a deep approach to learning in an introductory psychology course (Elliot et. al. 1999). Performance goals were positively related to self-efficacy, test anxiety and disorganization in learning (Bandalos, et.al, 2003). A negative relationship between test anxiety and self-efficacy was also found (Pintrich & De Groot, 1990, Zohar, 1998).

Extensive research (Johnson & Johnson, 2002, Kagan, 1989, Slavin 1983, Springer, Stanne & Donovan, 1999) in the field of cooperative learning showed that learning in groups can affect students’ cognitive, affective-motivational and social processes. The cognitive benefits of cooperative learning in comparison with students’ individual learning can be seen in their higher achievement (Johnson & Johnson, 2002, Springer, Stanne & Donovan 1999); the affective motivational benefits in a more cooperative climate (Lazarowitz & Karsenty, 1990), in intrinsic motivation (Nicholls & Miller, 1994), in higher self-esteem (Lazarowitz, Lazarowitz & Baird, 1994), and in reduction of anxiety (Burron et al, 1993). Social benefits can be seen in more positive interpersonal relationships, developing social skills, higher persistence in studies and lower levels of drop-out in undergraduate studies (Pascarella, 2001, Springer, Stanne & Donovan 1999, Tinto, 1993).

In our course we used cooperative group work, beside other goals, primarily as a means to develop collaborative social competencies in students. But it is not enough to put students in groups and tell them to work together to obtain the best results. Among the other key elements for successful groupwork, group individual accountability and group interdependence has to be developed. Positive interdependence exists when students perceive that they can not succeed in achieving their goals unless other group members can also achieve theirs. They can’t reach the group goal if they don’t reach their own. Positive interdependence results in promotive interaction as students encourage each other’s efforts to learn (Johnson, Johnson, 2002, pp 120). They are required to help each other in the group. Group interdependence can be structured by goal, reward, task, roles or resource interdependence. In our seminar work group interdependence was established with tasks and reward interdependence. Students had to prepare group presentations and they could achieve a certain bonus that affected their individual final grades if the whole group’s presentation was assessed by teacher as excellent.

Individual accountability can be established by making sure that each student’s contribution to group efforts can be identified. It can be structured by giving an individual test to each student, by explaining to others what they have learnt or by the teacher observing each group and documenting the contributions of each group member. In our course we try to establish individual accountability by monitoring group work and students reporting about their progress in class twice during the preparation phase, and by requiring equal participation of individual group members in their presentation of groupwork.
The aim of our study was to find out if there are any differences in academic motivation for the educational psychology course and in academic success among groups of students who differ in the quality of their individual preparation (individual accountability) as well as the quality of their group preparation (group interdependence) of seminar work.

Method

Sample

The sample consisted of 245 second-year undergraduate pre-service teachers at the Faculty of Arts in Ljubljana, 193 females and 52 males. Female students prevailed in the sample; however, such sample composition represents the actual proportion of females and males in the Faculty of Arts’ undergraduate programs in social sciences and linguistics.

Measures

*The Motivated Strategies for Learning Questionnaire* (MSLQ, Pintrich, Smith, Garcia and McKeachie, 1991) is a self-report questionnaire. It assesses university students’ motivational orientations and different learning strategies, which they use in a particular academic course. The questionnaire contains a motivation section (6 scales) and a learning strategies section (9 scales). Students rate themselves on a 7-point Likert scale from 1 – *not at all true of me* to 7 - *very true of me*. The score from each scale is computed by taking the mean of the items that make up the scale.

In this study, we only utilized the motivation section, which consists of 31 items. It measures the value component of motivation (goals and value beliefs for a course), the expectancy component (beliefs about one’s skills needed to be successful in a course), and test anxiety. The items in the motivational part of the MSLQ were reworded in such a manner that they expressed students’ motivation for a psychology course. The only exceptions were the test anxiety items, which in the current study described students’ affective arousal and negative thoughts experienced in any exam. We decided not to ask students about their test anxiety in the psychology course because at the time of completing the MSLQ (at the beginning of the academic year) they had not yet experienced any assessment in the course.

The three scales represent a value component of motivation: Intrinsic Goal Orientation, Extrinsic Goal Orientation and Task Value. *Intrinsic Goal Orientation* consists of 4 items referring to students’ mastery goals in the course and other internal reasons for participating in the course such as challenge and curiosity. A sample item: “In the psychology course I prefer course material that really challenges me so I can learn new things.” *Extrinsic Goal Orientation* consists of 4 items measuring various external reasons for participating in a course such as grades, rewards, competition and evaluation by others. The main concern of students here is not to engage in the task for the sake of its accomplishment and developing of one’s mastery - engaging in a learning task represents the means to an end. A sample item: “If I can, I want to get better grades in a psychology course than most of the other students.” *Task Value* consists of 6 items. Whereas goal orientation refers to reasons for participating in the task, task value refers to a student’s expressed interest in the course and his/her evaluation of the importance and usefulness of the learning material in the course. A sample item: “I think I will be able to use what I learn in the psychology course in other courses.”

The two MSLQ scales measure the expectancy component: Control of Learning Beliefs and Self-Efficacy for Learning and Performance. *Control of Learning Beliefs* consists of 4 items
and measures students’ belief that learning outcomes are the result of one’s own effort. It is
the belief that a student can control his/her academic performance and that his/her efforts to
study will result in positive outcomes. A sample item: ‘If I try hard enough, I will understand
the course material.’ **Self-Efficacy for Learning and Performance** consists of 8 items. It
measures expectancy for success and self-efficacy. Expectancy for success refers to the
anticipated success in a task performance while self-efficacy refers to the perception of one’s
ability to accomplish a task and one’s confidence in his/her skills to understand the course
material and accomplish the course assignments and tests. A sample item: ‘I’m confident I can
do an excellent job on the assignments and test in the psychology course.’

The third motivational construct is affect. The **Test Anxiety** scale consists of 5 items and
contains cognitive and emotionality aspects. The cognitive component refers to worries or
negative thoughts about test performance, and the emotionality component refers to affective
and physiological arousal when taking a test. A sample item: ‘When I take a test I think of the
consequences of failing.’

**Seminar Work: Preparation and Presentation** (SWPP; Peklaj & Puklek Levpušček, 2005) is
a self-assessment questionnaire consisting of 4 parts. In the first part, students assess the
**quality of their individual preparation** of seminar work. The 7 items describe: the use of
different resources (i.e. literature), studying to understand, relating theory to classroom
practice, relating theory to one’s own previous school experiences, integrating the readings
into a meaningful whole, anticipating the seminar presentation while reading and
simultaneously thinking about how to motivate their peers in the audience. A sample item:
‘When I read the material for my seminar work, I tried to connect it with examples from
classroom practice.’ Cronbach’s coefficient alpha for the first part of the questionnaire was \( \alpha = .64 \). In the second part, students assess the **quality of their group work**. The 7 items
describe: planning by the group of how to synthesize individual contributions into a group
product (i.e. seminar paper), dividing tasks among group members, compromising and
decision making, problem solving, effectiveness of the group work, helping other members of
the group during the presentation. A sample item: “When we prepared the presentation in a
group, we planned together how to synthesize our individual contributions into a meaningful
whole.” Cronbach’s coefficient alpha for the second part of the questionnaire was \( \alpha = .80 \). In
the third part of the questionnaire, students assess their **part of the seminar presentation**.
There are 7 items which describe self-perceived quality of performance: focusing on the
content and clarity of presentation, using examples to illustrate theory, motivating the peers in
the “audience” to join the discussion, managing the timing. A sample item: “During my part
of the presentation I was completely focused on the content of my speech.” Cronbach’s
coefficient alpha for the third part of the questionnaire was \( \alpha = .65 \). For the three scales
(individual study, group work and self-assessment of presentation), students rate themselves
on a 4-point scale, from 1 – not true to 4 - completely true.

In the last part of the questionnaire, students report on the frequency of negative (intrusive)
thoughts that come up in their minds during the presentation. Intrusive thoughts include
thoughts about one’s own inferiority, inadequacy, and anticipation of failure, negative social
evaluation and humiliation in front of a group. Students indicate on a 5-point scale how often
the intrusive thought was present during their presentation (1 – never present to 5 – present all
the time). The two intrusive thought scales **Intrusive Thoughts of Negative Self-Evaluation**
(6 items; \( \alpha = .82 \)) and **Intrusive Thoughts of Social Comparison and Social Evaluation** (8
items; \( \alpha = .86 \)) were adapted from the Questionnaire of Distractive Factors and Intrusive
Thoughts (QDFIT; Puklek, 1997). Examples of the two kinds of intrusive thoughts are: “I’m not relaxed.” and “My classmates, who are listening to me, are bored.”

**Achievement**

Teachers assessed a student presentation as excellent when the group presentation was clear, coherent, and when the presenters managed to involve the audience in a discussion. Students’ final course grade was taken as an indicator of academic achievement. Students obtain a final grade in the psychology course by taking a written examination composed of different types of questions: 30 short answer questions, 20 multiple-choice questions and 2 essays. It mainly covers the knowledge and understanding and application level of learning outcomes. In the last part of the exam (i.e. the essay part) students also have to reflect on theory and teaching practice.

**Procedure**

At the beginning of the academic year 2004/2005, undergraduate students (i.e. pre-service teachers) filled in the Motivated Strategies for Learning Questionnaire (MSLQ, Pintrich, Smith, Garcia, & McKeachie, 1991), in particular the part which assesses students' motivational orientations. During the academic year students prepared their seminar work in groups of three. The group had to decide on the topic and group members had to take individual responsibility for a particular task. At the beginning of the academic year, the teacher presented the criteria for the oral presentation. These cover the skills required for good presentation of the seminar work. Specifically, the criteria covered two aspects of the presentation: frontal presentation of the seminar topic (i.e., clarity, structure, use of different aids, etc.) and stimulation of interaction with the audience (i.e. maintain and direct attention by alternating different methods, stimulate activity by discussion or group work, etc.). Each group presented their seminar work to their colleagues (one group per one seminar session) and members of the group had to participate equally in the presentation. This activity was that part of students' psychology coursework which was not formally assessed by the teacher. After each presentation, the group of presenters received feedback from their colleagues and the teacher. At the end of a seminar session, members of the group filled in the three self-report scales. Each student assessed the quality of his/her individual study, analyzed the quality of group work and assessed his/her part of the oral presentation. Students also reported about the intensity of intrusive thoughts during their presentation. Students' achievement (i.e. subject knowledge) was measured by a written examination after completing the whole psychology course.

**Results**

According to their evaluations of individual preparation (IP) and group work (GW), students were assigned to one of the following groups: low IP-low GW, low IP-high GW, high IP-low GW, and high IP-high GW. Analysis of variance was performed to find out the differences between these groups in motivational dimensions, seminar work presentation and final academic success. Factor analysis of MSLQ (Puklek & Peklaj, 2006) did not reveal the same factorial structure as other authors propose (Pintrich et. al, 1991). We could not confirm the internal goal orientation as a separate motivational component. In further analysis the following motivational dimensions were used: extrinsic goal orientation, task value, control of learning beliefs, self-efficacy and test anxiety.
Table 1: Means, SDs, F-ratios for motivational dimensions for different groups of students: low IP-low GW, low IP – high GW, high IP – low GW, high IP – high GW.

<table>
<thead>
<tr>
<th>Motivation</th>
<th>Group work</th>
<th>Indiv. preparation</th>
<th>Low</th>
<th>M (SD)</th>
<th>N</th>
<th>High</th>
<th>M(SD)</th>
<th>N</th>
<th>IP</th>
<th>GW</th>
<th>Interaction</th>
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<td>Value components</td>
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<tr>
<td>Extrinsic motivation</td>
<td>Low</td>
<td>4.03 (1.23)</td>
<td>58</td>
<td>3.87 (1.34)</td>
<td>23</td>
<td>15.56***</td>
<td>2.11</td>
<td>0.39</td>
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<td></td>
<td>High</td>
<td>4.93 (1.11)</td>
<td>33</td>
<td>4.52 (1.16)</td>
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<td>Task value</td>
<td>Low</td>
<td>5.48 (0.73)</td>
<td>57</td>
<td>5.57 (0.68)</td>
<td>33</td>
<td>4.81*</td>
<td>3.88*</td>
<td>1.73</td>
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<td></td>
<td>High</td>
<td>5.60 (0.89)</td>
<td>25</td>
<td>6.02 (0.90)</td>
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<td>Expectancy components</td>
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<tr>
<td>Control of learning beliefs</td>
<td>Low</td>
<td>5.50 (1.04)</td>
<td>58</td>
<td>5.72 (0.86)</td>
<td>32</td>
<td>0.80</td>
<td>0.98</td>
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<td></td>
<td>High</td>
<td>5.42 (0.95)</td>
<td>25</td>
<td>5.51 (1.00)</td>
<td>68</td>
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<td>Self-efficacy</td>
<td>Low</td>
<td>5.34 (0.81)</td>
<td>56</td>
<td>5.53 (0.71)</td>
<td>32</td>
<td>0.30</td>
<td>1.31</td>
<td>0.02</td>
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<tr>
<td></td>
<td>High</td>
<td>5.45 (1.11)</td>
<td>24</td>
<td>5.58 (0.76)</td>
<td>70</td>
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<td>Affective components</td>
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<tr>
<td>Test anxiety</td>
<td>Low</td>
<td>3.52 (1.34)</td>
<td>57</td>
<td>3.24 (1.09)</td>
<td>31</td>
<td>4.73*</td>
<td>0.61</td>
<td>0.29</td>
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<tr>
<td></td>
<td>High</td>
<td>3.86 (1.39)</td>
<td>23</td>
<td>3.81 (1.27)</td>
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</table>

Table 1 shows the results of students’ motivational dimensions analysed according to their self-evaluations of individual preparation and group work. Analysis of variance showed significant main effects according to students’ individual preparation in three motivational dimensions, in extrinsic goal orientation, task value and task anxiety. Students with higher estimation of their individual preparation have higher extrinsic goal orientation than students with lower estimation of their individual preparation in seminar work in the psychology course. Students with high estimation of their individual preparation also had significantly higher task value than students with low estimation of individual preparation in the seminar work. The same holds true for the third significant difference according to individual preparation. Students with higher estimations of their individual preparation in general experience more test anxiety than students with low estimation of their individual preparation.
Only one main effect was found according to the estimation of students’ group preparation. Students with higher estimations of their group work had significantly higher results in task value than students with lower estimations. No significant interaction was found in motivational dimensions according to students’ estimation of their individual preparation and group work. To sum up, we can say that motivational differences in students can be better seen in students’ individual preparation than in group work.

Table 2: Means, SDs, F-ratios for seminar work presentation (intrusive thoughts and self-assessment) for different groups of students: low IP-low GW, low IP – high GW, high IP – low GW, high IP – high GW.

<table>
<thead>
<tr>
<th>Seminar work – presentation</th>
<th>Indiv. preparation</th>
<th>Group work</th>
<th>IP</th>
<th>GW</th>
<th>Interaction</th>
</tr>
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<tbody>
<tr>
<td>Intrusive thoughts</td>
<td></td>
<td>Low</td>
<td>High</td>
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<tr>
<td>Negative self-evaluation</td>
<td>Low</td>
<td>2.34 (0.86)</td>
<td>38</td>
<td>5.07*</td>
<td>0.21</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>2.16 (0.64)</td>
<td>75</td>
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<tr>
<td>Social evaluation</td>
<td>Low</td>
<td>2.42 (0.89)</td>
<td>38</td>
<td>0.45</td>
<td>0.67</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>2.41 (0.79)</td>
<td>75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-assessment</td>
<td>Presentation</td>
<td>Low</td>
<td>High</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.78 (0.35)</td>
<td>39</td>
<td>85.66***</td>
<td>0.25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.34 (0.33)</td>
<td>76</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2 shows the results of students’ presentation analysed according to their self-evaluations of individual presentation and group work. Significant main effects were found only according to students’ individual preparation. Differences were found in students’ intrusive thoughts, in negative self-evaluations. Higher degrees of reported negative self-evaluations were found in students with lower estimations of their presentation in comparison with students with higher estimations of their individual presentation. No main effect was found according to students’ estimation of their group work, and also no significant interaction in intrusive thoughts among the four groups.

Table 3: Frequencies and chi-square for excellent seminar presentation for different groups of students: low and high in individual preparation assessment and low and high in group work assessment.

<table>
<thead>
<tr>
<th>Teacher assessment of group presentation</th>
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Table 3 presents the results of analysis of the seminar presentations assessed as excellent by the teacher. Chi-square statistic showed that significant differences were found in frequencies of students who gave an excellent / not excellent presentation according to students’ individual preparation assessment. Students who assessed highly their own individual preparation were also more frequently assessed by the teacher as having an excellent presentation. Differences according to students’ assessment of their group work are not statistically significant, but a trend exists that students who were high in assessment of their group work were also more frequently assessed to have an excellent group presentation.

Table 4: Means, SDs, F-ratios for final course achievement for different groups of students: low IP-low GW, low IP – high GW, high IP – low GW, high IP – high GW.

Table 2 shows the results of students’ final grades in the psychology course analysed according to their self-evaluations of their individual presentation and group work. A significant main effect was found in students’ grades according to their estimation of their individual preparation. Students with higher final grades also estimated their individual preparation in seminar work higher than students with lower estimation of individual preparation. No significant difference was found in final grades according to estimation of group work and also no interaction.

Discussion

In teacher education, a lot of effort has to be devoted to developing their fundamental competencies, which will enable them to work successfully as an important agent of development toward the “knowledge society”. In different countries substantial energy has been directed toward defining and describing these competencies, especially in the framework of the Bologna reform of tertiary education in Europe. Regardless of the differences among these definitions, among the most frequently cited competencies are competencies of effective instruction, management and communication, assessment and collaboration (Peklaj, Puklek &
Požarnik, 2005). These competencies are also developed in the pre-service teacher education programs at the Faculty of Arts in Ljubljana. In a seminar course in educational psychology, the context for the development of these competencies was group work. In the present study we were interested in analysing students’ motivation and their academic success in relation to the quality of their individual and collaborative work in the seminar. The results of the study should enable us to see the connections of motivational dimensions, students’ work during the year and their achievement in order to get the feedback needed to change and improve the work in this particular subject.

Motivation is a starting point of any work in a certain course, it directs students’ activity and helps them to persist in study tasks through the school year. The analysis of motivational factors in our study showed that the value component of students’ motivation is the dimension that is related to their individual and group preparation. Task value is the dimension that was found to be different between four groups of students. The highest results in task value were found in students with high assessment of their individual and group preparation and the lowest results in task value were found in students with the lowest results in individual and group preparation. Students with high task value in the psychology course showed more individual accountability and group interdependence than students with low task value. The results in our study are consistent with research (Pintrich & De Groot, 1990, Wigfield & Eccles, 1992) which reveals that when students have an interest in the task, when they see its importance and value, this will predict their success.

A second important value component related only to students’ individual preparation was extrinsic motivation. Students to whom grades, competition and evaluations of other students are important also invested more effort in their own seminar preparation. The differences between low and high extrinsically motivated students are not seen in students with low in high assessment of their group work. The results are consistent with recent research on extrinsic motivation and performance orientation that showed their positive effects on performance too (Church, Elliot & Gable, 2001, Pintrich & Schunk, 2002, Senko & Harackiewicz, 2005).

Also the affective component (task anxiety) was a dimension connected with individual preparation. Students high on individual preparation were more anxious than students low in individual preparation. This result is not consistent with the majority of research in the field of test anxiety (Hambree, 1988, Pintrich & Schunk, 2002), which showed a negative relationship between anxiety and performance. The possible explanation of the result would be that anxious students invest more effort in their preparation to prevent embarrassment and a possible negative evaluation. This interpretation is consistent with Pekrun’s (2006) research, which showed a mixed direction of correlations of this learning emotion with performance (negative and sometimes positive).

During seminar work, presentation students are not always directed only to their presentation, their attention can be disturbed by other thoughts, this division of attention can impair their performance. Intrusive thoughts can be related to negative self-evaluation or negative social evaluation. In our study we found that students who were low in their estimation of individual preparation also report more intrusive thoughts with negative self-evaluations. The reason for negative self-evaluations in our study is probably not related to a high level of students’ test anxiety, but they can be the result of poor individual preparation and the correct estimation of the possibility that something might go wrong during the presentation.
When developing certain competencies, a safe and open climate in the group is a necessary condition for students to try different things and not to give up already at the beginning. In our seminar, making mistakes is allowed, they are the way to learn new skills. Students are given only feedback to their presentation, and only the excellent presentations are noted, which can bring students extra points that are integrated into their final grade. It was the reason that only students’ self-assessments and teacher assessments of excellent seminars were collected. The results of students’ self-assessments of their presentations showed that students with a higher level of individual preparation estimated their presentation as better than students with a lower level of individual preparation. A similar result is also seen in teachers’ nominations of excellent presentations. In both assessments only students’ individual accountability is revealed to be the most important factor that makes a difference. In excellent presentations a trend is shown of group interdependence adding to the quality of a presentation.

The final analysis was made to see differences in students’ final grades in the psychology course according to students’ individual presentation and group work. The results showed that students with higher levels of individual preparation in seminar work also get higher final grades than students with low individual performance. Student who are accountable and work hard during the seminar work will probably be the same students who will work hard also while preparing for final exams at the end of the year.

The quality of individual work and individual accountability in our study proved to be related to different aspects of motivation, to seminar work presentation and to different aspects of student achievement. Positive interdependence in group work was related only to task value in the psychology course and partly to very good seminar work. Very good presentation is not related only to individual effort but also to synchronous group efforts. In order to be successful students have to direct their effort first into their individual task, but in tasks that require group collaboration they also have to see the group goal as their own and participate actively in group endeavours.

Conclusion
The research results have some implications fro teaching practice. The results in our study showed that it is important to analyse different aspects that can influence students’ work in a specific university subjects. The most important motivational factor for student accountability during the academic year is their subjective task value for the subject they study. Teachers should therefore choose meaningful and authentic tasks in which students will see utility for future profession. With such tasks they can influence both the quality of students’ individual work and the quality of their group work in the subject.

Another motivational factor that can enhance the quality of students’ coursework is their extrinsic motivation. Teachers should be aware that the concept of extrinsic – intrinsic motivation is not one-dimensional (a continuum with two extremes), but two-dimensional. Students can be low or high in both, or low in one and high in the other. Extrinsic motivation can be most beneficial for the students who do not see the value of the subject at the beginning or their study. It can keep them working and eventually, if they can experience success in different activities, they may develop intrinsic motivation as well.

The affective components of students’ motivation importantly affect their learning, especially anxiety. They don’t just impair their performance and success, but also stimulate them to work harder and to use more suitable learning strategies to prevent negative outcomes. This aspect of anxiety is adaptive, but the necessary condition for it to really work in practice is an
open and non-judgmental atmosphere, where mistakes are allowed and seen as a part of the learning process.

For student success, their individual accountability is the most important component, but where group endeavour is necessary, students should invest their effort also into group work to achieve the best result. In teaching collaborative competencies, positive interdependence should be emphasised and social skills for successful team work promoted.

At the end, attention has to be directed also toward some deficiencies of the present study. The sample was rather small. In future research enlarging the sample of participating students would add to the validity of the results. Also, additional statistical analyses could be performed to establish which motivational dimension explains the largest portion of variance in students’ achievement. Some other measures of student performance (i.e. teachers, colleagues) would also add to the generalizability of results.

References:


