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Revealing In-service Teachers' Competencies: Curriculum Literacy

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Teachers need to be fluent in reading and understanding the curricula as they are the main figure to implement it in classrooms. It is one of the crucial professional competencies to be literate of curriculum in terms of understanding the objectives and shaping the instruction through them. Also, the content to be taught and the different methods can be used to teach should be interpreted by teachers. In this study, aiming to reveal teachers' views on their self-efficacy in curriculum literacy, simultaneous triangulation design, a mixed research method in which qualitative and quantitative data are collected, was used. The participants were 57 teachers working at primary, middle and high schools, answered the "Curriculum Literacy Scale" and the survey prepared. In data analysis, descriptive statistics of the quantitative data were examined, and qualitative data were analyzed with content analysis. According to the findings, teachers' self-efficacy perceptions regarding curriculum literacy levels were found quite high. Comparing the scores from "reading" and "writing" dimensions, it was seen that teachers received high scores from both, but the scores from the reading dimension were higher. In addition, it was concluded that the quantitative and qualitative findings obtained in the research often did not overlap. Consequently, suggestions were made to strengthen teacher candidates and teachers for curriculum literacy.

Introduction

Teacher competence has always been a significant issue of emphasis in the education field. According to the General Competencies for the Teaching Profession report (MoNE, 2017), competence encompasses the knowledge, skills, attitudes, and values that are necessary to perform a job effectively and efficiently. The field of competence refers to the frameworks within which these qualities can be observed as a unified whole. Every teacher should possess three key competency areas: professional knowledge, professional skills, and professional attitudes and values. In examining the sub-qualification areas related to the professional skills that teachers need, it becomes evident that these skills involve the planning, implementation, and evaluation of educational processes, all within the context of the curriculum. Teachers' ability to meet expectations and successfully implement the curriculum depends significantly on their literacy in that particular program. Without this literacy, it is unrealistic to expect the

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behaviours and practices associated with their competencies. Consequently, challenges are likely to arise in implementing the curriculum. Therefore, priority should be given to equipping teachers with the necessary skills for effective curriculum literacy. Curriculum literacy is a relatively new concept that has gained attention in recent years. For this reason, it is beneficial to first define the concept of literacy before discussing curriculum and curriculum literacy.

Literacy beyond being a skill set consisting of reading, writing and counting, is getting to be seen as a tool of defining, understanding, interpreting, creating and communication in a more digital, text mediated, information rich and rapidly changing world (UNESCO, 2018). According to Swedish International Development Cooperation Agency, literacy is about reading and writing text and numbers, reading, writing and calculating to learn, and developing and using these skills effectively to meet basic needs (UNESCO, 2006). Literacy requires continuous learning using written and printed materials regarding various contexts in individuals' achieving their goals, developing their knowledge and potentials and fully participating in society (UNESCO 2005, 21).

The United Nations Commission declared the ten years between 2003 and 2012 as literacy decade. While the concept of literacy is gaining more importance day by day, many new forms of literacy are also developing. Information literacy, natural sciences literacy, ecology literacy, science literacy, media literacy, statistics literacy, mathematics literacy, technology literacy, legal literacy, map literacy, health literacy are just a few examples and, of course, curriculum literacy is among them.

Curriculum and Curriculum Literacy

Curriculum is defined in different ways. Marsh and Willis (2007) describe it as a series of planned experiences for students with school guidance. Posner and Rudnitsky (2006) see it as a set of specific learning goals. Demirel (2012) explains that curriculum includes planned activities at school and outside of it. Overall, curriculum involves various elements, including structured educational experiences and the environment. Therefore, teachers must be skilled in managing these factors.

Teachers need to understand the curriculum, apply it, and evaluate its success for education to thrive. Almost all school activities should align with the curriculum, requiring teachers to stay connected and knowledgeable about it. This knowledge helps them implement the curriculum effectively and make necessary adjustments based on evaluations. Teachers directly work with the curriculum, unlike other stakeholders (Hewit, 2006, p. 50). Oliva (2005, p. 15) points out that teachers participate in curriculum planning under supervision while being closely connected to both the curriculum and teaching. Ornstein and Hunkins (2018, p. 39) emphasize that teachers transform the curriculum into practice through their teaching. Given their crucial role in planning, implementing, and evaluating the curriculum, it is essential for teachers to be well-informed about it.

Curriculum literacy was first used by Ariav in the 1980s as a replacement for "curriculum information." It is noted that curriculum literacy is a broader term than curriculum information (Keskin & Korkmaz, 2021). 'Curriculum literacy' concept is defined by Steiner as the ability of teachers to identify and eliminate deficiencies in the teaching materials given to them to teach (2018, p.18). According to another definition, curriculum literacy is the teacher's awareness of the specific features of curriculum, the ability to use this awareness in practice, and use the curriculum as a guide by making evaluations and interpretations from a critical

perspective (Keskin & Korkmaz, 2021).

Ariav (1988) outlined curriculum literacy in two levels. The first level emphasizes that teachers should be informed consumers of curriculum materials rather than engaging in complex decision-making about curriculum development. They are expected to evaluate and select materials relevant to their subjects and adapt them to their teaching environments. The second level involves a deeper understanding of program development approaches and the factors that impact this process. Ariav (1988) suggests that these levels of curriculum literacy establish a hierarchy of knowledge and skills necessary for effective teaching. Curriculum literacy provides a foundation for the materials developed by educational authorities and enhances a teacher's effectiveness based on the specific characteristics of their teaching context, including the region, school facilities, and student needs. In essence, curriculum literacy encompasses the ability to comprehend all aspects of the curriculum, including objectives, content, teaching methods, and evaluation techniques. It requires examining the relationships among these elements, identifying strengths and weaknesses, and adapting the curriculum as needed. Pinar et al. (1995) further noted that effective curriculum implementation depends on this expertise, enabling teachers to form interpretations and informed action plans.

Teachers need to acquire curriculum literacy during their pre-service education, which can be enhanced through in-service training. However, it might not be sufficiently dealt with in teacher training. Historically, "Curriculum and Instruction" courses struggled for inclusion in various bachelor programs, but they have gained attention recently. In the 2018-2019 academic year, within teacher education curricula offered by Council of Higher Education only the Social Studies Teaching department offered a curriculum development course (2 credits). Other relevant courses include "Science-Technology Curriculum and Planning" (3 credits) in Science Teaching, "Individualized Curricula" (3 credits) and "Differentiation of Curricula for Gifted and Talented" (2 credits) in Special Education, "Primary Education Preparation" and "Primary Education Curricula" (2 credits) in Early Childhood Education, and "Curriculum Development in Guidance" (3 credits) in Counseling and Guidance. While a course titled "Curriculum Development in Education" was recommended as an elective, it is unclear how often it is selected and taught. Consequently, teacher preparation may not adequately equip future educators with essential curriculum literacy skills.

The Education for All Global Monitoring Report by UNESCO (2014) highlights that an education system is only as strong as its teachers, making their empowerment essential for improving educational systems. Curriculum literacy is a critical skill for effective teaching, yet it has only recently gained attention in both international and national literature and research (Grossman & Hirsh, 2021; Nsibande & Modiba, 2012; Singh, Dooley, & Freebody, 2001; Steiner, 2018; Modiba & Rensburg, 2009) and national literature since the 2010s, becoming a subject of scientific research (Akyıldız, 2020; Aslan, 2019; Aslan & Gürlen, 2019; Erdamar, 2020; Erdem & Eğmir, 2018; Kahramanoğlu, 2019; Mansuroğlu, 2019; Nasırcı, 2022; Sural & Dedebali, 2018; Yıldız, 2019; Yar-Yıldırım, 2020, 2021). Despite its significance, it still lacks the emphasis it deserves in teacher training and professional development. Training teachers for curriculum literacy and constantly updating their skills is vital for enhancing education quality. Thus, studies on teachers' curriculum literacy are necessary and valuable. This research aims to explore teachers' perceptions and opinions regarding their self-efficacy in this area.

Materials and Method

Research Design

This study explored teachers' views on their self-efficacy in curriculum literacy using a simultaneous triangulation design, which collects both qualitative and quantitative data at the same time. This approach balances the strengths of each method. After data collection, the researcher compared the two sets for overlap, differences, or complementarity, which were discussed in the findings (Creswell, 2009, pp. 196-197). The Curriculum Literacy Scale and the Curriculum Literacy Survey were administered to teachers in a single session, allowing for concurrent data collection.

Participants

The data collection instruments used in the research were delivered to participants over the internet, it was stated that primary, middle and high school teachers could participate. Accordingly, the personal information regarding teachers participated online are presented in Table 1.

Table 1. Personal Information of Participants

Variables	Sub-dimensions	f	%
Gender	Woman	38	66.7
	Man	19	33.3
Years of seniority	0-5 years	10	17.5
	6-10 years	19	33.3
	11-15 years	5	8.8
	16-20 years	8	14.0
	21+ years	15	26.3
Type of School Graduated	Education Institute	3	5.2
	Bachelor's Degree Completion	1	1.7
	Faculty of Education	45	77.6
	Faculty of Science and Literature	6	10.3
	Other	3	5.2
Type of School	Primary	22	37.9
	Middle	20	34.5
	High	16	27.6
Status of attending courses related to the curriculum in educational life	Attended	54	93.1
	Did not Attend	4	6.9
Status of attending in-service education regarding curriculum	Attended	24	41.4
	Did not Attend	34	58.6

Data Collection Instruments

Curriculum Literacy Scale: Developed by Bolat (2017), the Curriculum Literacy Scale consists of 29 items, split into two subscales: Reading (15 items) and Writing (14 items). Sample items include "I can determine the relationship level of the content with the objectives" for the Reading subscale and "I can write questions appropriate to the objective" for the Writing subscale. The scale shows strong internal consistency, with Cronbach's alpha coefficients of .88 for Reading, .90 for Writing, and .94 overall. It explains 43.54% of the variance in curriculum literacy skills. A confirmatory factor analysis by the owner of the scale confirmed its suitability, returning values: $\chi^2 = 657.80$; $p < 0.05$; degrees of freedom = 376; RMSEA = 0.059; SRMR = 0.052; NFI = 0.94; NNFI = 0.97; CFI = 0.97; IFI = 0.97; GFI = 0.83; AGFI =

0.80. In this study, the updated internal consistency coefficients were found to be .94 for Reading, .95 for Writing, and .97 overall.

Curriculum Literacy Survey: This survey collects personal information, such as gender and school level, and includes seven open-ended questions. It focuses on teachers' definitions of curriculum, its fundamental elements, and the factors to consider while reviewing and designing curricula. Additionally, it assesses qualifications for curriculum literacy and includes self-evaluations and suggestions for improvement.

After drafting the questions and incorporating feedback from three faculty members from curriculum and instruction department in Çukurova University, the survey was combined into a single form and distributed online. A total of 58 teachers participated in the survey.

Data Analysis

Quantitative data collected using the scale were analyzed with a statistical program, providing descriptive values, while qualitative data underwent content analysis using the NVivo program for clearer presentation of codes and themes. Initially, raw data were transferred into a Word document, and researchers analyzed these texts individually to create draft codes and categories, which were then imported into NVivo. All codes were carefully reviewed, and related ones were grouped into themes. To ensure validity and reliability, data triangulation was used, allowing for verification of consistent results through both qualitative and quantitative methods applied to the same hypothesis (Butgel-Tunalı, Gözü, & Özen, 2016). The study evaluated the overlap between the qualitative and quantitative data collected.

In addition, no comments were included in the presentation of the findings; the findings were presented in as much detail as possible and were supported with direct quotes. On the other hand, information regarding the identity of the participants was kept confidential, and codes such as T1, T2, … were used where necessary. For reliability, the inter-coder reliability coefficient was checked. For this purpose, two researchers separately coded the data of 6 participants. When the inter-coder consistency rate was calculated using Miles and Huberman's (1994) formula [Reliability = Consensus/ (Agreement + Disagreement)], this rate was determined as 93.2%.

In interpreting the scores obtained from the scale, the group width value was taken as 4/5 = 0.80, since the scale is a five-point Likert type. According to this 1.00 – 1.80 is “very low”; 1.80-2.60 is "low"; 2.60-3.40 is “medium”; 3.40-4.20 is “high”; Between 4.20 and 5.00 was taken as "very high".

Results

In this part, firstly quantitative findings obtained by the scale and then qualitative findings by the survey were presented.

Results Regarding Teachers' Curriculum Literacy

In the study, descriptive statistics of the quantitative data obtained with the Curriculum Literacy Scale were examined both on item basis and on the basis of subscales and total scores. The findings obtained in this review are shown in Table 2 and Table 3.

Table 2. Descriptive statistics for Curriculum Literacy Scale

Scale	N	Minimum	Maximum	$\overline{X}$	Sd
Reading	57	3.00	5.00	4.29	.50
Writing	57	2.79	5.00	4.07	.64
Scale total	57	3.00	5.00	4.19	.55

As seen in Table 2, the scores of the teachers' self-evaluation in terms of Curriculum literacy skills are above 4 on a five-point scale. These values are in the "very high" range for the Reading subscale, and in the "high" range for the Writing subscale and total scores. Accordingly, the arithmetic mean of the scale total scores was found to be in the high range of 4.16. The distribution of teacher responses based on items is shown in Table 3.

Table 3. Teacher Responses for All Items of Curriculum Literacy Scale

Curriculum Literacy Scale	**Somewhat Agree**		**Moderately Agree**		**Agree**		**Strongly Agree**		**X**	**Sd**
Reading dimension	**f**	**%**	**f**	**%**	**f**	**%**	**f**	**%**		
1. I can distinguish which objective dimension a given attainment relates to.	-	-	11	19.30	22	38.60	24	42.11	4.23	0.756
2. I can check the suitability of the content for the student level.	-	-	3	5.26	21	36.84	33	57.89	4.53	0.600
3. I can choose content that suits the objective.	-	-	3	5.26	29	50.88	25	43.86	4.39	0.590
4. I can determine the consistency of objectives with each other.	-	-	6	10.53	29	50.88	22	38.60	4.28	0.648
5. I can determine the level of relationship of the content to the objectives.	1	1.75	6	10.53	34	59.65	16	28.07	4.14	0.666
6. I can evaluate measurement instruments.	2	3.51	6	10.53	22	38.60	27	47.37	4.30	0.801
7. I can determine the limitations of objectives.	1	1.75	9	15.79	30	52.63	17	29.82	4.11	0.724
8. I can understand what the objective asks for.	-	-	3	5.26	28	49.12	26	45.61	4.40	0.593
9. I can evaluate the effectiveness of teaching-learning processes.	-	-	5	8.77	29	50.88	23	40.35	4.32	0.631
10. I can interpret the results of the measurement-evaluation process.	2	3.51	4	7.02	26	45.61	25	43.86	4.30	0.755

	11. I can choose the evaluation method appropriate to the objective.	-	-	6	10.53	28	49.12	23	40.35	4.30	0.654
	12. I can determine the appropriate teaching technique for the objective.	1	1.75	2	3.51	35	61.40	19	33.33	4.26	0.613
	13. I can choose educational materials suitable for learning-teaching processes.	-	-	2	3.51	31	54.39	24	42.11	4.39	0.559
	14. I can determine whether the content is suitable for the duration of the objective.	-	-	6	10.53	30	52.63	21	36.84	4.26	0.642
	15. I can determine the appropriate teaching method for the objective.	1	1.75	4	7.02	29	50.88	23	40.35	4.30	0.680
Writing dimension		**f**	**%**	**f**	**%**	**f**	**%**	**f**	**%**	**X**	**Sd**
	16. I can design educational materials suitable for learning-teaching processes.	2	3.51	16	28.07	19	33.33	20	35.09	4.00	0.886
	17. I can prepare a measurement tool suitable for the objective.	-	-	10	17.54	30	52.63	17	29.82	4.12	0.683
	18. I can design educational activities suitable for teaching-learning processes.	-	-	12	21.05	27	47.37	18	31.58	4.11	0.724
	19. I can write evaluation criteria appropriate to the objective.	3	5.26	17	29.82	21	36.84	16	28.07	3.88	0.887
	20. I can write objectives according to expected student behavior.	3	5.26	9	15.79	25	43.86	20	35.09	4.09	0.851
	21. I can write objectives appropriate to the student's level.	-	-	10	17.54	26	45.61	21	36.84	4.19	0.718
	22. I can analyze a measurement tool by taking into account its objectives.	2	3.51	14	24.56	22	38.60	19	33.33	4.02	0.855
	23. I can write questions appropriate to the objective.	1	1.75	5	8.77	24	42.11	27	47.37	4.35	0.719
	24. I can design learning-teaching processes	3	5.26	6	10.53	22	38.60	26	45.61	4.25	0.851

	appropriate to the teaching technique I choose.									
	25. I can write content that is relevant to the objective.	4	7.02	11	19.30	22	38.60	20	35.09	4.02	0.916
	26. I can design learning-teaching processes appropriate to the teaching method I choose.	3	5.26	8	14.04	28	49.12	18	31.58	4.07	0.820
	27. I can design the content according to the objective of the subject area.	1	1.75	12	21.05	29	50.88	15	26.32	4.02	0.743
	28. I can write appropriate horizontal objectives for the course/subject area.	5	8.77	13	22.81	26	45.61	13	22.81	3.82	0.888
	29. I can enrich the content according to the objective.	1	1.75	10	17.54	27	47.37	19	33.33	4.12	0.758

Note: *Since teachers did not mark the "strongly disagree" option for any item, this column is not shown in the table.*

When teachers' responses to the items in the Curriculum Literacy Scale are examined one by one, it is seen that the highest rates are generally in the "agree" option. As seen in Table 3, the item in which teachers marked the "strongly agree" option at the highest rate was "I can check the suitability of the content to the student level" (57.89%), while the lowest rate was observed in the statement "I can set appropriate horizontal targets for the course/subject field" (22.81%). The option "I agree" had the highest rate in the statement "I can determine the appropriate teaching technique for the target" (61.40%) and "I can determine the level of relationship of the content to the objectives" " (59.65%). When the teachers' responses are examined in terms of statements numbered 1-15 in the "Reading" subscale and statements numbered 16-29 in the "Writing" subscale, it is seen that the participation in the statements in the Writing dimension is relatively lower. In the "I moderately agree" option, the rates for the items in the "writing" dimension are higher. On the other hand, teachers did not mark the "strongly disagree" option for any item.

Teachers' Definitions of the Concept of Curriculum Literacy

In the survey prepared to collect qualitative data, teachers were first asked to define the concept of curriculum literacy. Findings regarding teacher definitions are presented in Figure 1.

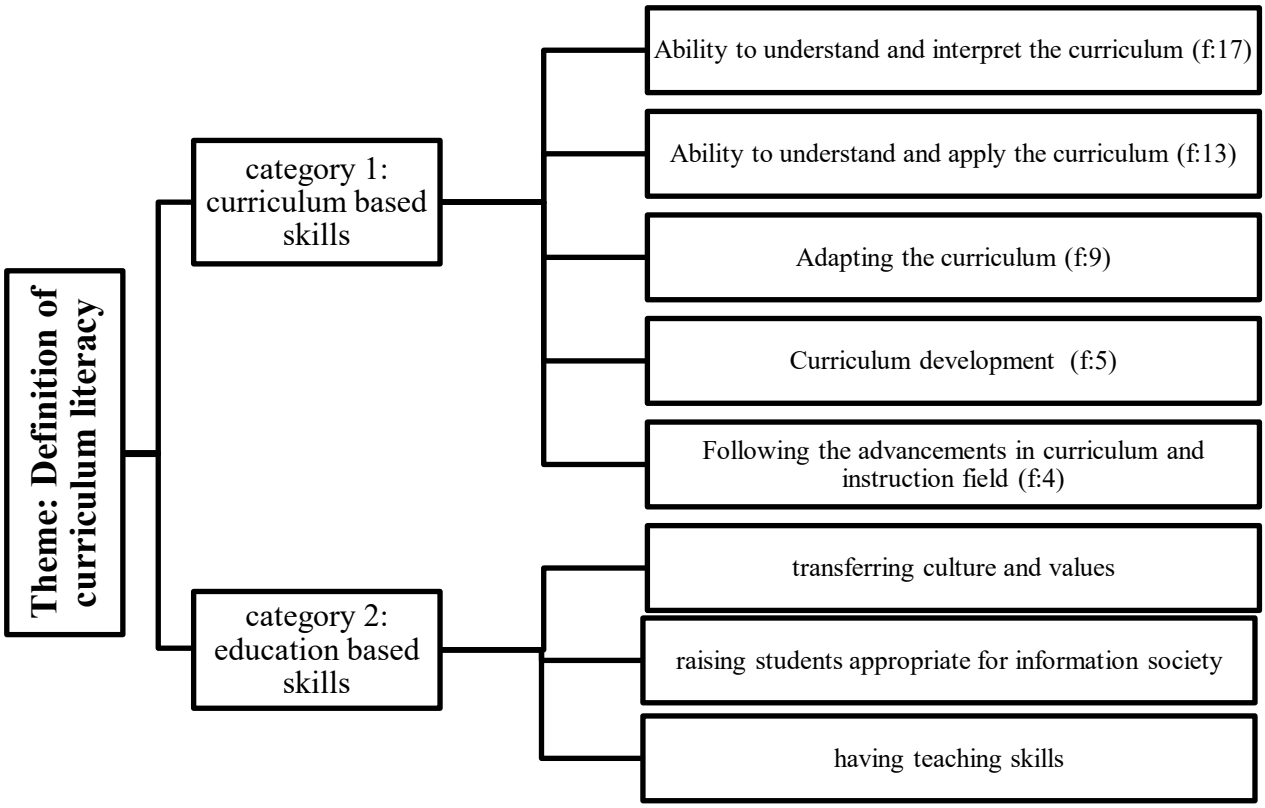

Figure 1. Teachers' definitions for curriculum literacy

As seen in Figure 1, teachers' definitions of curriculum literacy are grouped under two themes: curriculum based and education based skills. The most emphasized definitions among curriculum based skills are ability to understand and interpret the curriculum (f:17), understanding and applying the curriculum (f:13) and adapting the curriculum (f:9). In the context of education based skills in general, the definitions of transferring culture and values and having teaching skills are the most emphasized expressions. Some teachers' statements regarding this are as follows:

> *"When we look at the curriculum; "To understand the target audience of the curriculum, the objectives that this audience will achieve, how these objectives can be applied, with what method, and how to measure the level of objectives"* T43.

> *"To understand correctly the structure, scope, features and relationships of the curriculum prepared by the center for the whole country and to make sense of how this curriculum can be made applicable in real life"* T40.

Teachers' Views on Main Elements of Curriculum

Another question asked in the teacher survey aims to determine teachers' views regarding the main elements of the curriculum and the features that these elements should have. Teachers' views on the elements of the curriculum were collected in four themes: "Main elements of the curriculum", "other elements", "characteristics of the elements of the curriculum" and "relationships between the elements". These themes and their relevant codes are shown in Figure 2.

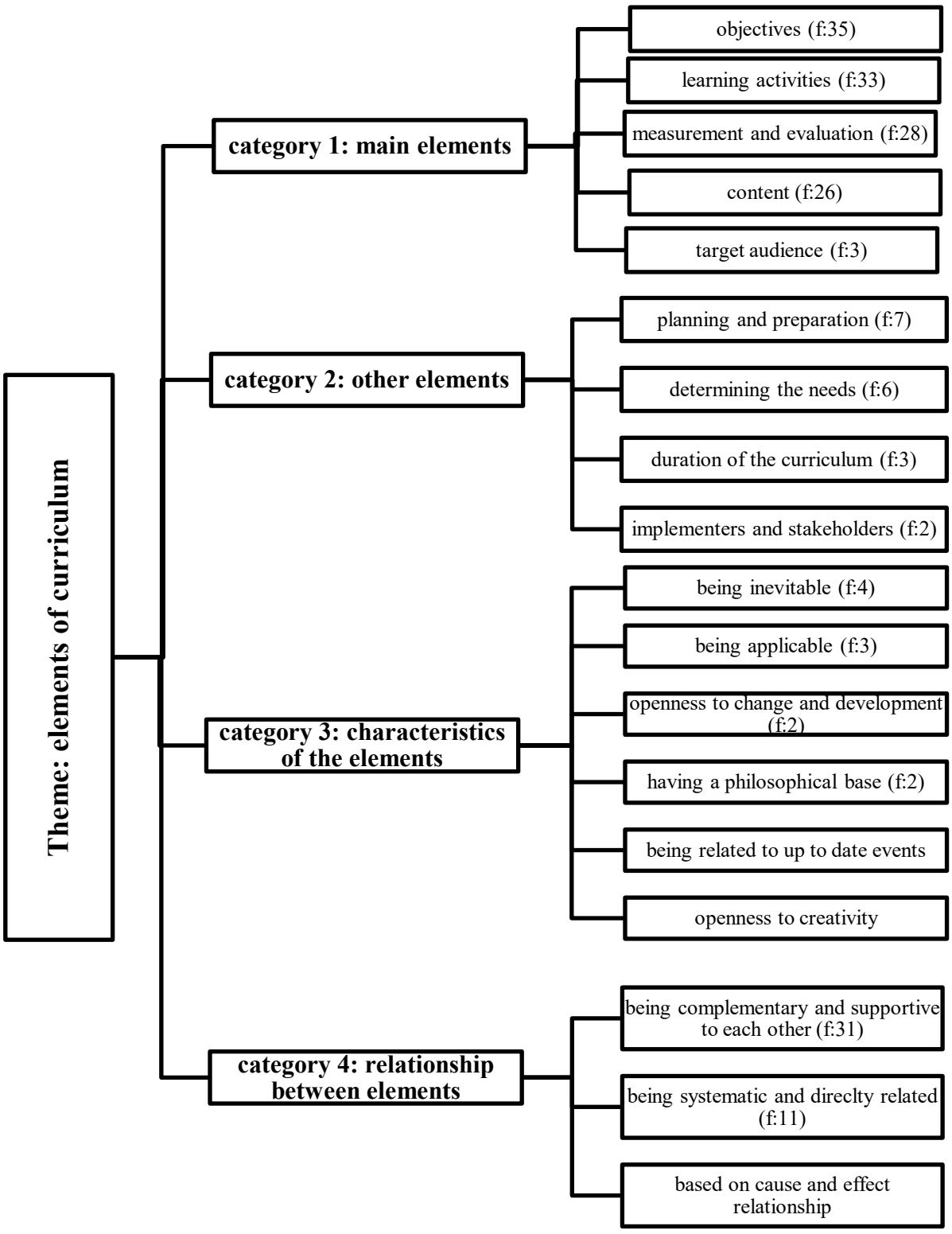

Figure 2. Main elements of the curriculum according to teachers' views

According to teachers' views, the theme of "main elements of the curriculum" was expressed as objectives (f: 35), learning activities (f: 33), measurement and evaluation (f: 28) and content (f: 23). Other elements are stated as planning and preparation, determination of needs, duration of the curriculum, implementers and stakeholders. Among the features of the program, various

aspects such as being indispensable, being open to change and development, and being based on a philosophy were mentioned. Examples of these from teacher opinions are given below:

> *"Objectives of curriculum: What behaviours do we want the individual to acquire (in general terms, the individual should be thought of as a world citizen and the behaviours to be acquired should be determined accordingly, and in a local sense, the goals should be making the individual self-sufficient and making his/her life easier)"* T24.

> *"Evaluation: Evaluating how much of the objective has been achieved"* T21.

As seen in Figure 2, teachers often defined the relationships between the elements as complementary and supportive of each other (f:31). The explanations of some teachers regarding these issues are presented below:

> *"They are all complementary to each other (each is a piece of the puzzle, but when they come together, they form a meaningful whole)."*

> *"The elements that make up the training program are a continuation of each other. They are inseparable parts. "None of them can be given up to complete the process."* T9

Within the scope of this question, participants also expressed their opinions about the factors that should be included in the main elements of the program. Findings regarding these views are shown in Figure 3.

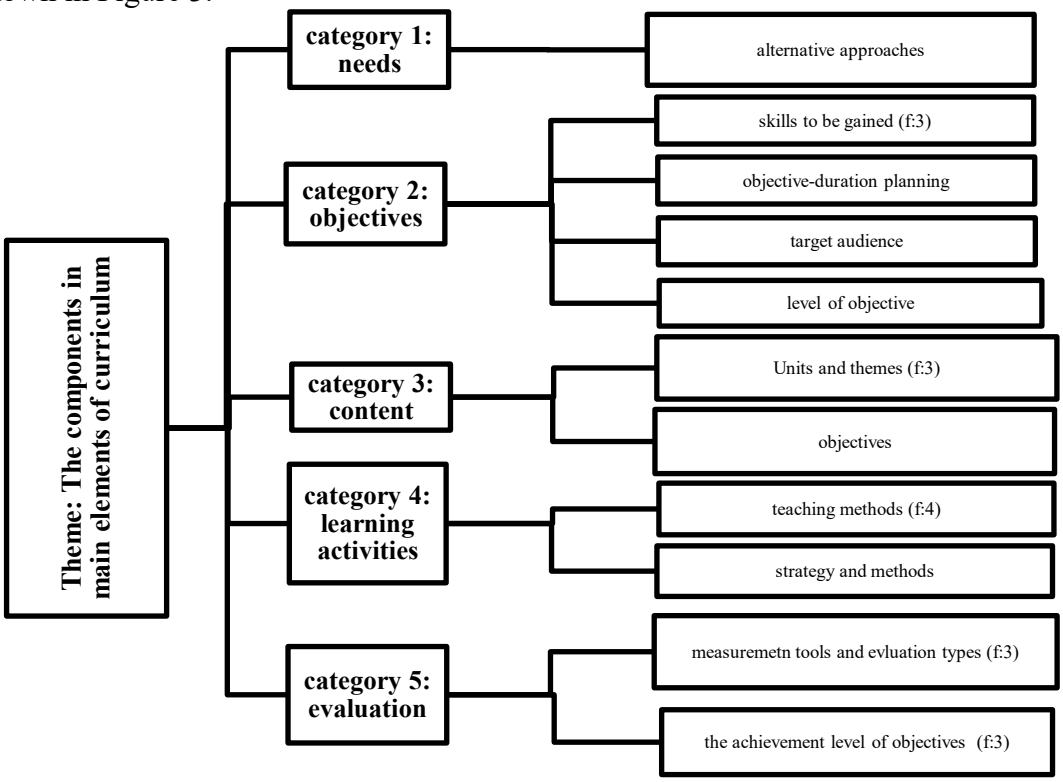

Figure 3. Teachers' views regarding the components should be included in elements of curriculum

Teachers' opinions on the elements that should be included in the curriculum were collected in the dimensions of objectives, learning activities, evaluation, content and needs. The most emphasized element in the objectives dimension was "skills to be gained" (f:3). In the learning

activities section, teaching activities (f: 4), in the evaluation section, determining the achievement level of objectives (f: 3) and measurement tools and evaluation types (f: 3), in the content section, units and themes (f: 3), and in the needs section, alternative approaches (f:1) are the most emphasized expressions. Some of the teachers' views regarding these are presented below:

> "Learning activities (instructional situations) that need to be prepared in order to achieve the desired objectives" T50.

> "In the measurement-evaluation section, there should be a list of appropriate measurement tools and explanations about evaluation types." T49.

Teachers' Views on the Process They Follow While Examining a Curriculum

Teachers were asked what process they followed when reviewing a curriculum and specifically which part of the curriculum they examined first. The findings regarding their answers to this question are shown in Figure 4.

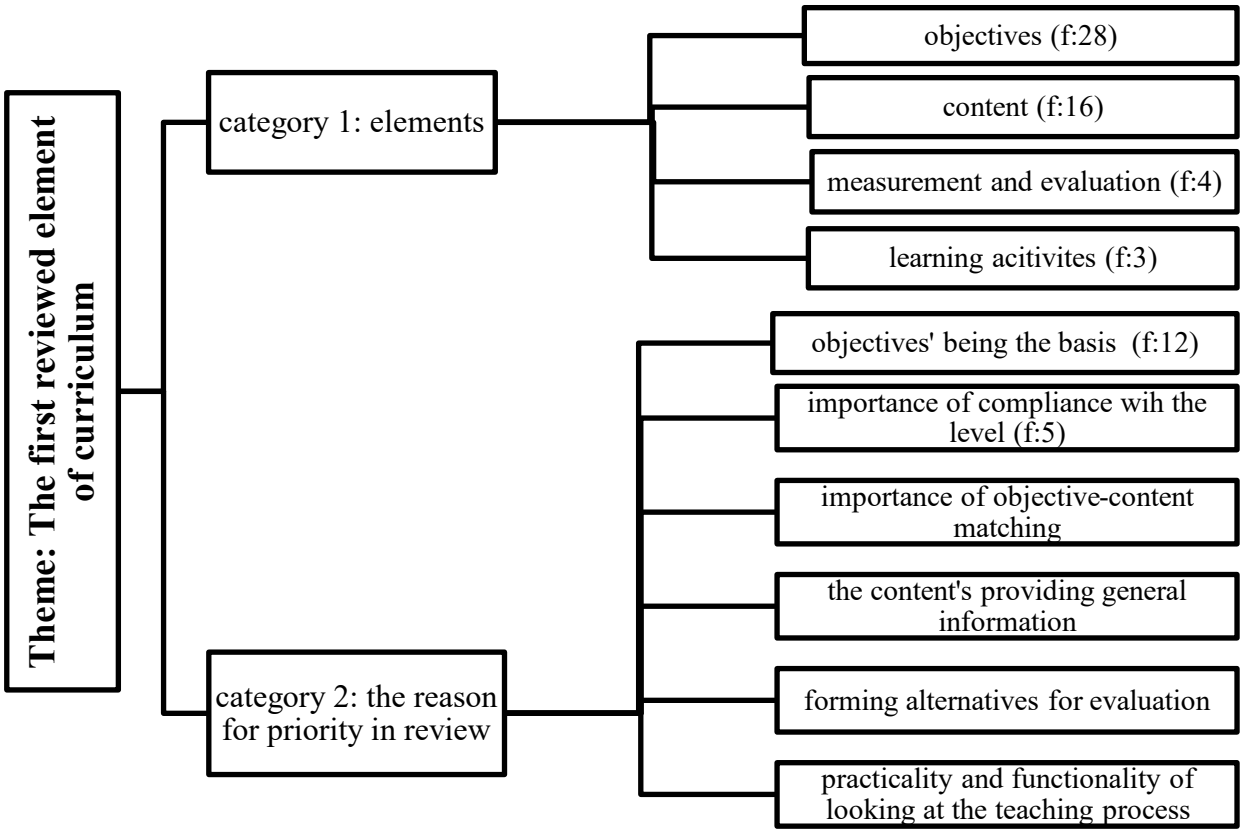

Figure 4. The first elements teachers review within curriculum and the reasons behind

As seen in the figure, the first sections that teachers examine in the program are objectives (f: 28), content (f: 16), measurement and evaluation (f: 4) and teaching activities (f: 3), according to the frequency of mention. When we asked teachers why they gave priority to these elements of the program, their explanations were about that the objectives should be included, as well as the content and learning activities and orientations to create alternatives. Some examples of teachers' views are as follows:

"First of all, I look at the qualifications that the student will acquire. I also pay attention to the ability to acquire these skills." T7

"If the objectives specified in the curriculum are too high or too low for the students, I look at that first to determine appropriate objectives for the student." T46

Teacher Views on Designing Learning-Teaching Processes

In the study, participants were also asked how they designed their learning-teaching processes. Teachers were asked to express the curriculum elements and design processes they took into consideration when making their designs. Findings regarding this are presented in Figure 5.

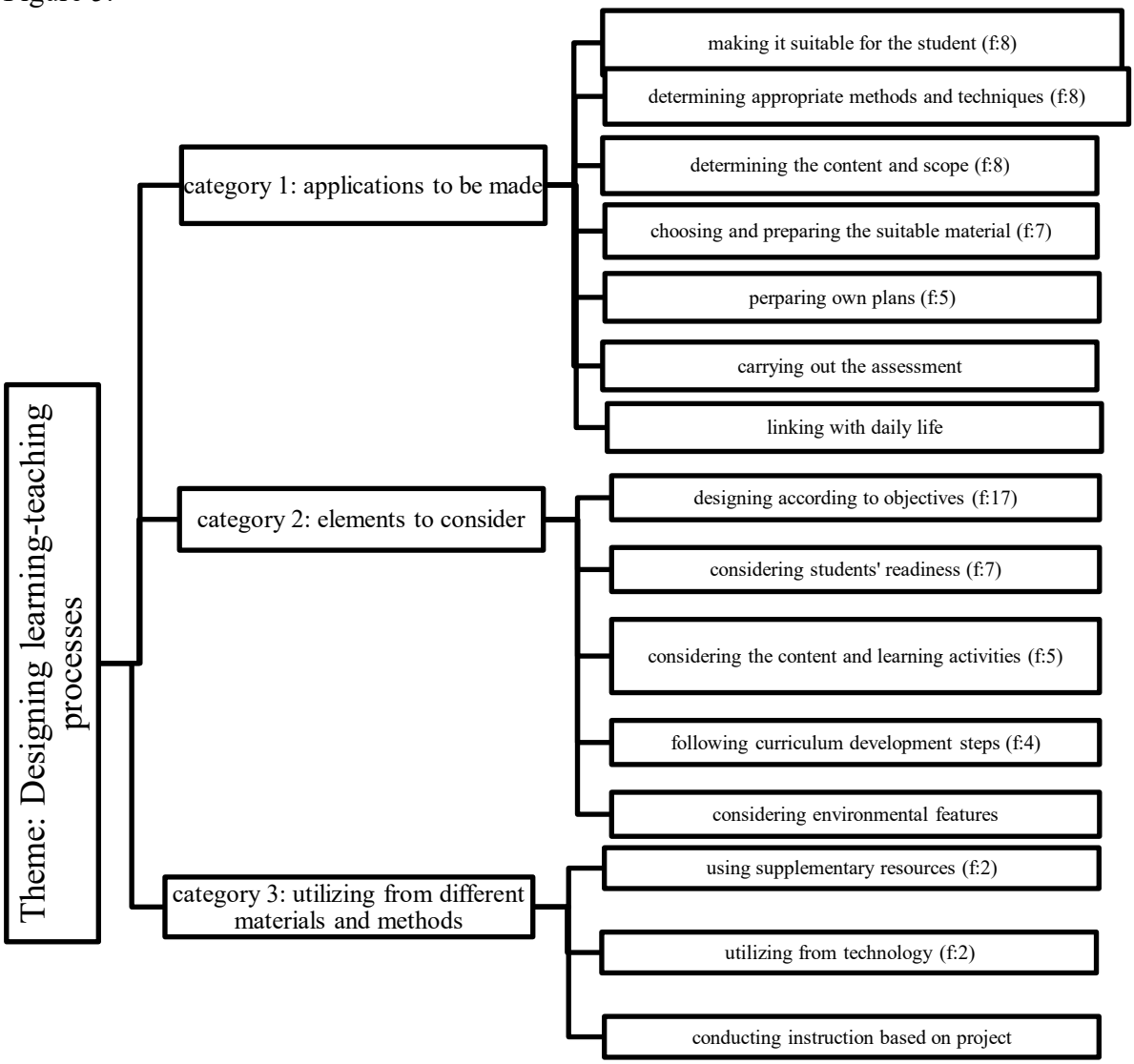

Figure 5. Teachers' views on designing teaching-learning processes

As seen in Figure 5, teachers talked about the practices they would use, the elements they took into consideration, and the use of different materials and methods when designing their learning-teaching processes. Teachers stated that some of the practices they will carry out while designing the learning-teaching processes include making them suitable for the student (f:8),

determining the content and scope, choosing and preparing materials suitable for the content; in this process, they mostly take into consideration the objectives (f:17), the student's readiness (f:7), and the content and learning activities (f:5); in terms of different resources and methods, they talked about using technology and using supplementary resources. Some of the teacher statements regarding these issues are as follows:

> *"If possible, I try to prepare by researching examples so as not to ignore targets appropriate to the readiness level of the children."* T50

> *"I design it based on the objectives of the curriculum. I apply methods and techniques appropriate to the statement in my earnings. Station, drama etc.".* T42

Qualifications that a Curriculum Literate Teacher Should Possess

Another question aimed at determining teachers' opinions was about the qualifications that teachers who are literate in the curriculum should have. The findings obtained from the answers to the question are shown in Figure 6.

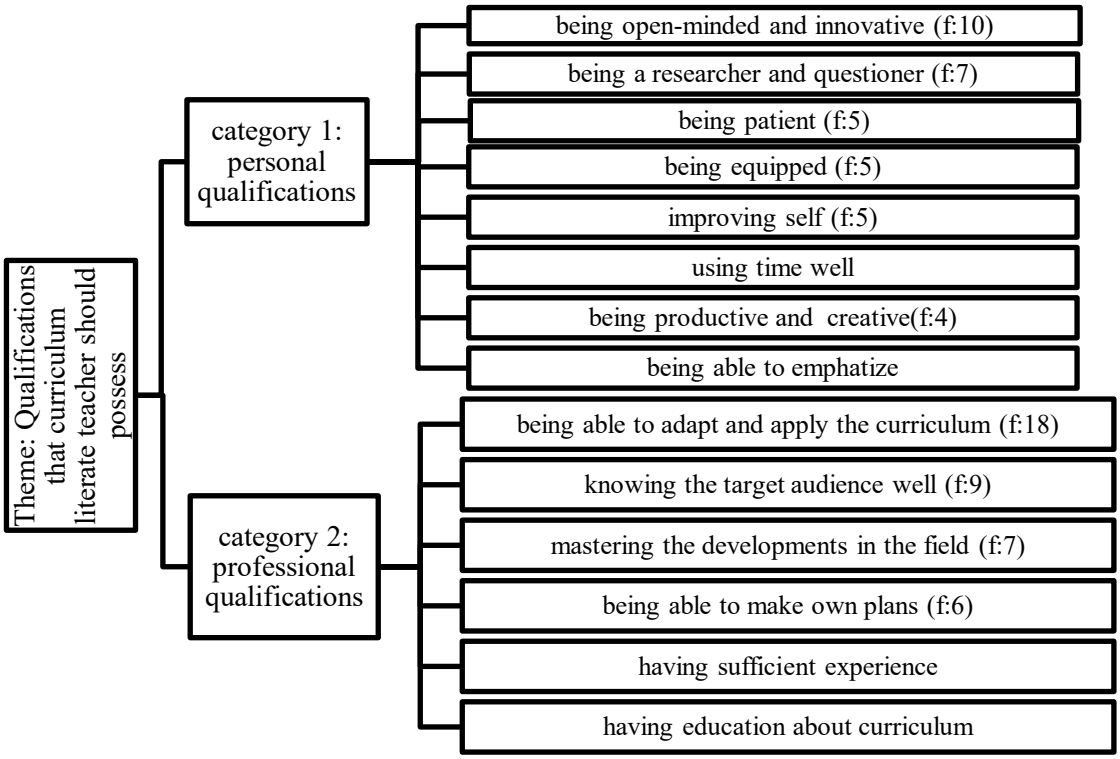

Figure 6. Qualifications that curriculum literate teacher should possess

Teachers stated that teachers who are literate in the curriculum are expected to have some professional and personal qualities. In terms of professional qualifications, the most emphasized features are being able to adapt and implement the program (f: 18), knowing the target audience well (f: 9), mastering the developments in the field (f: 7), while in terms of personal qualities, being open-minded and innovative (f:10), being a researcher and questioner person (f:7), being patient (f:5), and being well-equipped (f:5). Some of the opinions expressed in this context are stated as follows:

> *"Whatever program comes your way, it must first be reinterpreted according to the educational region in which it is located."* T1

"In my opinion, the most important thing is to be open to innovation and change." T3

Teachers' Self-Evaluation in terms of Qualifications Related to Curriculum Literacy

After asking the teachers about the qualifications that a curriculum literate teacher should have, they were asked to make an evaluation of themselves in terms of these qualifications. The self-evaluation findings of the teachers in terms of the qualities expressed by them and shown in Figure 6 are shown in Figure 7.

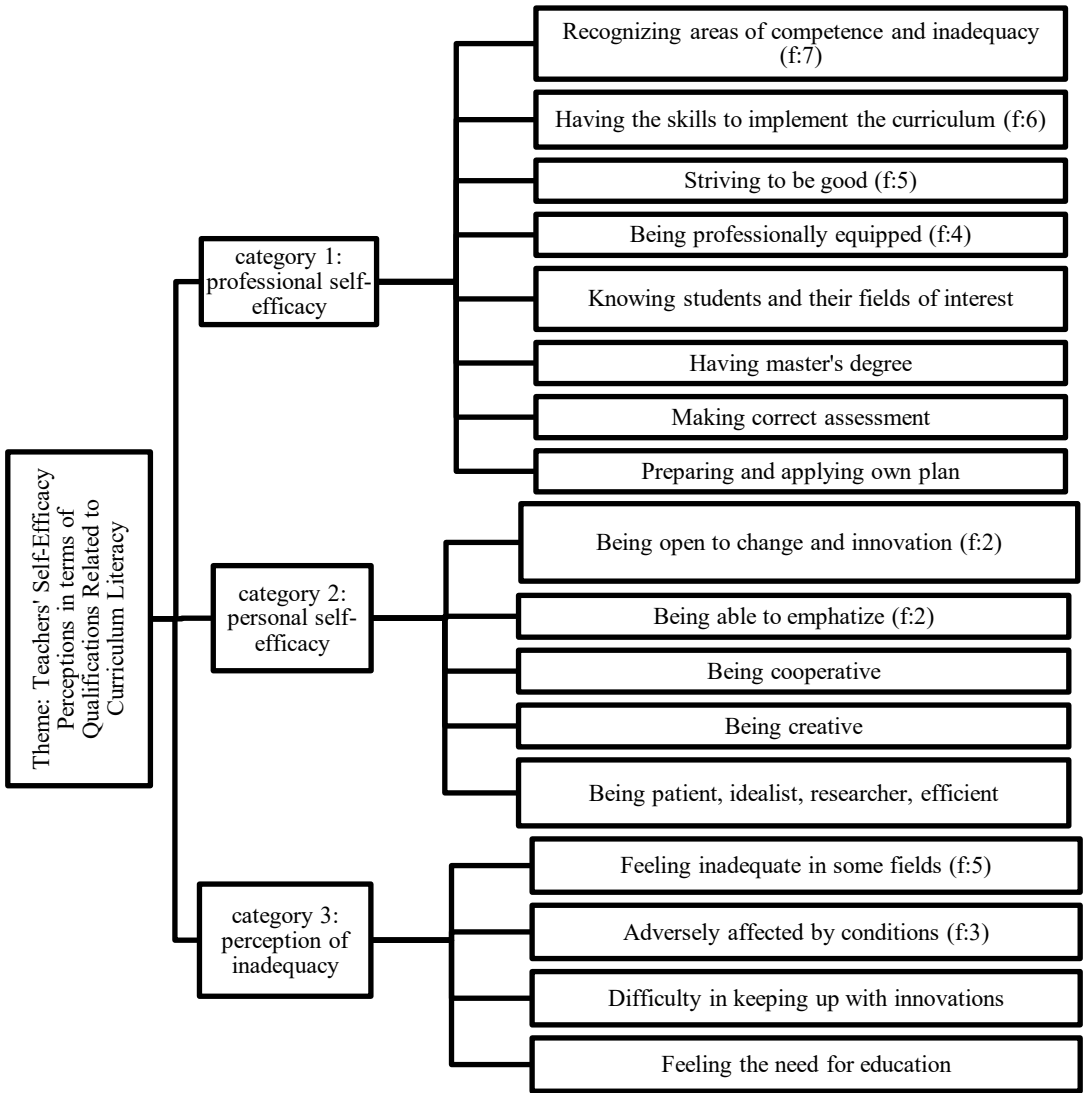

Figure 7. Teachers' self-evaluation in terms of qualifications related to curriculum literacy

Figure 7 shows that teachers' self-efficacy evaluations in terms of qualifications related to curriculum literacy are collected under the headings of professional self-efficacy perceptions, personal self-efficacy and inadequacy perceptions. They mentioned skills such as recognizing the areas in which teachers are competent and inadequate within the scope of their professional self-efficacy (f:7), having the ability to implement the curriculum (f:6), striving to be good and being professionally equipped, and indicated the characteristics such as being able to empathize with personal self-efficacy (f: 2), being open to change and innovation (f:2). Also, some put forward competencies such as love and dedication to profession, making teaching fun and being a good model. Regarding inadequacies, explanations such as feeling inadequate in some fields (f:5) and being adversely affected by conditions (f:3) were included. Some of the teachers'

statements regarding their self-efficacy evaluations are as follows:

> *"When I evaluate it in terms of curriculum literacy, of course I think I have shortcomings. Because the intensity of the current curriculum and its achievements hinders the learning process."* T37

> *"For me, the readiness of my students is very important. I look at the achievements and other processes of the curriculum, but I do not adhere to every element 100 percent. In some classes I can increase the gains, in some classes it is less. "I even taught my students with different techniques in the same class."* T43

Teacher Suggestions for Improving Curriculum Literacy Skills

Another question asked to the participants in the survey was about teachers' suggestions for improving their curriculum literacy skills. The findings from the answers to this question are presented in Figure 8.

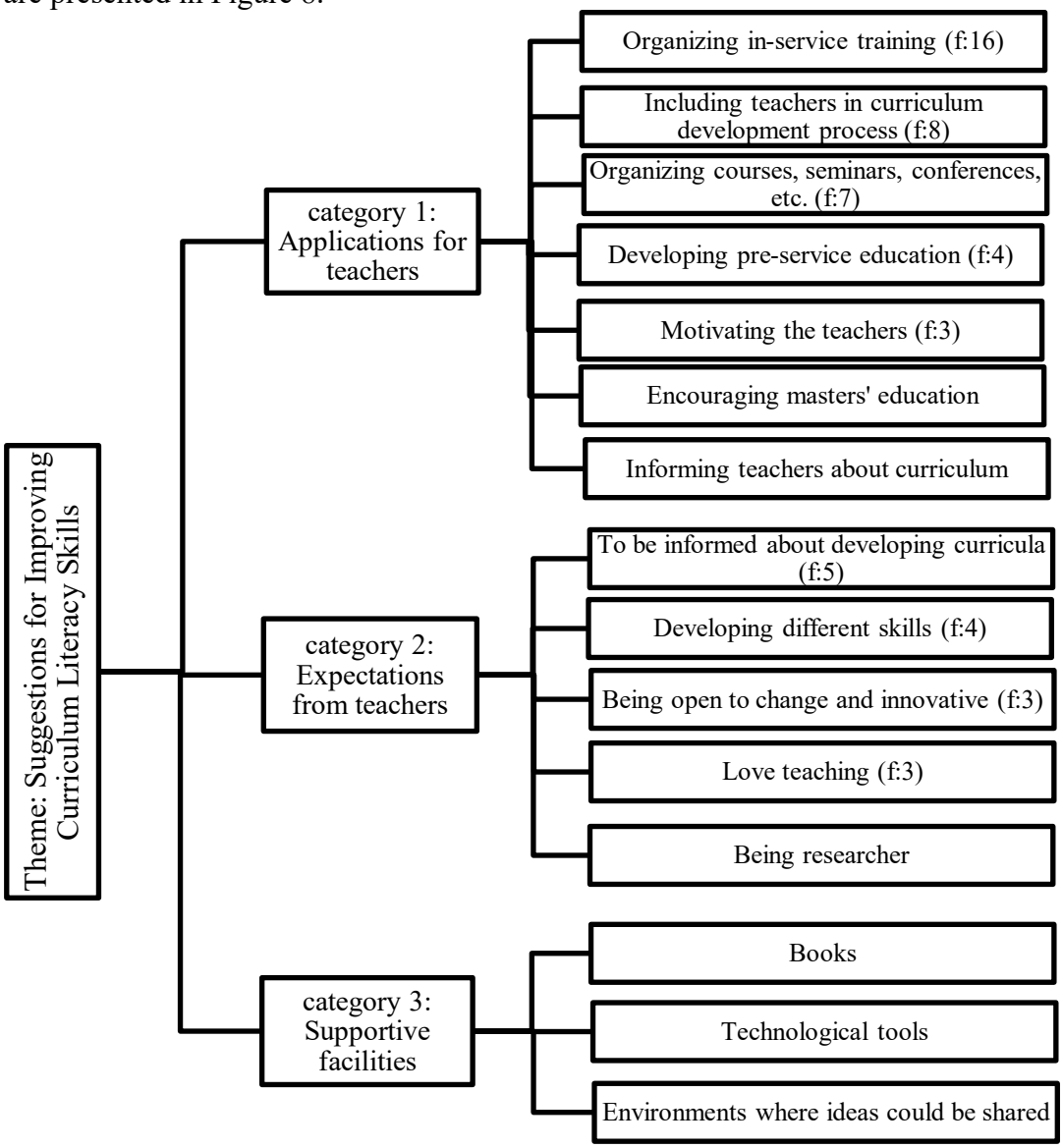

Figure 8. Teachers' suggestions for improving curriculum literacy

As seen in the figure, teachers' suggestions are stated as application suggestions for teachers, expectations from teachers, and providing supportive facilities. While within the scope of practices, organizing more in-service training (f:16), organizing courses and seminars (f:7) and involving teachers in the curriculum development process (f:8) were stated, teacher characteristics such as being informed about developing curricula (f:5) and being open to change and innovative (f:3) and opportunities such as technological tools (f:1) and books (f:1) were presented as suggestions. In this regard, some of the participating teachers expressed their suggestions as follows:

> *"In-service training programs on this subject should primarily be done face-to-face, not distance education. And our teachers need to attend these trainings."* T40

> *"While preparing the curricula, opinions should be taken from all teachers in every branch throughout Türkiye."* T18

Discussion

The study's results indicated that the participating teachers had high self-efficacy perception scores regarding their curriculum literacy levels. In contrast, a limited number of similar studies have found that teachers perceived their curriculum literacy levels as low (Boncuk, 2021) or at a medium level (Çetinkaya & Tabak, 2019; Kahramanoğlu, 2019; Saral, 2019; Yıldız, 2019). However, most studies concluded that teachers generally possess a high level of curriculum literacy proficiency, consistent with the findings of this research. Several recent studies involving teachers and pre-service teachers reported high curriculum literacy proficiency, including works by Aslan and Gürlen (2019), Avar-Vayvay (2020), Demir and Toraman (2021), Erdamar (2020), Gülpek (2020), Keskin and Korkmaz (2021), Kuyubaşıoğlu (2019), Nasırcı (2022), and Yılmaz and Kahramanoğlu (2021). These findings suggest that teachers view themselves as curriculum literate. Süer and Demirkol (2023) reviewed research on curriculum literacy in Turkey and found that various studies across different school levels reported that teachers' curriculum literacy was generally high. A common characteristic of these studies was the use of quantitative methods, typically utilizing 5-point Likert scale measurement tools. In this study, however, we also included open-ended questions to gather detailed opinions from teachers. Even though teachers provided high scores on the evaluation scale, an analysis of their responses to the open-ended questions about "curriculum literacy" showed that fewer than 25% of the 57 teachers defined it as "understanding, interpreting, or applying the curriculum." Only nine teachers mentioned the curriculum adaptation, and five teachers spoke about curriculum development. Overall, it was found that they generally struggled to define curriculum literacy in a way that encompassed both reading and writing dimensions.

Discrepancies arose between quantitative and qualitative data when teachers were asked about the qualifications for curriculum-literate teachers and their own competence. Although high self-efficacy scores for curriculum literacy are promising, concerns about "social desirability," a common issue in quantitative data collection, must be acknowledged. Krumpal (2013) defines social desirability as the tendency to present oneself in line with cultural norms when responding to surveys. According to Karaşar and Öğülmüş (2016), the need for social approval relates to how much individuals value the expectations and judgments of others, leading them to emphasize harmonious behaviours in social interactions. Phillips and Clancy (1972) argued that people's behaviour is shaped by their needs and values, which in turn affects their responses, casting doubt on the validity of survey tools. To counter this limitation, the study

included open-ended questions alongside quantitative inquiries, allowing for the comparison of data types. This approach combined the strengths of one method with the weaknesses of another. Consequently, while quantitative data might suggest that teachers are highly competent in curriculum literacy, incorporating qualitative data uncovers significant shortcomings. This highlights the need for caution when interpreting the findings.

A significant finding in teachers' scale scores highlights their performance across different dimensions. The average score for the "Reading" subscale is impressive with 4.29, reflecting a "very high" level of proficiency, while the "Writing" subscale averages 4.07, categorized as "high." Analysis of individual items reveals that more teachers responded with "completely agree" in the reading dimension than in writing. This aligns with the research of Erdem and Eğmir (2018), Güneş Şınego and Çakmak (2021), Nasırcı (2022), Saracaloğlu and Gündüz (2023), and Sarıca (2021), who explored teachers' curriculum literacy levels. Examining the reasons for lower writing scores, it's notable that reading items focus on abstract processes like "...I can distinguish, detect, and interpret," while writing items emphasize practical actions such as "...I can design, prepare, and analyze." This contrast reveals a critical gap between theoretical knowledge and practical application, highlighting the need for targeted professional development in writing skills.

"Implementation" in this context refers to a teacher's ability to adapt to the curriculum by considering objectives, content, teaching methods, student levels, and available resources. To be curriculum-literate, teachers must design their instruction accordingly. In this process, "reading" involves preliminary preparation, while "writing" entails creating lesson plans and practical instruction. Teachers need a higher level of skills in the writing dimension. For example, 45.61% of teachers strongly agreed that they could understand objectives, while only 36.84% felt they could write objectives appropriate to their students. In the reading dimension, 43.86% strongly agreed that "I can choose content that suits the objective," compared to 35.09% in the writing dimension who strongly agreed that "I can write content that is relevant to the objective." Further analysis showed that only 24 out of 57 participants identified essential qualifications for a curriculum-literate teacher. Many of them emphasized the importance of adapting and implementing the curriculum, while some highlighted the need to create their own plans. These findings suggest that teachers struggle to translate their understanding of curriculum skills into practical lesson planning. While both reading and writing dimensions measure high-level skills, the writing aspect involves presenting and applying these skills as observable outputs. Erdem and Eğmir (2018) and Çetinkaya and Tabak (2019) examined the curriculum literacy levels of pre-service teachers, finding that their writing scores were lower than their reading scores. They linked this gap to the expectation for these teachers to produce original written work that aligns with curriculum elements, despite their lack of practical experience. Güneş and Uygun (2016) stressed the importance of both acquiring teaching skills and effectively applying them in practice. They noted that teacher training introduces skills first, followed by activities that promote application in various contexts, aimed at improving teachers' effectiveness and ensuring that learned skills align with professional and everyday life. However, this study indicates that the theory-practice balance emphasized by Güneş and Uygun has not been fully achieved, a concern also raised by Aslan and Sağlam (2018), Baş and Nural (2023), and Taş, Kunduroğlu-Akar, and Kıroğlu (2017).

Research revealed that teachers recognize the fundamental components of the curriculum—objectives, content, teaching processes, and evaluation—as interrelated and supportive. However, only 16 out of 57 teachers (28%) considered these characteristics essential. Additionally, while six teachers shared their views on objectives, teaching processes, and

evaluation, only four addressed the content element. Teachers prioritize objectives (f: 28) and content (f: 16) when reviewing a curriculum, while very few mention measurement and evaluation (f: 4) or the teaching process (f: 3). This suggests they may not fully understand their priorities. Although teachers know the curriculum they use, they often lack clarity on its parts and functions. Research supports this; for instance, Şimşek (2017) found that more than half of classroom teachers could not correctly define "curriculum" or understand its key elements. Similarly, Süer and Demirkol (2023) found that teachers struggled to explain the philosophy, values, and competencies within the curriculum. This lack of understanding is a serious issue as teachers are responsible for effectively implementing curricula and imparting essential knowledge, skills, attitudes, and values to students.

Examining the findings about teachers' design of learning and teaching processes, we found they provided more detailed information about teaching methods than other curriculum parts. They described strategies to meet objectives, cover content, address students' readiness levels, and develop the curriculum. They also talked about suitable materials, methods, and preparing lesson plans. Although their responses about the four basic curriculum elements were limited, their insights on instructional design may be due to years of classroom experience. Teachers tend to feel more confident discussing classroom activities than the mainly reading-focused objectives and content. The observation that 47 out of the 57 teachers involved in the study have at least six years of professional experience is noteworthy. Additionally, 13 of these teachers possess 11 years or more of experience, and 15 have 21 years or more. This underscores the validity of the findings. Similar studies indicate that teachers' understanding of the curriculum often improves with experience. Bulut (2023) and Sarıca (2021) found that older teachers and those with more seniority generally have higher scores in curriculum literacy. Güneş-Şınego and Çakmak (2021) observed increases in scores with seniority, though not statistically significant. Pektaş and Pesen (2021) noted that experienced teachers scored higher in all areas of curriculum awareness, particularly in cognitive and emotional aspects. However, some research suggests that seniority may not significantly affect curriculum literacy levels (Demir & Toraman, 2021; Kahraman, 2020; Kahramanoğlu, 2019). In summary, further research is needed to understand the impact of seniority on curriculum literacy.

Through the quantitative and qualitative parts of the research, it is seen that while teachers see themselves competent through the items of the scale, the definitions or explanations they provided for curriculum and its components within qualitative part were not sufficient. Even though they mostly know what the components of a curriculum are, they did not efficiently put forward which parts are more important or how they should be enhanced. Also, in both parts (qualitative and quantitative) the productivity of teachers are found to be low. They got lower scores for "writing" dimension in the scale, they did not mention creating their own plans or processes through courses as well. The curriculum literacy is a vital competent for all teachers. Teachers should know the way they will follow through curricula. Süer and Demirkol (2023) explained the functions of curriculum literacy regarding reaching educational goals and its contribution through curriculum development and evaluation studies. These both could be enhanced through elaborating on teachers' understanding of curriculum. Ryu (2015) asserted that the whole class starts on teachers' understanding on curriculum and suggests teachers should get the role of a developer or a virtual organizer through curriculum not only a user. These skills can provide teachers a more effective and adaptive ability to engage in the curriculum in their teaching process. Thus, curriculum literacy is inevitable for teaching profession and the meaningful application of curriculum within classrooms.

Generally, this research shows that teachers lack understanding of curriculum. To address this,

participants suggest providing support through in-service training to help improve teachers' skills. It is urgent to review teacher training programs to ensure all future teachers gain the necessary knowledge and skills for their careers. We need to address curricular challenges, such as the lack of required curriculum development courses and too much focus on theory over practice, as well as physical challenges like inadequate facilities and materials. Solving these issues will help prepare competent teachers. The writing dimension prioritizes practical application over theory. Achieving a balance between theory and practice in teacher training is essential for addressing inconsistencies. This study utilized an online survey and open-ended questions, revealing that the quantitative and qualitative findings often diverged. For future research, conducting face-to-face interviews with teachers and performing long-term classroom observations could enhance the depth and reliability of the data collected.

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Informed Consent: Informed consent was provided from the participants of the interviews and the survey.
Data availability: The datasets generated during and/or analyzed during the current study are not publicly available [due to restrictions e.g. their containing information that could compromise the privacy of research participants] but are available from the corresponding author on reasonable request.

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