

## Evaluation of The Readiness of Vocational School of Health Services' Students

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**Abstract**

The evaluation of students' readiness can contribute to education in many ways, such as ensuring the development and the adequacy of education, and the quality of the program.

The aim of this study is to measure the levels of readiness of the Vocational School of Health Services' students in the mentioned fields.

The research was a cross sectional study. "Metacognitive Awareness Inventory(MAI), Communication Skills Assessment Scale(CSA), Problem Solving Inventory(PSI), Self-Assessment Form(SAF)" were used as data collection tools. Data were collected using the self-filling technique at the beginning of the 2015-2016 academic year. Voluntary consent was given.

Research was carried out with first year students of seven different programs. All students enrolled in the program (n=156) were included in the study. Data were collected from 146 students, two who were repeating the first year were excluded. Access rate was 92.3%.

The mean age was  $20.27 \pm 3.78$  (min:18-max:9). 70.8% of students are female. 50%, 43.8%, and 5.6% of students grew up in a city, town, village respectively. 36.8% of students' mothers graduated from primary school, 38.2% of students' fathers from high school. 34% of students graduated from Anatolian High School.

Students' mean score for CSA, MAI, PSI and SAF was  $100.78 \pm 16.12$  (min:58-Max:120),  $191.25 \pm 38.48$  (min:108-max:245),  $132.83 \pm 33.02$  (min:32-max:173).  $80.85 \pm 20.43$  (min:29-Max:107) respectively.

**Keywords:** Vocational School of Health Services, Readiness, Cognitive Skills, Problem Solving, Communication Skills, Self-Assessment.

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**Introduction**

Maturation brings new competencies and also the readiness required for individuals to gain new and more complex patterns of behaviour. However, readiness involves, not only the maturation level of the individual, but also prior learning, interests, attitudes, motivation level, talents and general health status (Senemoğlu, 2012). At this point, Bloom's statement "Readiness is background of the students" is relevant. A successful academic environment may be made possible by introducing a mastery learning model based on the status of readiness into the educational system. One of the prerequisites for mastery learning is determining students' level of readiness (Pinar, et. al., 2014). At this stage, the determination or measuring of readiness emerges as a critical issue.

It is assumed that higher education student has gained some proficiencies throughout his academic life, and the education program is structured accordingly. The aim is for students to have achieved the following skills on from the vocational school of health services:

- To have the required contemporary theoretical and practical knowledge in the relevant field.
- To be able to meet the physical requirements of the field, and be familiar with the required material and technology, and be able to use these appropriately.
- To have the competency to recognize and analyze problems, and develop solutions in the field.
- To be able to satisfy requirements through innovative thinking.

- To be able to communicate effectively.
- To take responsibility and work cooperatively in practical application.
- To be able to discuss and evaluate the scientific data based on of knowledge of the field.
- To realize the importance of lifelong learning, to be aware of the need to follow developments in science and technology, and to engage in self development.

Some different evaluation methods need to be developed to measure these competencies. Metacognitive awareness, communication skills, problem solving, self-assessment and vocational skills may be used for evaluation of the readiness in these skills. The concept of metacognitive awareness is important for the operation of mental processes such as understanding, interpretation and making inferences (Bakioğlu et. al., 2015). Communication skill is a skill which is required to improve coping strategies in order to deal with problems more effectively and to meet professional requirements. Many previously studies show that the development of effective communication skills by health professionals has a positive effect on patients (Daniel 1988, Evans et. al. 1998). Problem-solving is necessary to overcome challenges, problems and obstacles in daily life. The majority of energy and time are spent on problem solving processes (Korkut, 2002). Self-assessment skill refers to a person's ability to determine subjectively his/her own general abilities and skills (Köydemir, 2006). An individual's positive or negative assessment and perception of self is considered as self-assessment.

The evaluation of students' readiness can contribute to education in many ways, such as ensuring the development and the adequacy of education, and the quality of the program.

A teacher who understands the needs of students can increase the efficiency of education by providing an appropriate learning environment and learning activities in accordance with these requirements.

The aim of this study is to measure the levels of readiness of the students in the above mentioned areas through Metacognitive Awareness Inventory (MAI), Communication Skills Assessment Scale (CSA), Problem Solving Inventory (PSI), and Self-Assessment Form (SAF).

### Methods

The research was a cross-sectional study, in which data were collected from Vocational School of Health Services, İzmir University of Economics (IUE) at the beginning of the 2015-2016 academic year. The population of the research consists of all students of the Vocational School of Health Services.

As mentioned, the research included all students at Izmir University of Economics, Vocational School of Health Services. "Metacognitive Awareness Inventory, Communication Skills Assessment Scale, Problem Solving Inventory, Self-Assessment Form" were used as data collection tools. Research data were collected at the beginning of the academic year in one session using the self-filling technique, overseen by the researchers. Voluntary consent was given by all students. The data in this study will be used only for research purposes.

**Metacognitive Awareness Inventory (MAI):** MAI was developed to assess metacognitive awareness by Schraw and Dennison (1994) and contains 52 items. This inventory has Likert type ratings as (1) Never, (2) Rarely, (3) Often, (4) Usually and (5) Always.

The original form of Metacognitive Awareness Inventory consists of eight sub-factors located below two dimensions. As the first dimension, knowledge of cognition consists of information about the individual's cognitive processes and learning strategies, and which of these strategies are more efficient in specific circumstances. Cognition has three dimensions: declarative knowledge, procedural knowledge and situational knowledge. Regulation of cognition, as another basic dimension, is the knowledge of planning the learning processes, using learning strategies, and the assessment of learning and error correction. Regulation of cognition has five subscales: planning, following, evaluation, managing and debugging of information (Schraw & Dennison, 1994).

**Problem Solving Inventory (PSI):** PSI was developed by Heppner and Petersen (1982). The Turkish adaptation was produced by Sahin, Sahin and Heppner (1993). Problem Solving Inventory (PSI) is a

Likert-type scale, designed to elicit an individual's self-perception and problem solving skills. The Inventory consists of 35 items. Higher scores show lower problem-solving capabilities.

**Communication Skills Assessment Scale (CSA):** Communication Skills Assessment Scale was primarily developed by Korkut (1999) for high school and college students, after which validity and reliability studies were conducted for adults (Korkut, 1999). The scale consists of 25 items, 5-point Likert-type has been configured and the highest score of the scale is 125, the lowest is 25. The higher the score, the better the perceived communication skills (Korkut, 1999; Ozan, 2008)

**Self-Assessment Form (SAF):** In the preparation of the form, the learning objectives were considered to be the skills required for the program of the Vocational School of Health Services. Students assessed their skill level as follows: 1: very poor, 2: poor, 3: medium, 4: Good, 5: very good, or FY: I have no idea.

Data analysis was performed using SPSS for Windows 21.0 package program. Descriptive data for statistical analysis, percentage and mean, standard deviation, one way ANOVA was used.

## Results

The research was carried out with first year students of seven different programs of the Vocational School of Health Services (Medical Documentation and Secretariat, Elderly Care, First Aid and Emergency Care, Medical Imaging Techniques, Opticianry, Child Development, Physical Therapy). All students enrolled in the program (n = 156) were included in the study. Data were collected from 146 students, two students who were repeating the first year were excluded. Access rate was 92.3%. Table 1 shows the number of students for each program of Vocational School of Health Services.

Table 1: *The Number of Vocational School of Health Services Students Who Attended the Study*

Programs' Names and The Number of Students		
Programs	Number of Students	Percent (%)
Elderly Care	16	11.1
Medical Documentation and Secretariat	24	16.7
First Aid and Emergency Care	21	14.6
Physical Therapy	18	12.5
Opticianry	20	13.9
Medical Imaging Techniques	21	14.6
Child Development	24	16.7
Total	144	100

Table 2 gives information about the students' gender, their place of origin, parents' education, and their High Schools.

Table 2: *The Demographic Data for Students of Vocational School of Health Services*

The Demographic Data of Students			
		Frequency	Percent (%)
Gender	Female	102	70.8
	Male	42	29.2
Grown up	City	72	50.0
	Town	63	43.8
	Village	8	5.6
	Unknown	1	0.7

Mother's Graduation	Primary school	54	37.5
	Mid-term school	31	21.5
	High School	40	27.8
	University	19	13.2
Father's Graduation	Primary school	31	21.5
	Mid-term school	27	18.8
	High School	55	38.2
	University	30	20.8
Graduated High School	Anatolian High School	49	34.0
	Vocational High school of Health	26	18.1
	Vocational School of Girls	24	16.7
	Vocational School of Technical	4	2.8
	High School of Trade	1	0.7
	Others	3	2.1
	Vocational High school of Health	37	25.7
TOTAL		144	100

The mean age was  $20.27 \pm 3.78$  (min.18-max.39). 70.8% of students are female. 50% grew up in a city, 43.8% in a town, 5.6% in a village. 36.8% of students' mothers graduated from primary school, 38.2% of students' fathers from high school. 34% of students graduated from Anatolian High School.

The mean score of Communication Skills Assessment Scale was  $100.78 \pm 16.12$  (min: 58 - Max: 120), the mean score for Metacognitive Awareness Inventory was  $191.25 \pm 38.48$  from (min 108 - max : 245), and mean score for Problem Solving Inventory was  $132.83 \pm 33.02$  (min:32 – max:173). The mean score of Self-Assessment Form was as  $80.85 \pm 20.43$  (min: 29 - Max :107).

There was no significant differences among mean score of communication skills Assessment Scale (CSA), Metacognitive Awareness Inventory (MAI), Problem Solving Inventory (PSI) in subgroups of hometown (city-town or village) ( $p > 0.05$ ). Mean scores for Self-Assessment were 82.66, 82.71 and 73.33, for students from cities, towns and villages respectively. Students from villages had significantly lower scores ( $p = 0.024$ ).

On the other hand, correlations between parents' education and PSI, SAF, MAI and CSA showed no significant difference. No significant difference was found between high school type and the Inventory scores. Table 3 shows the relationship between the mean scores of the scales used in the study and the demographic data.

Table 3: *Relationship Between Mean Scores of The Scales and Demographic Data*

		CSA		SAF		PSI		MAI	
		Mean±SD	p	Mean±SD	p	Mean±SD	p	Mean±SD	P
Grown up place	City	102.84±1 4.14	0.706	82.66±15. 26	<0.05	137.95±22 .14	0.677	112.77±17. 62	0.307
	Town	104.0±10. 60		82.71±17. 44		139.11±21 .17		117,50±15, 14	
	Village	106.13±1 3.97		73.33±5.5 7		145.43±13 .66		110.40±23. 99	
Mother's Graduation	Primary school	104.26±1 0.48	0.896	81,40±15. 02	0.466	142.33±18 .69	0.436	114.28±18. 461	0.714

	Mid-term school	103.83±1 1.31		78.92 ±19.03		139.24±19 .58		117.74±12, 807	
	High School	102.32±1 7.27		85.69±15. 50		134.19±22 .67		114.61±19. 05	
	University	104.33±8. 49		82.65±14. 54		138.72±26 .48		111.47±14. 76	
Father's Graduation	Primary school	103,13±1 0.89	0.911	83.64±12. 89	0.827	144.20±20 .12	0.723	112.31±17. 25	0.568
	Mid-term school	102,92±1 2,09		79.21±24. 11		141.23±22 .35		119.38±14. 15	
	High School	104,64±1 4,48		82,52±14. 53		137,90±21 .21		115.32±17. 44	
	University	103,00±1 1,29		81.88±14. 77		131,80±20 .67		113.00±17. 53	
Graduated High School	Anatolian High School	102.62±1 1.97	0.466	83.31±14. 13	0.294	137.80±22 .19	0.867	113.45±18. 88	0.193
	Vocational High school of Health	100.84±1 1.99		95.00±17. 02		138.67±17 .34		111.10±21. 30	
	Vocational School of Girls	107.09±9. 78		82.96±11. 07		139.50±18 .44		121.25±10. 66	
	Vocational School of Technical	104.50±6. 76		81.33±2.3 1		126.25±26 .80		109.50±14. 85	
	High School of Trade	112.00±4. 36		62.67±17. 21		139.00±29 .82		125.67±7.3 7	
	Others	103.94±1 5.67		77.52±19. 21		141.03±23 .20		109.97±15. 32	
Gender	Female	103.46±1 0.71	0.787	82.55±16. 77	0.6	140.67±21 .25	0.097	116.68±15. 11	0,03
	Male	104.10±1 6.41		80.71±13. 65		133.69±20 .63		108.89±20. 45	

Although mean score for CSA, SAF, PSI made by Independent Student t-test showed no difference according to gender ( $p > 0.05$ ), there was significant difference between MAI and gender of students ( $p = 0.03$ ). Mean score for male and female students was 108.89 and 116.68, respectively.

The correlation and  $R^2$  values between the mean scores for MAI, PSI, CSA and SAF gave the results below: There is a strong correlation between MAI and CSA scores (Pearson: 0.72 and  $R^2$ :0.53), a weak correlation between PSI and MAI scores (Pearson: 0.49 and  $R^2$ :0.24), a weak correlation between PSI and CSA scores (Pearson: 0.42 and  $R^2$ :0.17), a weak correlation between MAI and CSA scores (Pearson: 0.35 and  $R^2$ :0.12), a very weak correlation between PSI and SAF scores (Pearson: 0.23 and  $R^2$ :0.05) and a very weak correlation between CSA and SAF scores (Pearson: 0.20 and  $R^2$ :0.04).

## Discussion

In order to evaluate the readiness of Vocational School of Health Services Students' at the beginning of the academic year, their metacognitive awareness, communication skills, problem solving skills and self-assessment skills were assessed using the Metacognitive Awareness Inventory (MAI), Communication Skills Assessment Scale (CSA), Problem Solving Inventory (PSI), and Self-Assessment Form (SAF). We investigated the levels of metacognitive awareness, problem solving skills, communication skills, and self-assessment of their professional skills, and relation between these.

Although there was no significant difference between mean scores of CSA, SAF, PSI according to gender ( $p > 0.05$ ), MAI scores were higher in females ( $p = 0.03$ ). When examining the relevant literature, gender difference was found in some studies. They found that female students use metacognitive learning strategies significantly higher than male students (Rozendal, Minnaert&Boekaert, 2001;

AktürkveŞahin, 2010), but others reported no significant relationship (Özsoy, Çakırođlu, KuruyerveÖzsoy, 2010; Bakiođlu, 2015). In our study, there was no statistically significant difference between males and females in problem-solving scores, in contrast to Korkut (2002), who found higher scores for males. The lack of significant differences between males and females may be attributed to the equality of opportunities and similarities in the socialization process in the context of the university in the study.

There was no significant correlation between the education level of parents and students' mean scores for PSI, SAF, MAI and CSA. Similarly, Korkut (2002) found that education level of parents is not correlated with students' problem-solving skills. Our analysis shows no significant difference in mean scores of PCI, SAF, MAI and CSA according to high school type. This is in contrast to Korkut (2002) who found higher scores in super high school graduates. Korkut (2002) concluded that students in super high school had more advanced problem-solving skills. The differences between Korkut (2002) and the current study can be explained by recent changes in the entry criteria of schools, resulting in schools becoming similar to each other in terms of student profile.

Mean scores for Communication skills were relatively higher in our study. However, it is important to select appropriate methods to further improve these students' skills during the educational process. Also, with this type of communication skills assessment scale, students assessed themselves; however, evaluation methods other than self-assessment such as 360-degree assessment may be more reliable. We plan to introduce new evaluation methods at the end of the course..

Students' mean scores of self-assessment form which contain questions about program objectives were low. Lower self-assessment scores of students, particularly at the beginning of the school year, are expected. Higher scores are expected to be observed at the end of the course.

There was a positive correlation between metacognitive awareness and communication skills scores. It can be assumed that metacognitive awareness enables greater understanding of the self and others, and it can improve communication skills. We found a positive correlation between MAI and PSI scores which are both related to cognition, Bakiođlu also found similar results (Bakiođlu, 2015). There was a very weak correlation between self-assessment and communication skills scores, and also between communication skills and problem solving skills scores. Communication skills are needed to understand the self, so it may be related to self-assessment. Communication skills are also important in solving interpersonal problems; therefore, correlations are expected.

## Conclusion

It would be useful to know the level of students' readiness at the beginning of their education to organize and evaluate curriculum. The next study, planned as a continuation of this research, aims to collect data at the end of the academic year and to assess the outcomes achieved in this period. Thus, we aim to understand the gains during the courses and make the necessary improvements by revising the program.

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