

Examining Problem Solving Skills of Physical Education and Sport Students from Several Factors

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ABSTRACT

In this research, problem solving skills of university students are examined in the factors of sex and class. In this research problem solving inventory that is improved by Heppner and Petersen (1982) is applied to the students that are training 1. and 4. class 58 female 86 male at Selcuk University Konya, Turkey Physical Education and Sport Collage. In statistical analysis of research for the factors sex and class, variance analysis and t test are used. In the research while meaningful difference is found in the above dimension of the factors sex and there is not found meaningful difference in the factors of class. In conclusion, female students have more positive problem solving skills than male students.

Key words: physical education, sport, student, problem solve, sex, class

Introduction

Nowadays, rapid (quick) developments in technological and scientific areas have become more influential with their all pros and cons (positive and negative sides) on people in comparison with the past decades. So, there is too much need to take necessary precautions for different problems addressing social change and development which have been the results of technological age. There is also so much need for precautions to make people have more adaptive power for social changes and developments, and make them solve the problems (difficulties) more easily. It seems that people needs to have satisfactory (sufficient) points of views to solve the problems because of the difficulties of the diversity and the complexity of the problems.

There has been many different definition of problem solving. According to one definition, problem solving is the process of overcoming all difficulties in attaining an objective (a goal)¹. According to Morgan² problem solving is to find the best way to overcome the difficulty. For Heppner and Krouskopf³, problem solving is defined as being cognitive and influential behavioral processes for the harmony of external and internal demands and desires. Problems solving might be defined as creating new solutions by the way of effective sampling when facing

with obstacles in real life. Problem solving might also be defined as person's ability in finding the reason of the problem, creating an alternative solution and making a decision at the end for the person's accordance with him/her self and his/her environment⁴.

The person's ability to overcome problematic situations depends on his/her cognitive evaluations and his/her concentration on the problem⁵. Individuals are very important in solving personal problems³. Solving personal problems is related with general personal adaptation problems⁶. In the studies concerned with problem solving, it has been found that problem solving has related with willing to die⁷, physical health⁸, improving a career⁹ and academics performance¹⁰.

It has become clear that individuals who do not solve their problems effectively are more anxious and more insecure and more insufficient to understand other people's expectations than the individuals who have the skill to solve their problems effectively. It has also become clear that individuals who do not overcome the difficulties effectively have more emotional problems than the individuals who solve their problems effectively¹¹. Additionally, it has been found out that ineffective problem solving causes psychological inharmoniousness and stress¹².

Methods of problem solving change according to what kind of problems they are and the complexity of the problems. Some problems can be solved logically. Some problems need emotional (psychological) maturity to solve them. Some problems entail a new perception (perspective) to focus on them¹³. Solving real life problems is a creative problem solving which needs the ability to think logically and conceptually¹⁴.

Nowadays, any human being or any organization does not work effectively and productively without any inter relationship with other systems. Relationships and dependencies make unusual activities more important and it has also become clear that this situation needs individuals who can work in an interdisciplinary way. It seems that problems and their solutions must be dynamic and this causes perpetual transformation. These conditions show that there is need to bring up reflective, productive, creative, inquisitive individuals. These needs make the importance of problem solving clearer to involve it in our education system as a thought process. In education of the individual, to give an important role to improvement of the problem solving skills helps the individual to make proper choices by shaping their life. Problem solving is a skill that lasts throughout all life of a person (Aksu, 1988). Moreover, it seems that the most independent variable that makes students who have low degree in general academic performance advance their degree in academic performance is the ability of problem solving (Sümbül, Gürses, 2001).

The ultimate objective of education programs is to teach students to solve all the problems which they can face to face in their lives and their subjective¹⁵. It seems that it is not possible for persons who do not have sufficient experience in problem solving during their childhood and their youth to compensate their lack of experience in a short time¹⁶. A school environment which unifies many different individuals from each other with respect to their natures, their skills and their needs and supply materials for children in their growing up and their improvement is a proper place for choosing, knowing and solving problems¹⁷.

For this reason, the activities which will be realized in education programs of schools to improve students' improvement in problem solving is going to be helpful for students in solving their problems which they face to face both in their life and in their education.

Method

Participants

The sampling of this research involves 144 university students from the Department of Physical Education and Sport College in Selcuk University.

Measures and procedure

In this research, an information form which was prepared by the researcher and Problem Solving Inventory who was developed by P.P. Heppner and C.H. Petersen¹⁸

and adapted by N. Sahin, N.H. Sahin and P.P. Heppner¹⁹ was used. Problem Solving Inventory is a scale (measure) for individual to perceive his/her problem solving skills and to evaluate him/herself. It is applied to adolescents and to grow-ups. It includes 35 subjects (clause) and the scale between 1 and 6 is like Likert Scale. The high points getting from the scale shows that individual perceives him/her self as being insufficient for his/her problem solving skills. In the reliability search done by researchers it has been found out that the scale of Cronbach Alpha coefficient of reliability has been 0.88. Coefficient of reliability has been found out as being $r=0.81$ by the method of splitting in two which means to separate even numbers subjects from odd numbers subjects²¹. All these factors are explained below.

Quick Approach: It measures whether the individual acts without thinking to solve the problem or not. That is, it measures whether the individual acts according to the first idea that comes to his/her mind or not.

Reflective Approach: It measures whether the individual acts by reflecting on the problem or not. It measures whether the person acts by concerning all information about the problem or not.

Abstention (Skeptical) Approach: It measures whether the person has doubts to overcome the problem or not when s/he gets unsuccessful result because of his/her solution.

Evaluative Approach: It measures whether the person reflects upon all the ways to solve the problem or not. And it also measures whether s/he analyses his/her feelings to understand what s/he feels or not.

Self-reliable Approach: It shows the person's self – confidence in problem solving. It also measures whether the person sees him/her self as sufficient for problem solving.

Planned Approach: It measures whether the individual comes to the solution by evaluating all data in a planned way to solve the problem. It measures whether the individual only focuses on one problem to solve or not.

Analysis of data

The independent variables of this research are gender and class. It was used Analysis of Variance (ANOVA) and t test in the statistical analysis of this research.

Results

When Table 1 is analyzed, by comparing the results according to the gender of university students, it seems that there is no significant difference among quick approach, reflective approach, evaluative approach, self – reliable approach, and planned approach. But, it also seems that there is a significant difference in abstention approach between female and male university students. According to the points, it seems that female students are more skillful in problem solving than male students. These results show that female university students do

TABLE 1
COMPARISON OF T-TEST OF PROBLEM SOLVING SKILLS OF UNIVERSITY STUDENT ACCORDING TO THEIR GENDER

Sub-Scales	Gender	n	Mean	Std. Deviation	t	p
Quick Approach	Female	58	27.95	5.32	-0.610	0.54
	Male	86	28.62	7.10		
Reflective Approach	Female	58	10.45	3.78	-0.148	0.88
	Male	86	10.55	3.99		
Abstention Approach	Female	58	8.41	3.36	-2.167	0.03
	Male	86	9.79	4.24		
Evaluative Approach	Female	58	6.71	2.51	0.254	0.80
	Male	86	6.59	2.83		
Self-Reliable Approach	Female	58	10.22	3.47	0.938	0.35
	Male	86	10.79	3.67		
Planned Approach	Female	58	7.90	2.83	1.258	0.21
	Male	86	8.53	3.21		

TABLE 2
COMPARISON OF T-TEST OF PROBLEM SOLVING SKILLS OF UNIVERSITY STUDENTS ACCORDING TO »CLASS« VARIABLES

Sub-Scales	Class	n	Mean	Std. Deviation	t	p
Quick Approach	Junior	64	28.00	6.36	-0.580	0.56
	Senior	80	28.63	6.51		
Reflective Approach	Junior	64	10.30	4.18	-0.570	0.57
	Senior	80	10.68	3.66		
Abstention Approach	Junior	64	8.81	3.63	-1.169	0.244
	Senior	80	9.57	4.18		
Evaluative Approach	Junior	64	6.44	2.94	-0.786	0.433
	Senior	80	6.80	2.49		
Self-Reliable Approach	Junior	64	10.19	3.69	-1.116	0.267
	Senior	80	10.86	3.50		
Planned Approach	Junior	64	7.92	3.28	-1.230	0.221
	Senior	80	8.56	2.87		

not approach abstention to solve their problem when their points are compared with the points of male university students.

By comparing the results of Table 2 according to »class« variable, it seems that there is no significant difference among quick approach, reflective approach, abstention approach, evaluative approach, self – reliable approach, and planned approach.

Discussion and Conclusion

When problem solving skills of university students are examined with respect to gender variable, a significant difference among all approaches has been found out only in abstention approach. When this results is analyzed, it seems that female university student have more positive problem solving skills than male university students. Additionally, this result shows that female students are less doubtful than male students when they are

not successful in applying their solution to the problem. Arslan (2001) has found out a significant difference between female candidate teachers and male candidate teachers with respect to self – reliable approach. According to this result male candidate teachers have more positive problem solving skills than female candidates in respect of the self – reliable approach.

When problem solving skills of students are examined with respect to class variable, no significant difference has been found out in respect of all sub-scales. In Arslan’s research¹⁴ about candidate teachers, it has been found out that junior students have more positive mean points in respect of mean points of class variable with respect to the quick approach and senior students have the most negative mean students.

The results the research shows that when the problem solving skills of the students is examined, only significant difference has been out in abstention approach among all sub – scales. It shows that female students

have more positive problem solving skills than male students. And it also seems that there is no significant difference with respect to the class variable in problem solving skills of university students.

According to the results of this research, a few proposals might be developed.

More detailed studies about different factors which can influence problem solving skills of students must be done.

More activities and studies which can improve problem solving skills of students and make students have more self – confidence on problem solving must be done.

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RAZMATRANJE VJEŠTINE RJEŠAVANJA PROBLEMA STUDENATA KINEZIOLOGIJE

SAŽETAK

U ovom su se istraživanju proučavale vještine rješavanja problema studenata s obzirom na spol i godinu studiranja. Koristio se Inventar za rješavanje problema, koji su unaprijedili Heppner i Petersen (1982.), a on je primjenjivan na 58 studentica i 86 studenata prve i četvrte godine Kineziološkog fakulteta na Sveučilištu Selcuk u Konyi, Turska. S obzirom na spol i godinu studiranja, u statističkom dijelu obrade podatka korištena je analiza varijance i t-test. Rezultati pokazuju da je nađena značajna razlika s obzirom na spol, no nikakva s obzirom na godinu studiranja, kada se radi o vještini rješavanja problema. Iz navedenoga se može zaključiti da studentice ima razvijenije vještine rješavanja problema od studenata.