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ScienceDirect

Procedia - Social and Behavioral Sciences 174 (2015) 251 – 258

Procedia
Social and Behavioral Sciences

INTE 2014

Investigation of the relationship between study approaches and self-regulated learning skills of teacher candidates

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Abstract

This study aims the investigating the relationship between study process and their self-regulated learning skills of teacher candidates. This research is designed as relational scanning model. In the study, 2 scales are used as tool of data collection: Self-regulating Learning skills (SRLS) Scale, developed by Turan (2009), Study Process Questionnaire (SPQ) revised by Biggs, Kember & Leung (2001), adapted in Turkish by Yılmaz & Orhan (2011a). 272 Teacher candidates from Turkish, Science, social studies, elementary school, mathematics, psychological counseling-guidance education forms the sample of the study. In order to analyze the data, SPSS 16.00, ANOVA, independent t-test, Pearson correlation coefficient techniques are used. At the end of the study, between SRLS scale with profound approach factor of SPQ has a positive relation and with superficial approach factor of SPQ has a negative relation. The significant differences weren't found between the graduated secondary schools with scales; but according to gender and to the department, significant differences were found between SRLS scale with superficial approach factor of SPQ.

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Peer-review under responsibility of the Sakarya University

Keywords: Learning skills, study approach, profoundly learning, superficial learning.

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1. Introduction

In today's society, one of the most important goals of education is to raise individuals, who take responsibility of their own learning with an approach taking individual differences into account, who are able to think fast and creatively, have the control of their learning processes and actively take part in these processes, trust their capabilities and use them in a positive way. In this training process, self-regulation capability which one can lead and transfer his mental capabilities and abilities to learning experience is of great importance. In literature, many different definitions have been made. With its most common form, it can be defined as the process of individual's acquiring, improving and transforming knowledge, skills and values. Different definitions about self-regulated learning have also been made and various models have been developed (Yüksel, 2013). According to Zimmerman (1989; cited in Gömleksiz & Demiralp, 2012), "self-regulating is the degree to which students actively participate in their own learning process in terms of metacognition, motive and behavior". Pintrich (2000; cited in McDonough, 2001) defined self-regulated learning as "an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior, guided and constrained by their goals and the contextual features in the environment".

Self-regulated learning can be defined as one's knowing himself and all the techniques, tactics and strategies he uses to learn on his own. This means that it's the task of one's setting his own goals and motivating himself cognitively in accordance with their own principles (Çiltaş, 2011). Self-regulation is a deep and intrinsic mechanism which holds careful, deliberate and considerate student behaviors on the basis. It is an individual's capacity to control his motives whether to do something or not Bodrova and Leong, (2005; cited in Gömleksiz & Demiralp, 2012). Cole and Chan (1994; cited in Gündoğdu, 2006) see teaching self-monitoring in relation to self-regulated learning as very important. They assert that the teacher and students should have close partnership on defining criteria, establishing monitoring, assessment and recording procedures. They also claim that self-regulation must be supported if students are to gain a useful repertoire of learning strategies for selection and implementation according to the demand of the tasks. So, students constantly monitor their use of strategies and take relevant action accordingly.

When it is taken into account that self-regulation can be developed, a teacher should keep these teaching principles in mind: Students should be guided for an effective learning environment, Education program should be designed in a way which promotes cognitive learning, Students should be provided with educational goals and feedbacks so that they can observe their progress, Students should consistently be provided with the information needed for self-assessment Ley & Young (2001; cited in Gömleksiz & Demiralp, 2012). In this aspect, it is important that candidate teachers are aware of these issues. A variety of studies done in recent years show that there is a great amount of teachers' strategies which help students improve their self-regulated learning skills. In general, strategy is the implementation of a plan which is built to achieve a goal or a way which is taken to gain something. That is, learning strategies are the ways to learn (Açıkgöz, 2003). According to Zimmerman (1989; cited in Üredi & Üredi, 2007), learning strategies are the processes which learners use to gain target information and skills which they think are useful. These strategies are also defined as self-regulated strategies or self-regulated skills as they help them organize their learning processes. Modern learning and teaching theories also including Structural Learning Theory which argues that students should have a more active role in the learning process, points out that students' being active in the learning process is mostly related to their learning styles and strategies (Kutlu & Korkmaz, 2013). The fact that students do not have enough information about how to study or what to do in terms of study skills affects their academic success negatively (Açıkgöz, 2005).

Individuals may not use learning strategies at a suitable level for their individual differences and objectives of their own from time to time. This lack of use leads to different levels of learning outcomes at the end of the learning process. Students are prone to prefer a strategy which is fully indexed to the exams especially in an environment where there is a competitive education system. At this point, one of the topics studied is the question of what the students' objectives are during learning process; while some students set off in order to fully understand a subject, some others are just involved in the learning process so as to achieve their goals and meet their expectations in the soonest time. In the literature, strategies which students have adopted during learning process and activities which they use in terms of those strategies are found out to be deep and superficial (Beydoğan, 2007, Yılmaz & Orhan, 2011b). Learning approaches mean the aim to learn a specific point and the varieties of the activities to be chosen;

and they include the strategies that learners use during studying and the reasons why they choose these strategies. In this sense, individuals choose either “sophisticated learning” or “superficial learning”. If they understand the subjects at higher level, it means that they adopt sophisticated learning; if their understanding is at lower level, it means that they have superficial learning style (Ozan, Köse & Gündoğdu, 2012, cited in Batdal Karaduman, 2013).

Studies show that student-centered teaching is related to deep learning approach, and vice versa, teacher-centered teaching is related to superficial learning approach. In-depth learning approach increases student learning outcomes, helps him gain the skill to do in-depth analysis, increase his creativity, gives opportunity to organize the information efficiently and shape the information so that it is suitable for the theme. During superficial learning, learner cannot relate current information area to other information areas. What students can usually remember are small pieces of information in presentations which are based on superficial learning. Students who prefer this approach just want to meet the needs of the task, memorize the information for evaluating, fail to differentiate principles from samples, thinks that learning is an external force (Beydoğan, 2007; Yılmaz & Orhan, 2011b; Özgür & Tosun, 2012; Batdal Karaduman, 2013).

2. Aim of the Research

This study aims the investigating the relationship between study process and their self-regulated learning skills of teacher candidates.

The Problem Statement: Is there a connection between study process and their self-regulated learning skills of teacher candidates?

Sub Problems:

1. What are teacher candidates’ study approaches? How do teacher candidates’ study approaches vary according to the varieties of gender, department, and graduated secondary school?
2. What are teacher candidates’ learning skills? How do teacher candidates’ study approaches vary according to the varieties of gender, department, and graduated secondary school?
3. Is there a connection between study process and their self-regulated learning skills of teacher candidates?

3. Methods of the Research

In this study, quantitative research method and relational screening model has been used.

3.1. Sample of the Research

The population of this study is formed by 272 teacher candidates from departments of Turkish, Science, social studies, elementary school, mathematics, psychological counseling-guidance education at Education Faculty. 38 of Students (14.0%) are from the department of Turkish, 47 of them (17.3%) are from the department of Science, of 47 them (17.3%) are from the department of social studies, of 50 them (18.4%) are from the department of elementary school, of 36 them (13.2%) are from the department of mathematics and of 54 them (19.9%) are from the department of psychological counseling-guidance education, 169 of students (62.1%) are female and 103 of them (37.9%) are male.

3.2. Data Collection Instruments

Study Process Questionnaire (SPQ) Scale: It is developed in 1987 by Biggs, the pioneer of Study Process Questionnaire Scale which is adapted to Turkish language by Yılmaz & Orhan (2011a). After that this scale was revised in 2001 and a new scale with 20 items was developed. For each item, the options of ‘very untrue of me or somewhat true of me (1)’, ‘somewhat true of me (2)’, ‘true of me in 50 per cent (3)’, ‘usually true of me (4)’, ‘true of me every time or almost every time (5)’ were provided by using a 5 level Likert type scale for answering the questions in the scale (Biggs, Kember & Leung, 2001, quoted by Yılmaz & Orhan, 2011a). In this sense, the score

interval for deep and superficial approaches changes between 10 and 50. The student’s learning approach changes according to which approach he gets higher point.

Self-regulating Learning Skills (SRLS) Scale: In the study; Self-regulating Learning Skills (SRLS) Scale, developed by Turan (2009) to determine university students’ self regulated learning skills was used as the data collection tool. The response range of the scale is from “definitely disagree” (1), “disagree” (2), “uncertain” (3), “agree” (4) to “completely agree” (5). The minimum and the maximum score that can be taken from the scale are between 41-205. Five-point Likert type scale includes 41 items and four subscales named motivation and action to learning (7 items), planning and determining aims (8 items), strategy using and assessment (19 items), and lack of self-directedness (7 items). These subscales are in harmony with the theoretical framework of the study. Cronbach’s alpha reliability coefficients for the scale and four subscales were 0.91 and 0.88, 0.91, 0.83, 0.76 respectively (Turan, 2009).

3.3. Analyzing Data

SPSS 16.00 is used to analyze the data. ANOVA, independent t-test and Post-Hoc test techniques have been conducted to monitor the scores taken from the scales in terms of demographic varieties. PEARSON correlation coefficient analysis technique is applied in order to observe the relations between scales. In all statistical processes significance at a level of .05 has been sought.

4. Findings

The research findings are evaluated in the context of sub-problems.

Sub Problem 1. What are teacher candidates’ study approaches? How do teacher candidates’ study approaches vary according to the varieties of gender, department, and graduated secondary school?

The minimum and the maximum score that can be taken from the SPQ scale are between 10-50 for the first factor profound approach and the second superficial approach. In this study, Students’ average score for the first factor which is profound approach is found as 31.6029; and average score for the second factor which is superficial approach is found as 28.3125 (Table 1).

Table 1. Distribution of scores of students taken from SPQ Scale according to the factors.

SPQ Scale Factors	X	SD	SE
Profound Approach	31.6029	.40655	6.70494
Superficial Approach	28.3125	.47057	7.76082

As in Table 2, as a result of independent group t-test applied to define whether the scores taken from the SPQ factors differentiate according to the gender variable; for the second factor superficial approach score the difference between the arithmetic average of the groups have been found statistically significant. Male students’ score average is significantly higher than the Female students ($p < .05$).

Table 2. The results of Independent group t-test of the scores taken from SPQ Scale factors according to the gender variable of students.

SPQ Scale Factors	Group	N	X	SD	SE	T test		
						t	df	p
Profound Approach	Female	169	31.4911	6.61358	.50874	-.352	270	.725
	Male	103	31.7864	6.88085	.67799			
Superficial Approach	Female	169	26.8935	7.40820	.56986	-3.966	270	.000
	Male	103	30.6408	7.79876	.76843			

As seen in Table 3 as a result of ANOVA which is done in order to determine whether the scores taken from the Profound Approach and Superficial Approach factors show a significant difference according to the department variable; for the superficial approach factor scores the difference between the arithmetic average of the group has

been found statistically significant but the difference has been found to be insignificant for the profound approach factor. Following this process Post-Hoc analysis techniques are started to be applied.

Table 3. The results of ANOVA applied to define whether the scores taken from SPQ Scale factors differentiate according to the department variable of students.

SPQ Scale Factors	N, X and SD Values				ANOVA Results					
	Group	N	X	SD	Var. K.	SS	df	MS	F	p
Profound Approach	Turkish	38	30.2895	6.06232	Between	220.484	5	44.097	.981	.430
	Science	47	32.5957	7.28506	Within	11962.633	266	44.972		
	Elementary School	50	31.9800	7.36093	Total	12183.118	271			
	Social Studies	47	32.3191	6.71503						
	Mathematics	36	30.1389	6.15585						
	Psychological Counseling-Guidance	54	31.6667	6.30364						
	Total	272	31.6029	6.70494						
Superficial Approach	Turkish	38	27.5000	7.58288	Between	1053.360	5	210.672	3.67	.003
	Science	47	28.5957	8.02350	Within	15269.078	266	57.403		
	Elementary School	50	31.1200	8.16073	Total	16322.438	271			
	Social Studies	47	28.9787	7.12463						
	Mathematics	36	29.0000	6.57702						
	Psychological Counseling-Guidance	54	25.0000	7.60834						
	Total	272	28.3125	7.76082						

After analysis ANOVA; to determine how changed in superficial approach factor score among sub-groups, considering the department variable, LSD test has been chosen from among the post-hoc analysis techniques; because of group variance are homogen according to the Levene’s test ($L=.811, p>.05$). As a result of this test it has been stated that, Science, Social Studies, Elementary School, Mathematics educations students' scores are significantly higher than Psychological Counseling-Guidance education students, Elementary School education students' scores is significantly higher than Turkish education students for the superficial approach factor.

As a result of ANOVA which is done in order to determine whether the scores taken from the SPQ first and second factors show a significant difference according to the graduated secondary school variable; for both factors scores the difference between the arithmetic average of the group has been found to be insignificant statistically.

Sub-Problem 2. What are teacher candidates’ learning skills? How do teacher candidates’ study approaches vary according to the varieties of gender, department, and graduated secondary school?

The minimum and the maximum score that can be taken from the SRLS scale are between 41-205. In this study, the taken total SRLS scale score was calculated as 157.7206 (Table 4).

Table 4. Distribution of scores of students taken from SRLS scale and factors.

SRLS scale and Factors	X	SD	SE
Motivation and action to learning	28.4706	.21444	3.53672
Planning and determining aims	31.7096	.30036	4.95368
Strategy using and assessment	73.8603	.56766	9.36207
Lack of self-directedness	23.6801	.31515	1.07392
Total	157.7206	5.19763	17.71158

As in Table 5, as a result of independent group T-test applied to define whether the scores taken from the SRLS scale and factors differentiate according to the gender variable; for the SRLS scale total score, Planning and determining aims factor score and Lack of self-directedness factor score the difference between the arithmetic average of the groups have been found statistically significant. Female students’ score average is significantly higher than the Male students ($p<.05$).

Table 5. The results of Independent group t-test of the scores taken from SRLS scale and factors according to the gender variable of students.

SRLS scale and Factors	Group	N	X	SD	SE	T test		
						t	df	p
Motivation and action to learning	Female	169	28.5266	3.30416	.25417	.334	270	.738
	Male	103	28.3786	3.90353	.38463			
Planning and determining aims	Female	169	32.1893	4.87824	.37525	2.058	270	.041
	Male	103	30.9223	4.99939	.49260			
Strategy using and assessment	Female	169	74.6923	9.15345	.70411	1.886	270	.060
	Male	103	72.4951	9.58335	.94428			
Lack of self-directedness	Female	169	24.7988	4.69115	.36086	4.548	190.340	.000
	Male	103	21.8447	5.48216	.54017			
Total	Female	169	160.2071	17.40138	1.33857	3.010	270	.003
	Male	103	153.6408	17.54035	1.72830			

Result of ANOVA which is done in order to determine whether the SRLS scale and factors show a significant difference according to the department variable; for the SRLS scale total score, Strategy using and assessment factor score and Lack of self-directedness factor score the difference between the arithmetic average of the group has been found statistically significant. Following this process Post-Hoc analysis techniques are started to be applied. After analysis of ANOVA; to determine how changed in SRLS scale total score, Strategy using and assessment factor score and Lack of self-directedness factor score among sub-groups, considering the department variable, Tamhane test has been chosen from among the post-hoc analysis techniques; because of SRLS scale and Strategy using and assessment factor group variance are not homogen according to the Levene’s test ($L=2.806$, $L=2.249$ $p<.05$), LSD test has been chosen from among the post-hoc analysis techniques; because of Lack of self-directedness factor group variance are homogen according to the Levene’s test ($L=1.089$, $p>.05$).

As a result of this test it has been stated that, Psychological Counseling-Guidance education students’ score is significantly higher than Elementary School education students' score for the SRLS scale. Social Studies education students’ score is significantly higher than Elementary School education students' score for the Strategy using and assessment factor. Turkish education and Psychological Counseling-Guidance education students’ scores are significantly higher than Elementary School education students' score for the Lack of self-directedness factor.

As a result of ANOVA which is done in order to determine whether the scores taken from the SRLS scale and factors show a significant difference according to the graduated secondary school variable; for both scale and factors scores the difference between the arithmetic average of the group has been found to be insignificant statistically.

Sub-Problem 3. Is there a connection between study process and their self-regulated learning skills of teacher candidates?

As a result of Pearson Multiplication Momentum Correlation Analysis, conducted to define the relations between the SPQ scale factors and SRLS scale and factors; SPQ scale Profound Approach factor score and SRLS scale score, Motivation and action to learning factor, Planning and determining aims factor, Strategy using and assessment factor scores have a significant positive relation while SPQ scale Superficial Approach factor score and SRLS scale and factors have a significant negative relation (Table 6).

Table 6. Pearson Multiplication Momentum Correlation Analysis Results conducted to define relations of the SPQ Scale factors and SRLS scale and factors.

SRLS scale and Factors	SPQ	
	Profound Approach	Superficial Approach
Motivation and action to learning	$r=.319(**)$	$r=-.195(**)$
Planning and determining aims	$r=.366(**)$	$r=-.244(**)$
Strategy using and assessment	$r=.461(**)$	$r=-.151(*)$
Lack of self-directedness	$r=-.065$	$r=-.455(**)$
SRLS scale Total	$r=.391(**)$	$r=-.320(**)$

5. Results

In this study, it has been found out that, students' averages of deep approaches as approaches to studying overweigh the averages of superficial approaches. The results of some studies done with teacher trainees support these findings (Sezgin Selçuk, Çalışkan & Erol, 2007; Ekinci, 2009; Senemoğlu, 2011; Özgür & Tosun, 2012; Batdal Karaduman, 2013).

It has been observed that the averages of male students' superficial approach are notably higher than the averages of female students' superficial approach. According to this, it can be said that male students prefer superficial learning approaches more than female students. Through literature, different results have been found in the studies which research the relationship between gender and learning approaches: the results of Ozan, Köse, & Gündoğdu's (2012) and Özgür & Tosun's (2012) studies are in parallel with our findings. However, Senemoğlu (2011) have found out that the averages of female students' superficial approach are notably higher than the averages of male students' superficial approach. On the other hand, Sezgin et al. (2007) and Batdal Karaduman (2013) has not found any meaningful differences in terms of gender.

According to the departments, it has been identified for superficial learning approach that, teacher trainees at science, mathematics, primary education, social studies departments got notably higher grades than teacher trainees at PCG department; and, teacher trainees at primary education department got notably higher grades than teacher trainees at Turkish language teaching department. This finding, as Özgür & Tosun (2012) also stated in their studies, may be a result of the characteristics of the department, students' own personality traits and the differences of the features of teaching-learning environment.

No meaningful results have been found in terms of the relation between the type of high school graduated and deep and superficial learning approaches. On the other hand, in Özgür & Tosun's study (2012), the type of teacher trainees' high school graduates has an influence on their choice of learning approaches. Anatolian High School graduates prefer deep learning approaches more than the ones who graduated from other types of high school.

For the sub-dimensions of the scale of teacher trainees' self-regulated learning skills as "Motivation and taking action for learning", "Planning and Setting the goal", "Strategy use and evaluation" and "Dependency in learning", the students got the highest score in Strategy use and evaluation and lowest score in Dependency in learning. It has been found out that total average points of female students' scale are notably higher than male students. This result is in parallel with Yüksel's (2013) study. However, in the study done by Gömleksiz & Demiralp (2012), it was stated that the teacher trainees' views on the overall issue and the sub-dimensions of self-regulated learning skills scale do not differ statistically according to the gender parameter.

It has been found out that the averages of teacher trainees' total scale of self-regulated learning skills and the points of their sub-dimensions do not differ according to the type of High School they have graduated.

A meaningful positive correlation between the in-depth learning studying approaches and the scale of self-regulated learning skills, motivation and taking action for learning, planning and setting goals, strategy use and evaluation factors; A meaningful negative correlation between the superficial learning studying approaches and the scale of self-regulated learning skills and related factors.

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