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An Analysis of Prospective Teachers' Curriculum Literacy Levels in Terms of Various Variables

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Abstract

This study aims to examine the curriculum literacy levels of prospective teachers in terms of various variables. The research sample consists of 469 teacher candidates, including 253 students from the 3rd grade and 216 students from the 4th grade, studying in Primary School Education, Preschool Education, Turkish Education, and Social Studies Education Departments of Inonu University Education Faculty. Curriculum Literacy Scale was used as a data collection tool in the study. In the findings of the study, it was observed that there was a significant difference in various sub-dimensions of the curriculum literacy of prospective teachers by different variables.

Keywords: Curriculum Literacy, Prospective Teachers, Curriculum

1. Introduction

The educational process has three essential elements: teacher, student, and curriculum. As one of the elements, the curriculum is the national, school-based, and official education plan of a country valid throughout the country (McLachlan, Flee, & Edwards, 2010, p. 11). The curriculum seeks an answer to the question of “what,” and it can be considered as a planning and learning experience (Demirel, 2020, p. 6). It also consists of realizing learning, learning and teaching processes, educational resources and guides for the use of these resources, course contents, assessment and evaluation processes, and practices related to the management of the curriculum (Demeuse & Strauven, 2016, p. 4). the curricula are developed for different grades (Carl, 2005). During the preparation process of the curriculum, some goals/objectives answer the question of why individuals will learn, content that answers the question of what to teach, learning-teaching processes that answer the question of how to teach, and assessment and evaluation elements that answer the question of the degree to which they learned. It is the characteristics that students are expected to acquire due to the implementation of the target curriculum. Content, on the other hand, is information designed to mediate in achieving goals. Learning-teaching processes include learning-teaching activities in which knowledge, attitudes, and skills are acquired in accordance with the determined goals. Assessment and evaluation aim to determine whether the objectives set using various assessment tools were achieved (Görgen, 2019, p. 11-12).

The curriculum has a constructive role in improving teaching. A well-constructed curriculum consists of activities based on teachers' and students' thoughts, encouraging the intellectual environment in the classroom, and developing effective materials (Ball & Cohen, 1996). However, no matter how well-designed a curriculum is, it is difficult to reach the preset objectives unless it is well understood and implemented by teachers (Arslan & Özpinar, 2008). To this end, the importance of teachers' curriculum knowledge and curriculum literacy is underlined.

Teachers' curriculum knowledge can be classified into three levels (Ariav, 1988 as cited in Silberstein, 1984):

At the 1st level, the teacher is an independent receiver who can intelligently use the ready-made curriculum materials. These teachers know how to evaluate the materials and how to adapt them to the educational environment.

At the 2nd level, the teacher is the receiver-developer who can develop limited material to support and enrich ready-made materials.

At the 3rd level, the teacher is an independent developer who can plan the whole lesson without any curriculum material.

A factor that allows teachers to use the curriculum well is curriculum literacy. The concepts of being literate and literacy are often confused. Being literate is based on analyzing what is written in a text, while literacy includes interpreting the meaning. Besides, literacy is a skill that can be developed, while being literate is a skill that someone has or has not. While a text is required for being literate, there are thoughts, information, and designs in the concept of literacy. Literacy manifests itself in many areas day by day, such as technology literacy and media literacy (Kurudayıoğlu and Tüzel, 2010). One of these types of literacy is curriculum literacy. The concept of curriculum literacy means having information about the curriculum, awareness of the curriculum, and the correct interpretation and use of the elements in the curriculum. This concept is a factor that contributes to the correct implementation of the curriculum (Aslan, 2018, p. 6). Curriculum literacy is an important skill that teachers and prospective teachers should acquire (Erdem & Eǧmir, 2018). Accordingly, four important elements apply to the curriculum in any educational setting, from early childhood to higher education. These are the objectives about what the curriculum wants to achieve, the content of what is included in the curriculum, the teaching methods to be used to achieve the objectives, and the assessment to determine whether the goals were achieved (McLachlan, Fleer, & Edwards, 2010, p. 10).

Regarding the studies on curriculum literacy, 728 students studying in the departments of mathematics education, primary school education, computer and instructional technologies education, science education, and Turkish education in three universities participated in the study (Arı, 2010) conducted about the prospective teachers' level of recognition and understanding of the primary education curriculum. In the research, a questionnaire form developed by the researcher was used as a data collection tool. In the findings of the study, it was determined that the proficiency of prospective teachers to apply the primary education curriculum is low. Additionally, most of the students expressed that the introduction of the primary education curriculum in the textbooks was insufficient and that the education they received in the education faculty did not provide the necessary knowledge and skills in implementing the primary education curriculum.

345 3rd and 4th-grade students studying at the primary school education, preschool education, science education, and mathematics education departments of a university participated in a study (Çetinkaya & Tabak, 2019) examining the curriculum literacy levels of prospective teachers. Curriculum Literacy Scale was used as a data collection tool in the study. The study findings determined that the curriculum literacy level of the prospective teachers was at a sufficient level, the curriculum literacy level of the 4th-grade students was higher than the students in the 3rd grade, and the students in the primary school education department had a higher curriculum literacy level than the students in the preschool education and mathematics education departments.

In the findings of a study conducted to determine whether the teacher competencies of the renewed primary education curriculum are compatible with the professional competencies aimed to be acquired by prospective

teachers in education faculties, it was found out that the professional competencies expected from the teachers and the education given to prospective teachers were compatible (Arslan & Özpınar, 2008).

Studies also indicate that prospective teacher's curriculum literacy levels differ by various variables. The results of the studies conducted on the concept of curriculum literacy with prospective teachers are expected to pave the way for the studies that can be carried out to develop this skill of prospective teachers. Thus, teachers who can use the curriculum effectively and fulfill the requirements of the curriculum are trained. The reason is that with the curriculum literacy skills, teachers' mastery of the curriculum increases as well as the applicability and functionality of the curriculum (Karagülle, Varkı, & Hekimoğlu, 2019).

As in the world, and teacher training for Turkey is undoubtedly among the most important and strategic issues. Physical spaces, technology, tools, and equipment related to education, in short, efficient use of all resources, cannot fully achieve the desired results. In any education system, teachers cannot be expected to produce educational services above their quality. Teachers should have knowledge of curriculum literacy in another subject that they need to know and apply in addition to their content knowledge and pedagogy knowledge. It is thought that this knowledge contributes positively to the quality of education when prospective teachers start to work, having gained such qualities during their undergraduate years. This study investigated the curriculum literacy levels of prospective teachers. Within the scope of this purpose, the questions that the research seeks to answer are as follows:

1. Does the curriculum literacy levels of prospective teachers differ significantly by gender?
2. Does the curriculum literacy levels of prospective teachers differ significantly by grade?
3. Does the curriculum literacy levels of prospective teachers differ significantly by department?

2. Method

This study aims to determine whether the curriculum literacy levels of undergraduate students differ by various demographic variables. In this direction, the research was designed with the general survey model. The survey model describes an existing situation as it is in its own conditions (Karasar, 2009).

The study group of the research consists of 469 prospective teachers, 253 students from the 3rd grade, and 216 students from the 4th grade studying in the departments of Primary Education, Preschool Education, Turkish Education, and Social Studies Education at İnönü University, Faculty of Education. The demographics of the study group are presented in Table 1.

Table 1: Percentage and frequency distributions of students' demographics

	Categories	<i>f</i>	%
Gender	Female	361	77,0
	Male	108	23,0
Grader	3rd grade	253	53,9
	4th grade	216	46,1
Department	Preschool Education	138	29,4
	Primary Education	155	33,0
	Social Studies Education	89	19,0
	Turkish Education	87	18,6

According to Table 1, 77% of the participant students are female and 23% are male, 53.9% are studying at the 3rd grade, 46% are at the 4th grade, 29.4% are in Preschool Education, 33% are in Primary Education, 19.0% are in Social Studies Education, and 18.6% are at Turkish Education.

2.1. Data Collection Tools

Curriculum Literacy Scale (Bolat, 2017) was used as a data collection tool in this study. This scale was developed to determine the curriculum literacy levels of prospective teachers. It consists of 29 items and two factors: reading and writing. Under these two factors are objective literacy, content literacy, learning and teaching processes literacy, and assessment and evaluation literacy subdimensions. The Cronbach's Alpha internal consistency coefficients in scale reliability are ,940 for the whole scale, ,888 for the reading factor and ,907 for the writing factor. Scale validity was examined by calculating item-total correlations, and it was determined that the scale items had sufficient validity levels.

2.2 Data Collection and Analysis

The research data were collected online via Google Forms after obtaining the permission of the ethics committee. SPSS package software was used to analyze the collected data. Whether the data show normal distribution or not was analyzed with skewness and kurtosis coefficients, and these values are given in Table 2.

Table 2: Skewness and Kurtosis Scores regarding normality of Curriculum Literacy Scale scores

			Skewness	Kurtosis
Curriculum Literacy Scale	Objective	Reading	-,187	,194
		Writing	-,094	,242
	Content	Reading	-,182	,130
		Yazma	-,204	-,118
	Learning and Teaching Processes	Reading	-,151	,015
		Writing	-,243	,052
	Assessment and Evaluation	Reading	-,011	-,295
		Writing	-,067	,064

Table 2 indicates that these values are between -1 and +1, and the data show a normal distribution. After it was determined that the data showed a normal distribution, descriptive analyses were made on the students' demographics. Independent Samples T-Test was used for two-category variables, and One-Way Analysis of Variance was used for variables with three or more categories for students' demographics. When a significant difference was found out in variables with three or more categories, the source of this difference was also analyzed with the Bonferroni Test.

3. Results

In this chapter, the findings obtained from the analysis of the research data are tabulated.

Table 3: Students' opinions about the curriculum course

		Categories	<i>f</i>	%
Taking curriculum course	3rd-grade	Taken	175	69,2
		Not taken	78	30,8
	4th-grade	Taken	45	67,1
		Not taken	171	32,9
Willingness to take curriculum course	3rd-grade	Yes	216	85,4
		No	37	14,6
	4th-grade	Yes	199	92,1
		No	17	7,9

When Table 3 is examined, 69.2% of the 3rd-grade participant students took the curriculum course in their university education. It is also observed that 30.8% did not take the curriculum course. It was determined that 67.1% of the 4th-grade students took the curriculum course in their university education, and 32.9% did not take this course. However, when looking at their willingness to take the curriculum course, it was found out that 85.4% of the 3rd-grade students and 92.1% of the 4th-grade participant students wanted to take the curriculum course during their university education.

Table 4: Independent Samples T-Test Results regarding curriculum literacy levels of students by gender

	Curriculum Literacy Scale Sub-Dimensions	Age	N	Mean	Ss	sd	t	p
Objective	Reading	Female	361	14,52	2,43	467	,896	,371
		Male	108	14,28	2,73			
	Writing	Female	361	10,49	2,15	467	-,013	,989
		Male	108	10,49	2,37			
Content	Reading	Female	361	14,38	2,44	467	,473	,636
		Male	108	14,25	2,88			
	Writing	Female	361	10,83	2,25	467	1,280	,201
		Male	108	10,51	2,35			
Learning and Teaching Processes	Reading	Female	361	14,48	2,78	467	-,016	,987
		Male	108	14,48	2,08			
	Writing	Female	361	14,40	2,91	467	1,306	,192
		Male	108	13,97	3,36			
Assessment and Evaluation	Reading	Female	361	6,78	1,61	467	-1,993	,047*
		Male	108	7,13	1,64			
	Writing	Female	361	13,77	3,04	467	-,537	,592
		Male	108	13,94	3,11			

Based on the curriculum literacy levels of students by gender in Table 4, it is seen that there is no significant difference in the dimensions of objective, content, learning, and teaching processes. In the reading sub-dimension of the assessment and evaluation dimension ($t_{(467)} = -1,993$, $p = ,047 < ,05$), it was seen that there is a significant difference by gender. Accordingly, it can be suggested that male students got higher scores from the reading sub-dimension of the assessment and evaluation dimension of the curriculum than female students

Table 5: Independent-Samples T-Test Results regarding curriculum literacy levels of students by grade

Curriculum Literacy Scale Sub-Dimensions		Age	N	Mean	Ss	sd	t	p
Objective	Reading	3rd-grade	253	14,26	2,35	467	-1,975	,049*
		4th-grade	216	14,71	2,64			
	Writing	3rd-grade	253	10,30	2,16	467	-1,963	,050*
		4th-grade	216	10,70	2,24			
Content	Reading	3rd-grade	253	14,06	2,42	467	-2,748	,006*
		4th-grade	216	14,70	2,65			
	Writing	3rd-grade	253	10,59	2,30	467	-1,672	,095
		4th-grade	216	10,94	2,24			
Learning and Teaching Processes	Reading	3rd-grade	253	14,20	2,78	467	-2,283	,023*
		4th-grade	216	14,80	2,89			
	Writing	3rd-grade	253	13,91	3,02	467	-3,132	,002*
		4th-grade	216	14,77	2,96			
Assessment and Evaluation	Reading	3rd-grade	253	6,74	1,63	467	-1,763	,078
		4th-grade	216	7,00	1,61			
	Writing	3rd-grade	253	13,68	3,11	467	-,968	,334
		4th-grade	216	14,00	2,99			

When the curriculum literacy levels of the students by grade are examined in Table 5, it is seen that there is no significant difference in the assessment and evaluation dimensions. Reading sub-dimension ($t_{(467)}=-1,975$, $p=,049<,05$) and writing sub-dimension ($t_{(467)}=-1,963$, $p=,050=,05$) of objective dimension, reading sub-dimension ($t_{(467)}=-2,748$, $p=,006<,05$) of content dimension and reading sub-dimension ($t_{(467)}=-2,283$, $p=,023<,05$) and writing sub-dimension ($t_{(467)}=-3,132$, $p=,002<,05$) of assessment and evaluation dimension were found to be significantly different by grade. Accordingly, it can be asserted that 4th-grade students got higher scores than the students studying in the 3rd grade in the reading and writing sub-dimensions of the target dimension, reading sub-dimension of content dimension, and reading and writing sub-dimensions of learning and teaching processes of the curriculum.

Table 6: One Way ANOVA Test results regarding the curriculum literacy levels of students by department

Curriculum Literacy Scale Sub-Dimensions	Department	N	Mean	Ss	F	p	Difference
Objective	Reading	1. Preschool Education	138	14,17	2,26	1,731	,160
		2. Primary Education	155	14,41	2,77		
		3. Social Studies Education	89	14,60	2,70		
		4. Turkish Education	87	14,92	2,09		
	Writing	1. Preschool Education	138	10,23	2,03	2,396	,068
		2. Primary Education	155	10,34	2,48		
		3. Social Studies Education	89	10,90	2,04		
		4. Turkish Education	87	10,76	2,04		
Content	Reading	1. Preschool Education	138	14,02	2,29	1,847	,138
		2. Primary Education	155	14,28	2,77		
		3. Social Studies Education	89	14,69	2,73		
		4. Turkish Education	87	14,68	2,29		
	Writing	1. Preschool Education	138	10,53	2,22	1,636	,180
		2. Primary Education	155	10,74	2,47		
		3. Social Studies Education	89	11,20	2,14		
		4. Turkish Education	87	10,69	2,10		
Learning and Teaching Process	Reading	1. Preschool Education	138	14,20	2,49	1,311	,270
		2. Primary Education	155	14,45	3,24		
		3. Social Studies Education	89	14,97	2,92		
		4. Turkish Education	87	14,46	2,51		
	Writing	1. Preschool Education	138	14,16	2,72	,389	,761
		2. Primary Education	155	14,30	3,41		
		3. Social Studies Education	89	14,60	3,11		
		4. Turkish Education	87	14,25	2,64		
Assessment and Evaluation	Reading	1. Preschool Education	138	6,59	1,57	2,251	,082
		2. Primary Education	155	6,95	1,72		
		3. Social Studies Education	89	7,12	1,56		
		4. Turkish Education	87	6,85	1,57		
	Writing	1. Preschool Education	138	13,12	2,78	4,763	,003*
		2. Primary Education	155	14,08	3,39		
		3. Social Studies Education	89	14,56	2,86		
		4. Turkish Education	87	13,62	2,84		

In terms of the students' curriculum literacy levels by the department in Table 6, it is seen that there is no significant difference in the dimensions of objective, content, and learning and teaching processes. It was observed that there was a significant difference by the department in the writing sub-dimension of the assessment and evaluation dimension ($F=4,763$, $p=,003<,05$). Additionally, students studying in Primary Education ($\bar{X}=14,08$) received higher scores than students studying in Preschool Education ($\bar{X}=13,12$). Similarly, students studying in the Social Studies Education ($\bar{X}=14,56$) got higher scores than students studying in the Preschool Teaching ($\bar{X}=13,12$) in the writing sub-dimension of the assessment and evaluation dimension of curriculum.

4. Discussion

Table 3 suggests that more than half of the 3rd and 4th-grade students took the curriculum course during their undergraduate education. In KPSS (Public Personnel Selection Examination in Turkey) exams, there are questions in the field of curriculum development within the scope of teaching profession knowledge. The prospective teachers are aware of it, and 85.4% of the 3rd-grade students and 92.1% of the 4th-grade students stated that they would like to take the curriculum development course during their university education. The fact that the numbers are so high that even the students who take the course want to take it again shows that the course is important for prospective teachers, and they basically need this course. Therefore, giving more space to the curriculum course while designing undergraduate teacher training curricula may contribute to meeting these needs of students.

In Table 4, male students got higher scores than female students in the reading sub-dimension of the assessment and evaluation dimension of the curriculum. In another study, it was determined that there was no significant difference in the reading dimension of the curriculum in terms of gender, and female students were better than male students in the writing dimension (Erdem & Eđmir, 2018). The difference in the current study may be because reading and writing factors are taken into consideration rather than the general sub-dimensions.

In Table 5, 4th-grade students are at a better level than the students studying in the 3rd grade in the reading and writing sub-dimensions of the objective dimension, reading sub-dimension of content dimension, and reading and writing sub-dimensions of learning and teaching processes dimension of curriculum. As expressed in Table 3, 32.9% of the 4th-grade students signified that they did not take the curriculum development course during their undergraduate education and would like to take it at a frequency of 92.1%. Thus, as 4th-grade students approach the KPSS exams, they can improve themselves by feeling more sensitive about curriculum literacy. In another study conducted to support the present findings (Sđral & Dedebali, 2018), it was determined that there is a significant difference in favor of 4th graders in the reading and writing dimensions of curriculum. Based on the literature, etinkaya and Tabak (2019) revealed that the curriculum literacy levels of the 4th-grade students were at a better level than the 3rd-grade students.

As shown in Table 6, there is no significant difference in the sub-dimensions of the curriculum literacy factors in the objective, content, learning, and teaching processes by the departments of students, which may be due to the similarity of the curricula in terms of educational sciences. In the writing sub-dimension of the assessment and evaluation dimension of curriculum literacy, it is a meaningful and appropriate situation that Primary Education and Social Studies Education students received higher scores than Preschool Education students since the student assessment methods of Preschool Students are completely different from Primary Education and Social Studies Teaching departments. While more standardized assessment and evaluation methods are used in Primary Education and Social Studies Education curricula, non-standardized measurement tools such as monthly plan evaluation, activity evaluation, daily evaluations, children's activities, and portfolios are used in the Preschool Education curriculum evaluation (MoNE, 2013). In another study (etinkaya & Tabak, 2019), it was indicated that the literacy levels of the students studying in the Primary Education department were higher than the students studying in the Preschool Education department, in a way to support the current research results.

Based on the results of the current study conducted with prospective teachers, it can be ensured that teachers participate more effectively in the curriculum development processes to understand the essence of the curriculum and improve their curriculum literacy, without being included only as recipients in the curriculum (Carl, 2005). However, the fact that the students studying in the Social Studies Education had higher scores in the writing sub-dimension of the assessment and evaluation dimension of curriculum compared to the other departments could be affected by the existence of the curriculum development course in the Social Studies Education undergraduate program. Therefore, adding this course to other teacher training programs could help develop prospective teachers' curriculum literacy. Considering the new undergraduate teacher training programs of the Council of Higher Education (CoHE) (2018) in Turkey, it is seen that the Curriculum Development course is included in the curriculum as an elective. However, this practice may cause some students to take this course and others to

graduate without taking this course. At this point, making the Curriculum Development course compulsory in all undergraduate teacher training programs, adding other courses related to the curriculum could help prospective teachers be better educated about the curriculum.

It can be suggested that one of the problems faced by novice teachers is the difficulty in accessing resources and materials related to the curriculum (Grossman & Thompson, 2008). In this direction, it may be effective to increase the number of materials related to the curriculum in order for teachers and prospective teachers to better understand the curriculum and thus improve their curriculum literacy.

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