

Development of Some Notions of the Learning to Learn Competence in Students of Primary Education in Slovenia

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Abstract

The learning to learn competence is becoming more and more important, as it enables efficient learning, is developing awareness and planning one's own process of learning. With empirical research, we wanted to study some of its aspects in the 4th year (undergraduate) and 1st year students (postgraduate) of the Faculties of Education in Slovenia. To establish the students' evaluation of their ways of learning and competence to teach we used a questionnaire. With the use of the research, we established the growth of evaluation of the majority of aspects, which shows that the learning to learn competence is related to a better evaluation of students' own way of learning and better marks. Reported findings reveal that this competence and its aspects have a great impact on the effectiveness of learning and success of students.

Keywords: *lifelong learning, learning to learn competence, undergraduate students, postgraduate students, Faculties of Education in Slovenia*

Introduction

In today's time when the only constant is change, the development of the learning to learn competence is particularly important. The European Commission pointed out the importance of this competence in 2006 and proposed to all members of the Union to place the competence in the curricula at all education levels. The learning to learn competence was defined as "the ability to learn and

persist in learning, to organize one's own learning, including through effective time and information management, both individually and in groups" (Official Journal of the European Union 2006, 16). Amalathas (2010) lists the following skills which the learning to learn competence enables individuals: independent and lifelong learning, an ability to take account of individual needs, to adapt to change and a capability of self-reflection on work and learning, motivation, knowledge of strategies and ways to choose to learn effectively, self-confidence, an ability to learn with and from others, etc.

Stringher (2006) gathered 40 different definitions of learning in her study, and found out that the concept of the learning competence covers a variety of factors. One of them is self-regulation of learning, which Zimmerman (Schunk and Zimmerman, 1994) describes as a cyclical process, where learners observe and monitor the applied strategies of learning, changes and self-efficacy, and on this basis adapt and replace ineffective strategies for those which they deem to be more efficient. The development of self-regulation is very important because it has a significant impact on learning outcomes (Bakracevic Vukman and Licardo, 2010). A student who has well-developed self-regulatory abilities knows how to set his/her goals, is aware of the effectiveness of learning, knows how to manage time and knows how to use cognitive and metacognitive strategies in learning (Bakracevic Vukman, Funcic Masic and Schmidt, 2013).

Cognition and cognitive strategies play an important role in the development of the learning to learn competence as they enable complex thinking, the skill of information processing, mental habits and the acquisition of effective learning strategies (Ažman, Jenko and Sulič, 2011). In addition to cognition, a major role is played by metacognition, which in the 1970s Flavell defined as the knowledge about cognitive processes (Bakračević Vukman, 2010). Metacognition should enable students to be aware of how to plan learning, monitoring, the evaluation and explanation of their own learning process, the capability of assessing the appropriate methods of teaching and self-reflection (Ažman, Jenko and Sulič, 2011), and have a significant impact on academic achievements.

Effective learning is influenced by understanding the impact factors of successful learning, which include the efficient use of available learning time. It is important that students learn to plan their own learning and schedule work tasks as individuals or as a group. This helps them to maintain learning motivation on which it depends what the thoroughness of learning and the quality of the results obtained will be like (Binder, Keller and Thiel, 1999). Besides planning time, the management of information skills is important. If students have developed the skills of individual searching, reviewing, collect-

ing, processing and presenting information, as individuals or as a group, their learning will be more effective.

Moreno (2006) states that the majority of students do not study in order to learn, which would help them in lifelong learning, but they learn primarily to pass exams. This way of thinking leads to their learning specific contents without understanding the contents or the processes taking place. That is contrary to the objectives of educational institutions that want to lead students to quality knowledge. Therefore, it is important that students' acquiring adequate knowledge about the learning to learn competence and its factors will help them in achieving better learning outcomes.

For many years, research into the learning to learn competence has been carried out within the EU member states. One of the studies, which was conducted in 2007 in Slovenia (Licardo, 2009), showed that the development of the learning to learn competence is associated with the attitude to education and school achievements and that regulation of emotions and metacognition has the greatest influence on learning achievements. According to Licardo (2009), the results of the conducted study confirmed the importance of the learning to learn competence in the educational process and that students' performance depends on the development of it.

Research Methodology

The purpose of the study was to examine how individual learning to learn competences are developed in students of primary education. We wanted to find out how students evaluate individual statements, which reflect the individual factors of learning to learn competence, which are:

- efficiency of time management in the organizing of learning
 - as an individual and
 - in a group
- effectiveness of information management in the organizing of learning
 - as an individual and
 - in a group,
- effectiveness of the cognitive aspects of learning,
- effectiveness of the metacognitive aspects of learning and,
- one's own attitude toward education.

We also wanted to determine whether there are, regarding individual factors, any differences among average achievement in previous year and the evaluation of their own way of learning.

The study was based on a descriptive and causal non-experimental method of empirical pedagogical research. In the study, there were 305 4th year level 1 and 1st year level 2 students included who studied in the programme of Primary Education at the faculties of education in Slovenia in the academic year 2014/2015. For data collection, we used a questionnaire with verified metric characteristics (validity, reliability, objectivity). To measure the individual factors of learning to learn competence, which were evaluated by the students using a variety of statements (statements adapted according to Licardo, 2008), we used a rating scale (1–5).

The data were analyzed using SPSS statistics program, where we used basic descriptive statistics. Statistically (in)significant differences between various factors were examined using analysis of variance differences (ANOVA), where commonly general F-test was used. Where the assumption of homogeneity of variances was not justified, we indicated the outcome of Welch F-test.

A broader presentation of the research results is available in the paper by Koprivnik (2015).

Results and Interpretation

First, we examined how students of the faculties of education evaluated individual statements related to factors that reflect the learning to learn competence.

Table 1. Results of basic descriptive statistics in the overall results of individual factors of learning

Factors	N	MIN	MAX	$\bar{x}_{\text{state-ments}}$	\bar{x}	s	SKEW	KURT
Time management in the organizing of learning as an individual	305	9.00	20.00	3.5590	14.2361	1.84338	-0.129	0.784
Time management in the organizing of learning in a group	305	3.00	15.00	2.5596	7.6787	2.27581	0.356	0.100
Information management in the organizing of learning as an individual	305	6.00	24.00	3.5705	17.8525	2.26991	-0.448	1.529
Time management in the organizing of learning in a group	305	6.00	30.00	4.0328	24.1967	3.85775	-0.586	0.802
Cognitive aspects of learning	305	8.00	25.00	3.8715	19.3574	3.00769	-0.289	0.235

Factors	N	MIN	MAX	$\bar{x}_{\text{state-ments}}$	\bar{x}	s	SKEW	KURT
Metacognitive aspects of learning	305	6.00	30.00	3.8219	22.9311	3.83352	-0.542	1.091
Attitude toward education	305	5.00	26.00	4.3370	21.6852	3.06819	-1.268	2.632

(N – number of students, MIN – minimum, MAX – maximum, $\bar{x}_{\text{statements}}$ – mean of statements, – mean, s – std. deviation, SKEW – skewness, KURT – kurtosis)

The results showed that the students best evaluated the statements of the factor *Attitude toward education* ($\bar{x}_{\text{statement}} = 4,3370$), while the lowest grade was given to the factor *Time management in the organizing of learning in a group* ($\bar{x}_{\text{statement}} = 2,5596$). We assume that the low grades of the latter suggest the problem of group work forms, namely that professors at universities, despite their increasing awareness that students in group work forms are more actively involved in the learning process and achieve good results (Peklaj, 2001), do not make sufficient use of them.

Below we present the results of the analysis of statistically significant differences in individual factors of the learning to learn competence with regard to:

- average achievement of the previous year, and
- evaluation of one's own way of learning.

Table 2. Results of the analysis of differences verification variance in the assessment of individual factors of the learning to learn competence with regard to the last year's average learning achievement

Factors	Learning achievement	N	\bar{x}	s	F1	P1	F2	P2
Time management in the organizing of learning as an individual	6.00–7.99	50	13.5400	1.80939	0.363	0.696	6.532	0.002
	8.00–8.99	198	14.2475	1.84539				
	9.00–10.00	57	14.8070	1.68437				
Time management in the organizing of learning in a group	6.0–7.99	50	8.0600	1.77752	2.446	0.088	0.929	0.396
	8.00–8.99	198	7.6364	2.30847				
	9.00–10.00	57	7.4912	2.53633				
Information management in the organizing of learning as an individual	6.00–7.99	50	17.2000	1.60357	4.943	0.008	4.983	0.008
	8.00–8.99	198	17.8636	2.31012				
	9.00–10.00	57	18.3860	2.50538				

Factors	Learning achievement	N	\bar{x}	s	F1	P1	F2	P2
Information management in the organizing of learning in a group	6.00–7.99	50	23.3200	3.70019	0.070	0.932	1.890	0.153
	8.00–8.99	198	24.2626	3.86862				
	9.00–10.00	57	24.7368	3.89380				
Cognitive aspects of learning	6.00–7.99	50	18.4800	2.64375	0.658	0.519	4.530	0.012
	8.00–8.99	198	19.3333	3.07767				
	9.00–10.00	57	20.2105	2.87064				
Metacognitive aspects of learning	6.00–7.99	50	21.0000	3.60838	0.233	0.792	13.302	0.000
	8.00–8.99	198	22.9141	3.71684				
	9.00–10.00	57	24.6842	3.65063				
Attitude towards education	6.00–7.99	50	20.7200	3.27040	0.450	0.638	3.102	0.046
	8.00–8.99	198	21.8283	3.00098				
	9.00–10.00	57	22.0351	3.00574				

(N – number of students, \bar{x} – mean, s – std. deviation, F₁, P₁ – test of homogeneity of variances, F₂, P₂ – ANOVA)

The results of F-test show that there are statistically significant differences in factors: *Time management in the organizing of learning as an individual* (P = 0.002), *Information management in the organizing of learning as an individual* (P = 0.008), *Cognitive aspects of learning* (P = 0.012), *Metacognitive aspects of learning* (P = 0.000), and in the factor *Attitude to education* (P = 0.046).

The averages show that those students who grade better the factors *Time management in the organizing of learning as an individual*, *Information management in the organizing of learning as an individual*, *Cognitive aspects of learning*, *Metacognitive aspects of learning* and assess more positively the factor *Attitude toward education*, have better academic achievements. The results were predicted, as each of the factors listed significantly contributes to achieving better learning achievements. Effective time management is one of the important aspects of the learning to learn competence that contribute to achieving better outcomes (Bakračević Vukman, 2010). A great role is also played by well-developed information management skills that enable us to acquire our knowledge more systematically and effectively. Students' academic performance is also dependent on properly developed cognitive abilities that allow for a proper understanding and processing information and lead them to a specific objective (Vermunt, 1989), and develop metacognitive abilities that have a major impact on how an individual learns. The more developed these abilities are, the higher possibilities an individual has to achieve the set

goals, learn their study material better (Pintrich and Schunk, 2002) and achieve better academic outcomes. In her study on some aspects of the learning to learn competence and its relationship with academic achievements, Licardo (2008) drew the conclusion that metacognition has the highest correlation coefficient with school performance. Additionally, Moreno (2006) found that a positive attitude to education significantly contributes to academic achievement.

Table 3. Results of analysis of differences verification variance in the assessment of individual factors of the learning to learn competence with regard to the assessment of one's own way of learning

	Assessment of one's own way of learning	N	\bar{x}	s	F1	P1	F2	P2
Time management in the organizing of learning as an individual	Very poor, poor	11	13.4545	2.69680	0.878	0.453	13.454	0.000
	Neither poor nor good	68	13.3529	1.69075				
	Good	199	14.3819	1.74798				
	Very good	27	15.7037	1.26536				
Time management in the organizing of learning in a group	Very poor, poor	11	7.9091	2.58668	0.508	0.677	2.978	0.032
	Neither poor nor good	68	8.3676	2.39965				
	Good	199	7.4925	2.15057				
	Very good	27	7.2222	2.48586				
Information management in the organizing of learning as an individual	Very poor, poor	11	17.0000	2.14476	1.012	0.388	11.536	0.000
	Neither poor nor good	68	16.8382	1.87370				
	Good	199	18.0151	2.25961				
	Very good	27	19.5556	2.08167				
Information management in the organizing of learning in a group	Very poor, poor	11	23.2727	4.62798	1.993	0.115	14.052	0.000
	Neither poor nor good	68	22.3971	3.75416				
	Good	199	24.3970	3.66090				
	Very good	27	27.6296	2.45181				
Cognitive aspects of learning	Very poor, poor	11	18.3636	3.00908	1.006	0.390	12.066	0.000
	Neither poor nor good	68	17.8382	3.20732				
	Good	199	19.6583	2.76592				
	Very good	27	21.3704	2.48299				
Metacognitive aspects of learning	Very poor, poor	11	17.3636	4.36515	0.907	0.438	39.079	0.000
	Neither poor nor good	68	20.5147	3.47912				
	Good	199	23.5126	3.20961				
	Very good	27	27.0000	2.58695				

	Assessment of one's own way of learning	N	\bar{x}	s	F1	P1	F2	P2
Attitude toward education	Very poor, poor	11	19.2727	2.96954	1.776	0.152	7.505	0.000
	Neither poor nor good	68	20.7500	3.28895				
	Good	199	21.9296	2.97380				
	Very good	27	23.2222	1.94804				

(N – number of students, \bar{x} – mean, s – std. deviation, F₁, P₁ – test of homogeneity of variances, F₂, P₂ – ANOVA)

The results of the F-test showed that there are statistically significant differences among arithmetic means in all the factors of the learning to learn competence in relation to the assessment of one's own way of learning.

The results showed that in most cases the students who better evaluate the individual factors of learning, better estimate their own way of learning as well.

From the presented average values we can see that the students who rate the factor *Time management in the organizing of learning as an individual* better, rate their own way of learning higher than the students who manage time worse. The average values for the factor *Time management in the organizing of learning in a group* show that the students who consider their own way of learning as worse, rate their ability of time management at learning in a group higher. The latter results were not expected, since we had assumed that in both cases, in accordance with the increase in the rates of time management (as an individual and in groups), the assessment of one's own way of learning would have also increased. Proper time management, nevertheless, is one of the important strategies of effective learning and has an important impact on rating one's own way of learning (Binder, Keller and Thiel, 1999).

The students who rate the factors *Cognitive aspects of learning* and *Metacognitive aspects of learning* higher have a better opinion about their own learning style. The results obtained were expected, because we believe that students who are aware of the capabilities of their own learning and also rate it higher, possess more developed cognitive and metacognitive abilities which are very important for effective learning. These refer to effective acquisition of a new knowledge and adjusting the characteristics of one's own way of learning. The influence of metacognition on rating one's own way of learning is also supported by Magajna (1996), who states that metacognition affects the individual's perception of self as a learner, which can be associated with being aware of and evaluating one's own way of learning. The results show that the students who rate the factors *Information management in*

the organizing of learning as an individual and in a group higher also estimate their own way of learning better. Developed skills of information management, such as searching, organizing, sorting, presenting material should therefore contribute to a better assessment of one's own way of learning both as an individual and in a group.

Conclusions

In 2006, the European Parliament and the Council presented the key competences for lifelong learning and one of these is learning to learn. According to experts, it is one of the key competences because it represents an important means for students' future, enabling them a successful integration with the labor market and free movement of the labor force across the European Union. The aim of the EU policy is to increase the quality of education for all its members, a great contribution to it is the aforementioned competence that allows students to learn effectively.

In our study we wanted to highlight the importance of developing certain factors of the learning to learn competence and to determine how these abilities appear in the Slovenian students of primary education, how they impact on their academic success and the assessment of their own way of learning.

We discovered that the students best evaluate the factor *Attitude to education*. The result is good, because previous studies show a positive correlation between the appropriate attitudes to education and achieving good learning outcomes. The factor *Time management in the organization of learning in a group* has proved to be the worst estimated. The students told us that it is hard work doing a task in a certain time so they adapt poorly to the scheduling of work in groups. The latter arguments are worrying because recent findings show that learning in a group makes students more actively involved in the learning process and achieve better results. Results indicate the fact that the students of Faculties of Education in Slovenia during training do not gain sufficient relevant experience, skills or encouragement in relation to work in groups, which leads to poor results in this sort of work. We believe that professors and mentors need to make greater use of collective forms of work and learning. They need to support students in using these techniques and ensure well-planned tasks and activities that make such work and learning possible. The following results showed that individual factors of the learning to learn competence are correlated with the achievement of learning outcomes and evaluating their own way of learning. In doing so, the participants emphasized

the factor of *Metacognitive aspects of learning*, which was marked as one of the best factors. Metacognition and metacognitive abilities should, in fact, have a significant impact on the effectiveness of learning, which is a positive indicator of the condition in Slovenian faculties. In this study, we showed the real state of the development of the learning to learn skills in colleges for primary school education in Slovenia and confirmed the importance of the development by students, on whom it depends how their pupils will develop the aforementioned competence. We believe that given the importance of the learning to learn competence and to promote lifelong and effective learning, similar research should be conducted in all the countries of the European Union and thus, the situation in the EU member states could be compared. With mutual cooperation on the basis of the obtained results it would globally contribute to better development and implementation of the learning to learn competence, registered in the Official Journal of the European Union, and it would also be included in students' curricula at universities and other educational institutions.

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