

FACILITATING STUDENTS' MOTIVATION AND LEARNING THROUGH COMPETENCE-BASED DIDACTIC UNITS

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Abstract. The purpose of the present study was to examine the influence of the “Competence-based didactic units” in vocational education on students’ motivation and self-regulated learning. The sample consisted of 115 males and 133 females (n=250) who were attending secondary vocational or technical schools in Slovenia. The students were included in an experimental project that introduced a “competence-based didactic unit” (CBDU) in vocational schools’ curricula. In our study, the introduction of the CBDU was used to measure changes in the motivational, cognitive, and metacognitive aspects of self-regulated learning and to examine how they were subsequently related to other students characteristics, such as gender, school performance and time spent on school work. The results show the importance of CBDUs, on the one hand, on motivational factors such as intrinsic goal orientation, task value, and self-efficacy, and, on the other hand, differences in gender and grade level. The findings are discussed in terms of how teaching strategies in vocational education can contribute to the development of individuals’ motivation.

Key words: vocational education, motivation, learning strategies, teaching methods, learning environment, authentic learning.

Introduction

Most contemporary theories of motivation and learning point out that, in addition to the cognitive and emotional determinants of an individual’s willingness to learn, the importance of the learning environment should be considered. In spite of the predominating belief that students and teachers must be addressed as whole, researchers were more inclined to isolate individual variables than to try to understand the complex interactions of thought, motivation, and emotion. Learning environment was always considered as an

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important component of academic achievement and academic performance, but the terms “learning environment” and “learning context” have gained an important role in mainstream educational research and literature only in the last two decades (e.g. Goodenow, 1992; Mouratidis, Vansteenkiste, Michou & Lens, 2013; Salomon, 1995; Schuitema, Peetsma & van der Veen, 2012; Stolk & Harari, 2014; Tlhoale, Hofman, Winnips & Beetsma, 2014). Examination of learning environments is closely related to the research on self-regulated learning and with issues of monitoring, guiding and managing our own learning and motivational processes (Pintrich, 2004; Zimmerman, 2008). In many previous studies different factors in learning environment (e.g. task structure, perception of the usefulness of learning, assessment type, classroom management etc.) have been examined and their affect on students’ use of learning strategies and their motivation (e.g. Anderman & Young, 1994; Church, Elliot & Gable 2001; de Bruijn & Leeman, 2011; Schuitema *et al.*, 2012).

Characteristics of Self-Regulating Students

Zimmerman (2008) defines self-regulated learning (SRL) as the level of metacognitive, motivational and behavioral activity in an individual’s own learning process. Students who actively regulate their learning often use different cognitive and metacognitive strategies that are systematically directed towards the achievement of learning goals (Mirkov, 2014; Pintrich, 2004). They also use strategies to regulate other sources of learning such as adaptation of certain aspects of the physical environment and the organization of time to learn so that they do become most efficient. Finally, students who self-regulate their learning have higher levels of self-efficacy, are confident in their abilities (positive attributions) and more internally motivated (Pintrich, 2004).

Zimmerman (2008) mentions three common characteristics of SRL models. Firstly, all students are aware of the usefulness of self-regulatory processes in improving their learning and learning achievements; thus, they deliberately and consciously use the specific processes and strategies to achieve better academic success. Secondly, student gives himself or herself feedback during learning (Carver & Scheier, 2002; Zimmerman, 2008). This feedback loop is a circular process in which students monitor the effectiveness of their learning methods or strategies and respond differently to these observations — from changes in self-perceptions or changes in behavior. A third common characteristic to all definitions of SRL is a description of how and why students choose different self-regulatory processes, strategies or responses.

The Relevance of Competence-Based Didactic Units for Self-Regulated Learning

In the context of educational psychology, the Competence-based didactic unit (CBDU) can be described as a powerful learning environment in which students learn with each other by practicing realistic job-related tasks (de Bruijn & Leeman, 2011; Herrington, Reeves & Oliver, 2014). The concept “powerful learning environment” refers to a learning environment in which complex skills and a deep conceptual understanding can be developed. The theoretical underpinning of powerful learning environments is derived from constructivist theories that emphasize learning as an active and collaborative process, in which learning is mostly problem-oriented and integrated into realistic situations that allow collaboration and interaction (e.g. de Bruijn & Leeman, 2011; Herrington, Reeves & Oliver, 2014; Stolk & Harari, 2014). Schuitema, Peetsma, and van der Veen (2012) investigated the correlation between students' SRL and their perceptions of the learning environment. Their results stress the importance of students' perception of the learning environment for the development of SRL. Therefore, it is particularly important to understand the effects of the environment in which learning takes place in order to understand students' motivation. Jossberger, Brand-Gruwel, Boshuizen and van de Wiel (2010) examined learning environments in vocational education and their impact on students' learning. They stressed the importance of self-directed learning (SDL) and self-regulated learning (SRL) skills, because students are required to work and learn independently in realistic work settings (Jossberger *et al.*, 2010).

The benefits of CBDUs and similar teaching strategies brings workplace situations to school and can therefore relate not only to better learning outcomes for students in vocational education but also to their motivation.

Context of the Study

Our study was carried out as part of the ‘Competence-based didactic unit in VET’ (CBDU) project that was led by the National VET Institute as a part of a project called ‘The Efficient Implementation of Educational Programs and Quality Assurance’ in years from 2010 to 2013 (Ermenc, Drobne & Štefanc, 2012). CBDU is understood as a sequence in the implementation of the program unit in which we educate and train students to handle complex work situations and develop professional skills. In doing so, we deliberately place them in circumstances similar to the actual circumstances they will encounter in authentic professional tasks.

We must stress that CBDUs cannot be equated with authentic working situations because they focus on wider educational aims and objectives. To enable the integration of professional knowledge, practical skills and general knowledge, the module teacher prepares an outline for several competence-

based didactic units. He or she discusses these CBDUs with other teachers, depending on the goals of each unit. Together, they produce concrete didactic plans that combine two general goals: supporting the development of students' vocational competences and supporting the development of their competences in key and general subject areas. Each module is usually divided into three parts: classroom teaching, practicing on the training range and field practice. The first part takes place in classrooms and is dedicated to theoretical knowledge. The second part takes place on the training range, where the teacher demonstrates the task or skills the students are learning. This activity is usually carried out in small groups and emphasises student collaboration. The third part (field practice) takes place in real working situations. Students work on various practical tasks, discuss different problems and issues with the teachers and develop their professional identity. The main idea behind this arrangement is to enable the students to integrate theory and practice. However, because the integration of theory and practice means the integration of not only narrow professional knowledge but also more transferable general knowledge, the module teacher cooperates with general subjects teachers as well.

Therefore, the CBDU implementation follows the fundamental steps of didactic macro-articulation of instruction: (1) the introductory phase; (2) the instruction phase, which focuses on theoretical knowledge; (3) the performing phase, which focuses on the development of skills and the integration of theoretical and practical learning; (4) the evaluation phase, which focuses on the identification of weak points and their eradication as well as rehearsal and (5) the final assessment phase (Ermenc, Štefanc & Mažgon, 2014). The teacher chooses competence-based didactic units when the students' ability to transfer knowledge to realistic work situations is crucial. On the other hand, when academic skills are of greater importance, the didactic units are discipline based.

Purpose and the aim of the study

The main purpose of our study is to examine the motivational, cognitive, and metacognitive aspects of students' learning in vocational education schools that were implementing CBDUs in their curricula. We will try to determine differences in these characteristics before and after the implementation of a CBDU. CBDUs are defined as "...the sequence in the implementation of each program unit in which students are educated and trained to handle complex work situations" (Ermenc, Drobne & Štefanc, 2012, p. 19). In doing so, students are deliberately placed in circumstances similar to the realities they will face in authentic professional tasks; they are theoretically and practically taken through the process of performing the required tasks; and engaged in a critical evaluation of the process once it is completed (Ermenc, Mažgon & Štefanc, 2014). Previous research has already shown a significant relationship

between the nature of learning environment and SRL (Jossberger *et al.*, 2010; Schuitema *et al.*, 2012). Our aim was to therefore to examine how does the characteristics of CBDUs as a more authentic and interdisciplinary learning environment affect students' motivation and self-regulation of learning. Our guiding research questions were:

1. Does students' involvement in CBDU affect differences in motivational, cognitive, and metacognitive aspects of SRL?
2. Are there any connections between gender, academic performance in the previous year, hours per week spent on doing school work at home, and grade level; and how are they influenced by involvement in CBDU?

METHOD

Subjects and Procedure

The survey was conducted in 10 Slovenian vocational middle schools that were included in the experimental introduction of CBDUs. Learning in experimental CBDUs lasted 1–4 weeks (approx. 5 hours per week) in each school. Our sample consisted of 226 students attending their second (n=151) or third (n=75) year of education in the 2011/2012 school year. These consisted of 94 boys and 130 girls. Researchers informed all students that their participation was voluntary and that their responses would be held in strict confidence. Students were asked about their motivation and learning both before and shortly after the implementation of CBDU. Before the first data collection, they were instructed to think about their motivation and the use of learning strategies in the subjects studied in the previous school year. Their answers after the second measurement were related to the motivational and learning strategies associated with learning subjects included in the CBDUs. The surveys lasted an average of 30 minutes.

Instruments

We used an adapted "Motivated Strategies for Learning Questionnaire" (MSLQ) developed by Pintrich and colleagues (Pintrich, Smith, Garcia & McKeachie, 1991). It is a self-report, Likert-type instrument designed to measure students' motivational orientations and their use of different learning strategies. Items are responded to on a 5-point scale (1=not at all true; 5=very true). The questionnaire was translated into Slovenian and distributed to the students. The MSLQ is based on a social-cognitive approach to motivation and learning, which is characterized by an emphasis on the interpenetration of the cognitive and emotional components of learning. Compared with other, similar instruments, MSLQ places more attention on the motivational processes that affect the self-regulation of learning. The contextual nature

of motivation and learning strategies is also emphasized. The questionnaire consists of two areas: motivation and learning strategies. The adapted version of the motivation section consists of 20 items and is divided into four subsections: (a) intrinsic goal orientation, (b) extrinsic goal orientation (c) task value, and (d) self-efficacy for learning and performance (self-efficacy). Goal orientation refers to the student's perception of the reasons why she is engaging in a learning task. In our study, goal orientation refers to the student's goal orientation toward a specific course as a whole. Intrinsic goal orientation concerns the degree to which the student perceives herself to be participating in a task for reasons such as challenge, curiosity, or mastery, while extrinsic goal orientation concerns the degree to which the student perceives herself to be participating in a task for reasons such as grades, rewards, competition, etc. (Pintrich *et al.*, 1991). Task value focuses on the reasons why an individual is engaged in an activity; expectations are based on the individual beliefs necessary to undertake the task; and the emotional component reflects an individual's emotional response to test situations. Self-efficacy is defined as self-appraisal of one's ability to master a task (Pintrich *et al.*, 1991) and includes judgments about one's ability to accomplish a task as well as one's confidence in one's skills to perform that task. The area of learning strategies is also divided into two subsections: (a) the use of cognitive strategies (including the use of basic and more complex learning strategies) and (b) metacognitive control strategies (which help an individual to control and direct learning).

We examined MSLQ measures and compared the students' scores across two grade levels (Grade 2 and Grade 3). Students were also asked to report their grade point average in the previous academic year (1=unsatisfactory, 2=satisfactory, 3=good, 4=very good, 5=excellent). The average academic performance for the whole sample was $M=3.31$ ($SD=0.75$). They were also asked to state the number of hours per week that they spent on learning and doing school work at home ($M=6.47$ hours per week, $SD=4.61$).

Statistical Data Analysis

As noted previously, before and after the implementation of CBDUs in curricula, students completed an MSLQ questionnaire. For measuring difference in motivation and the use of learning strategies before and after implementation of CBDU we used the the repeated-measures ANOVA. According to Leech and colleagues (2015) this statistical test is appropriate when you have one independent variable with two or more levels that represent the occasions on which repeated measures were made (Leech, Barrett & Morgan 2015). The data were analyzed using methods of descriptive statistics (i.e., frequency and means distribution of variables, dimensions of central tendency, correlation, and reliability analysis) and at the level of inferential statistics (i.e., Repeated measures ANOVA). The ANOVA was checked using Levene's test for the assumption of homogeneity of variances.

Results

We begin this section with examining the associations between variables included in the study. Data in Table 1 represent the results from the initial measurement and show the descriptive statistics and point-biserial correlation coefficients for students' gender, grade level, academic performance, and MSLQ variables (motivational and learning scales). A point-biserial correlation was run to determine the relationship between gender (girls=0, boys=1) and doing school work at home. Correlation analysis shows a moderate negative correlation. Girls devote more time to school work at home, than boys do. Working at home is positively correlated with academic achievement, through the setting of extrinsic goals and the use of cognitive and metacognitive strategies. For girls, it is typical that they set more extrinsic than intrinsic goals and use more cognitive and metacognitive strategies than boys do. For grade level, we did not find any statistically significant correlations except for doing school work at home. Students in the third year of education worked more hours at home than students in the second year did.

Table 1 also includes correlations of motivational and learning variables. In line with expectations, we found many statistically significant relationships. The highest was the correlation between intrinsic goals and task value. This means that students who set intrinsic goals for learning believe that the education they are involved in is useful for them and that they will gain benefits from this learning in the future. The setting of intrinsic goals is positively correlated with self-efficacy beliefs, critical thinking, and cognitive or metacognitive strategies. A high correlation was also evident among task value and self-efficacy.

CBDU's Impact on Students' Motivation and Learning Strategies Use

A repeated measures ANOVA was used to examine the potential effects of CBDUs (i.e., pre-test and post-test) on motivation and use of learning strategies (Table 2). Three statistically significant differences were found: in the area of self-efficacy, intrinsic goal-orientations and task value. All three variables have large effect size according to Cohen's benchmarks (Ellis, 2010). The analysis showed that CBDUs mostly affected changes in the perception of self-efficacy. Students felt more confident in their skills after participating in CBDU. The same positive effects of being a part of a CBDU are statistically significant also for intrinsic goal-orientation and task value. In both cases, their perception of learning relevance and learning goals increased. Other effects of the CBDU were not significant, indicating that scores of motivational and learning variables before and after the introduction of the CBDU were statistically similar.

Table 1: Correlations, Means, Standard Deviations, and Cronbach's Alpha of Dimensions of the MSLQ and Correlations with Gender, Grade Level, Academic Achievement and School Work at Home

	1	2	3	4	5	6	7
Gender	-.04	-.27***	.11	.08	-.26***	-.05	-.21**
Grade level	.03	-.08	.06	.08	.08	-.02	-.04
Academic achievement†	-.02	.11	-.09	.18*	.28**	.11	.22**
School work at home	.13	.24**	.09	.06	.39***	.19*	.35***
1. Intrinsic goals	-	.33***	.60***	.52***	.45***	.54***	.34***
2. Extrinsic goals	-	-	.37***	.27***	.43***	.28***	.51***
3. Task value	-	-	-	.67***	.43***	.38***	.27***
4. Self-efficacy	-	-	-	-	.35***	.38***	.28***
5. Cognitive strategies	-	-	-	-	-	.55***	.66***

Table 2: Means, Standard Deviation, and Repeated Measures ANOVA for Effects of CBDU on Students Learning and Motivation

	Initial Measurement		Post Measurement		ANOVA	
	M	SD	M	SD	F(1, 144)	η^2
Intrinsic goals	3.77	.62	4.02	.61	28.14***	.16
Extrinsic goals	4.03	.80	4.05	.74	.15	.01
Task value	4.07	.74	4.36	.56	22.53***	.14
Self-efficacy	3.80	.61	4.15	.52	60.10***	.29
Cognitive strategies	3.40	.68	3.46	.69	.83	.01
Critical thinking	3.63	.78	3.70	.76	2.97	.02
Metacognitive strategies	2.82	.92	2.96	.98	1.74	.01

Note. η^2 (Eta-squared) is a measure of effect size and ranges between 0 and 1. Effects size benchmarks: .01=small effect; .06=medium effect; .14=large effect (Ellis, 2010, p. 41).*** $p < .001$.

Table 3 shows the differences in motivational variables before and after the introduction of CBDU's with respect to students' background characteristics. Mixed Model ANOVA was used to observe differences in the variables that previously showed statistically significant effect of CBDU on students motivation or learning (i.e. self-efficacy, intrinsic goals and task value). Comparison with gender shows that CBDUs affect changes in motivation similarly in girls as well as in boys. Changes were increased across all four 'control' variables, but the differences between pre- and post-test were the largest for boys, especially in self-efficacy. Boys' intrinsic goal-orientation also improved due to CBDU, but not so much as with girls.

Also interesting are differences depending on grade level. The differences are all statistically significant, and it is important to emphasize that the introduction of CBDUs had more of an impact on the motivation of students in the second year, especially on self-efficacy and task value.

To compare students' previous academic achievements had any influence on effects of CBDU, we grouped students into two categories, namely, those with grade point average considered to be "insufficient" (grade 1), and "sufficient" (grade 2), in category "Low" and those who had achieved grades considered to be "very good" (grade 4) and "great" (grade 5) in category "High". We found no statistical differences between students' motivation that could be explained with their previous academic achievements.

Comparison with the amount of school work that students do at home has only revealed weak statistically significant differences in the area of task value but was important for pedagogical practice. Results show that those students who did less school work at home (6 hours or less) considered learning as more important after being involved in CBDUs. This presents good prospects for the future because it shows that their motivation improves, and we can assume that this will lead to increased involvement in education.

Discussion

In the current study, evidence is presented to show the impact of CBDUs on students in vocational education. We used MSLQ to measure changes in motivation and the use of learning strategies. In general, we can conclude that the introduction of CBDUs in curriculum contributed to changes in the setting of intrinsic goals, task value, and, especially, self-efficacy.

The primary aim of our study was to test if CBDUs as special learning environments introduced in vocational education have any affect on students' self-regulated learning (measured in motivational and learning scales). The answer to that question is positive, and consistent with other studies that looked at the relationship between students' motivation and the characteristics of their learning environment (Mouratidis *et al.*, 2013; Peklaj, Kalin, Pečjak, Valenčič Zuljan & Puklek Levpušček, 2012; Schuitema, Peetsma & van der Veen, 2012).

Table 3: Means, Standard Deviation, and Mixed Model ANOVA for Effects of CBDU on the Motivational Scales

	Intrinsic Goals				Task Value				Self-Efficacy			
	M1		M2		M1		M2		M1		M2	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Gender												
Female	3.77***	.61	4.10***	.58	4.00*	.71	4.41*	.56	3.76***	.61	4.26***	.48
Male	3.74***	.63	3.90***	.62	4.15*	.78	4.28*	.54	3.83***	.61	3.99***	.52
Academic achievement												
Low	3.74	.64	3.98	.75	3.73	.59	4.14	.50	3.28	.65	3.26	.63
High	3.81	.59	4.12	.87	3.91	.63	4.19	.54	3.62	.69	3.78	.67
School work at home												
0-6 hours	3.76	.62	4.05	.61	4.00*	.79	4.39*	.54	3.75	.61	4.13	.53
7+ hours	3.80	.60	4.00	.60	4.20*	.66	4.33*	.57	3.88	.62	4.21	.47
Grade level												
2 nd grade	3.72***	.64	4.17***	.57	3.86***	.83	4.45***	.52	3.66***	.66	4.26***	.52
3 rd grade	3.81***	.60	3.86***	.61	4.30***	.56	4.26***	.58	3.94***	.52	4.04***	.49

Note. Grade coded 1, 2, 3 = low, 4, 5 = high. *p<.05, **p<.01, ***p<.001.

In study by Mouratidis et al. (2013), “well-structured” (e.g. clarity of expectations, teacher’s help and support) learning environments facilitated students’ use of effective learning strategies and promoted positive attitudes toward school. Similarly, the research that was conducted by Peklaj et al. (2012) identified the sense of students’ connectedness to their self-determination and their contextual level of motivation. Authors found that the classroom environment affected the development of the students’ intrinsic motivation and the types of goals that the students set. In our study, the use of learning strategies did not improve, but more positive beliefs toward learning did – students’ perceptions of relevance and intrinsic motivation increased. This can be (in our opinion) seen as the original purpose of introducing CBDUs, because students who are involved in them are faced with authentic professional situations while gaining specific “academic” knowledge of subject areas in the context of a learning situation. For example, learning a language is no longer just a “school subject” that the student needs to learn but “a professional competence” that is needed for the pursuit of a profession, and students are well aware of the importance of this knowledge. We can conclude that the CBDUs allowed the students to gain a more practical insight into the competencies they had acquired in the educational program. On average, this self-awareness allowed the students to increase their motivation in the classroom.

Although previous studies and meta-analyses predicted a strong correlation between stimulating learning environments and the use of learning strategies (Whipp & Chiarelli, 2004), in our case, this relationship proved to be weak. The absence of a significant correlation can be attributed, on the one hand to the students’ poor self-reflection on their learning processes, and on the other hand, on the complexity of the learning situations that CBDUs introduced. Research on metacognition showed that the individual does not use learning strategies when a learning situation is assessed as non-demanding (Veenman & Spaans, 2005).

Finally, we were interested to see how a CBDU influences their motivation and to identify differences, if any, in gender, grades, time spent at home doing working for school (“homework”), and differences in grade level. Differences were only observed for the motivational variables that were impacted by the CBDU (i.e., Intrinsic Goal Orientation, Task Value, and Self-Efficacy). In our study, only gender and grade level had a statistically significant impact on motivation as a result of CBDUs.

The correlation of gender to different motivational constructs has been researched many times, but in general, no clear pattern of gender differences have been found in students’ achievement goals, task value, or self-efficacy (Anderman & Young, 1994; Huang, 2013; Meece, Glienke & Burg, 2006; Minnaert, 1999; Pajares & Valiante, 2001). Anderman and Young (1994) examined gender differences in self-regulated learning by specific learning context and found that girls had a significantly higher total SRL score

than boys did, even after controlling for differences in achievement. Similar conclusions come from research carried out by Pajares and Valiante (2001). Huang (2013) performed a meta-analysis of research on gender differences in academic self-efficacy and analyzed 247 studies. The author concluded that males have slightly higher academic self-efficacy than females do and that content domain was a significant moderator in explaining variation in gender differences in academic self-efficacy. In our study, we found gender differences across all observed motivational measures. Positive changes were detected across all four variables, but the differences between pre- and post-test were larger for girls, especially in self-efficacy. Boys' motivation also improved as a result of CBDUs, but not so much as with girls' did. Similarly, other studies suggest that girls are generally more intrinsically motivated and tend to report higher levels of self-efficacy and task value (Pajares & Valiante, 2001).

Our findings on grade differences showed statistically significant differences, and it is important to emphasize that the introduction of CBDUs had more of an impact on the motivation of students in the second year, especially during the first and second measurement of improved self-efficacy and task value. These results seem to be congruent with previous studies suggesting lower motivation at higher levels of schooling (e.g., Anderman, Maehr & Midgley, 1999; Watt, 2008; Yeung, Lau & Nie, 2011). Lower motivation of students in 3rd grade across genders is consistent with previous research showing that both boys and girls tend to have lower academic motivation as they grow up (e.g., Anderman, Maehr & Midgley, 1999).

In contrast to several other studies (Lee, Lim & Grabowski, 2010; Mega Ronconi & De Beni 2014; Vrugt & Oort, 2008), we found no or very few significant associations between students' previous academic performance or time they spend working at home and changes in motivation. It is possible that the specific educational programs were not too demanding and did not require the additional effort of working at home and studying a lot. Many studies confirm this hypothesis and show that student motivation and the use of learning strategies increase in optimally demanding situations and decrease in learning situations that are too easy for the students (Pintrich 2004; Veenman & Spaans, 2005).

Conclusions

Many previous studies have found that learning in powerful learning environments has several benefits on students' learning and motivation and our study established that. A major contribution of this research is the confirmation of influence that implementation of CBDU salient had on students' motivational beliefs in vocational education. The results showed that CBDU significantly influenced students' learning goal orientation, task value and self-efficacy.

The study showed a shift from setting more extrinsic goals in the first measurement to intrinsic goals, increased perception of usability and usefulness of gained knowledge in the second measurement. The fact that students recognized these aspects as being the most important indicates that the CBDU helped to increase students' awareness of the future importance and usefulness of the knowledge acquired in school. The same conclusions apply to increased self-efficacy and the mastery of future professional skills. Study showed great improvement of these beliefs that were, in our opinion, caused by learning in, practicing and experiencing genuine job situations. All of this shows the positive impact on students' approaches and attitudes toward learning of introducing CBDUs into the educational process.

Although statistical analysis confirmed that the introduction of CBDUs has a quantitative and qualitative impact on motivation, we should acknowledge that there are some limitations to our study. One of the shortcomings concerns the educational programs that were included in the study. The students were fragmented across different programs (services, social sciences, and technical occupations), which could have affected how the introduction of the CBDUs affected the students' motivation and their approaches to learning; however, the impact on strategy use appears to have been small. Another problem was the way that the data was collected. Since the study was based on self-reported data, the assessments of the students largely depended on their self-observation, self-reflection, and self-knowledge. If the students were not self-aware and did not reflect on their learning, it would be impossible for them to recognize and report the subtle changes in their approaches to learning. One of the limitations could also be that the CBDU was introduced for a limited period (few weeks) and for some larger effect on students it should be longer or even become everyday practice.

Although we came across some limitations, our work produces valid research findings in the field of educational psychology, and didactical strategies in vocational education that acknowledges the importance of student activity in authentic work situations during the learning process. It also stresses the importance of interdisciplinary cooperation between teachers and collaborative planning of learning in vocational education.

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Данијела Маковец Радован и Марко Радован
ПОДСТИЦАЊЕ УЧЕЊА И МОТИВАЦИЈЕ УЧЕНИКА
ПУТЕМ ДИДАКТИЧКИХ ЈЕДИНИЦА ЗАСНОВАНИХ
НА КОМПЕТЕНЦИЈАМА

Анстракт

У истраживању се разматра утицај „дидактичких јединица заснованих на компетенцијама“ у стручном образовању на мотивацију ученика и саморегулисано учење. Узорак је обухватио 115 ученика и 133 ученица (N=250) који похађају средње стручне или техничке школе у Словенији. Ученици су били део експерименталног пројекта чији је циљ да уведе „дидактичку јединицу засновану на компетенцијама“ у наставне програме стручних школа. У овом истраживању увођење „дидактичких јединица заснованих на компетенцијама“ користи се како би се утврдило промене у мотивационим, когнитивним и метакогнитивним аспектима саморегулисаног учења и како би се испитало на који начин су оне повезане са другим карактеристикама ученика, као што су пол, школски успех и време проведено у изради школских задатака. Резултати показују да, с једне стране, постоји велики утицај дидактичких јединица заснованих на компетенцијама на мотивационе факторе као што су интринзичка оријентација према циљу, вредност задатка и самоефикасност. С друге стране, јављају се разлике с обзиром на пол и разред. Налази се разматрају у светлу могућег доприноса наставних стратегија у стручном образовању развоју мотивације код појединца.

Кључне речи: стручно образовање, мотивација, стратегије учења, наставне методе, околина за учење, аутентично учење.

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ПООЩРЕНИЕ УЧЕБНОЙ ДЕЯТЕЛЬНОСТИ И МОТИВАЦИИ УЧАЩИХСЯ
ПУТЕМ ДИДАКТИЧЕСКИХ ЕДИНИЦ, БАЗИРУЮЩИХСЯ
НА КОМПЕТЕНЦИЯХ

Резюме

В исследовании рассматривается воздействие „дидактических единиц, базирующихся на компетенциях“ в среднем специальном образовании на мотивацию учащихся и саморегулированную учебу. Исследованием был охвачен корпус из 115 юношей и 133 девушек (N=250) – учащихся средних специальных школ и профтехучилищ в Словении. Учащиеся явились частью экспериментального проекта, цель которого – внедрить „дидактическую единицу, базирующуюся на компетенциях“ в учебные программы специальных школ. В данном исследовании внедрение „дидактических единиц, базирующихся на компетенциях“ используется в целях выявления изменений в мотивационных, когнитивных и метакогнитивных аспектах саморегулированной учебной деятельности, а также выявления их связей с другими характеристиками учащихся, такими, как пол, успеваемость в школе и время, проведенное в выполнении учебных задач. Результаты показывают, что, с одной стороны, наблюдается значительное воздействие дидактических единиц, базирующихся на компетенциях, на такие мотивационные факторы, как интринзическая целевая установка, ценность учебной задачи и самооффективность. С другой стороны, появляются различия, связанные с полом и возрастом. Результаты рассматриваются в свете потенциального вклада учебных стратегий, применяющихся в специальном образовании, в развитие мотивации у учащихся как индивидов.

Ключевые слова: специальное образование, мотивация, стратегии учебной деятельности, методы обучения, учебная обстановка, подлинная учебная деятельность.