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Development Study of The Inventory of Orientations in Curriculum Theories (IOCT) (From Qualitative Cluster Analysis to Quantitative Confirmatory Factor Analysis) *

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Abstract

In this research, teachers' orientations in curriculum theories were identified via an assessment tool which was grounded by Marsh and Willis (2003) where curriculum theorists were classified. "The Inventory of Orientations in Curriculum Theories" was developed to identify the teachers' orientations in curriculum theories in this research. The item pool for the inventory was obtained through a qualitative clustering analysis applied on the studies in the related literature. Later, Exploratory Factor Analysis and Confirmatory Factor Analysis were applied separately on each scale of the inventory. As the result of this process, "the Inventory of Orientations in Curriculum Theories" was developed which consisted of "the Scale of Orientations in Prescriptive Curriculum Theories", "the Scale of Orientations in Descriptive Curriculum Theories" and "the Scale of Orientations in Critical-Exploratory Curriculum Theories". In this context, a new culture-specific measurement tool has been developed that aims to determine the interaction between scientists, specialists and teachers in the field, in other words, theorists and practitioners. The IOCT inventory consists of three scales: OSPCT, OSDCT and OSCECT. OSPCT consists of 27 items, OSDCT consists of 18 items and OSCECT consists of 19 items. The highest score that can be obtained from OSPCT is 135 and the lowest 27; The highest score that can be obtained from OSDCT is 90 and the lowest is 18; the highest score that can be obtained from OSCECT is 95 and the lowest is 19. Thus, it can be determined to what extent a teacher has a prescriptive, descriptive or critical-explanatory curriculum theory orientation.

Keywords: Curriculum Theories, Teachers' Orientations in Curriculum Theories, The Inventory of Orientations in Curriculum Theories

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Introduction

Curriculum orientation determines how teachers view the curricula, their dimensions and how they utilize them. As for the orientation of curriculum theories, it specifies how teachers explain and apply the curricula and their dimensions based upon the theories developed by curriculum specialists. In this context, the concept of theory can be examined in terms of its function. It is used to describe, describe, explain, and predict theories, as well as to offer suggestions for structures, relationships, and outcomes (Huenecke, 1982). Theories are part of educators' thinking, and these theories shape the theoretical and philosophical foundations of educators' actions (Ornstein and Hunkins, 1998). In other words, theories guide the thoughts of educators (Henson, 1995) and determine the activities they perform (Miller, 2011).

Studies show that the theories adopted by teachers (Chant, 2002; Cornett, 1990) and their beliefs about curriculum (Stipek, Givvin, Salmon, and MacGyvers, 2001; Peacock, 2001) affect the decisions they make in the classroom and the teaching they perform. Because teachers' beliefs about what is right or wrong in the education/teaching process is one of the most important factors that determine which aspects of the curriculum and with what intensity they will emphasize (Pajares , 1992; Hasweh , 2003).

Curriculum orientation includes the educational paths that teachers develop and put into practice, based on all their personal beliefs and value judgments (Jax, 1986). Cheung (2000), on the other hand, states that curriculum orientations are determined by the backgrounds, experiences, culture and priorities that teachers bring to the school, and they consist of different beliefs about what schools should do and how students should learn. In other words, curriculum orientation determines the point of view of teachers regarding the curriculum, such as goals, student-teacher roles, content, activities performed, and expected learning outcomes, and how they will use them.

Classifications aiming to explain the orientation of curriculum theories were carried out. According to McNeil (1977), there are four different curriculum orientations. These orientations are; humanistic, social reconstructionist, technological and academic orientations. Another known classification of orientation in curriculum theories is Eisner and Vallance (1974)' s five basic orientation classifications. These; “academic”, “social restructuring”, “cognitive”, “humanitarian” and “technological” orientations (Jenkins, 2009; Cheung and Wong, 2002; Crummey, 2007). Ornstein and Hunkins (1998) classified orientation of curriculum theories into two categories as “technical and scientific” and “technical and non-scientific”. In the category of “technical and scientific”, “behavioral”, “managerial”, “technological (system)” and “academic” orientations; In the category of “technical and non-scientific”, there are “humanist” and “social restructuring ” orientations.

For this purpose, it is seen in the literature that measurement tools aiming to determine the teacher's orientation of curriculum theories have been developed. Curriculum Orientation Inventory , first developed by Cheung (2000) and later adapted by Cheung and Wong (2002). COI 5 dimensions were determined as " academic, cognitive processes, technological, humanistic and social restructuring ". Later COI, modified by Rice and Mahlios (2003). In the developed measurement tool, it was stated that when applied in different cultures, some items shifted between dimensions (Jenkins , 2009). Among the reasons for these psychometric problems, it was stated that individuals did not include themselves in only one group or that the theories could not be completely separated from each other. In this context, teachers' theoretical orientations can be re-examined with the help of measurement tools to be developed within the framework of different classifications.

Philosophical and Theoretical Origins of Inventory Of Orientations In Curriculum Theories (IOCT)

Marsh and Willis (2003) used the groupings of Macdonald (1971) and Jackson (1992) while classifying the theorists in the field of curriculums. Accordingly, McDonald (1971) made a classification by taking into account the approaches that curriculum theorists reflected in their studies. Accordingly, the first group is theorists who make practice their goal and prioritize working on practice problems at school. The second group is theorists who are made for experimental purposes and based on curriculum development. In other words, these theorists use empirical research processes to reveal curriculum-related variables and relationships between variables. In the third group, there are theorists who try to overcome the deficiencies in the meaning of the concepts and to overcome these deficiencies. Jackson (1992) combined the first two groups described by Macdonald (1971) in his classification. In the other group, Jackson (1992) included other theorists who defended Tyler's rationalism and criticized the theorists who explained the curriculum with eclectic sources. From this point of view, Marsh and Willis (2003) define curriculum theorists; classified them as prescriptive, descriptive, and critical- exploratory.

Table 1. Classification of Paradigms/Perspectives on Curriculum Theories

Prescriptive	Descriptive	Critical- Exploratory
• Social needs- child centered	• Pragmatists	• Social and cultural control
• Social need - reconstructional		• Autobiographical/ biographical
• Philosophical-academic rational		• Phenomenological
• Social effectiveness		• Existential / psychoanalytic
• Social need- rational/technical		• Gender analysis and feminist pedagogy
		• Cultural reproduction
		• Social reproduction
		• Literary artist
		• Postmodern / poststructural
		• Race

Source: Marsh and Willis , (2003)

Classification of curriculum theorists with different approaches is given in Table 1. It can be said that prescriptive theorists focus on society, descriptive theorists focus on the individual and more specific groups, and critical-explanatory theorists focus on taking a stance against social and individual inequalities.

In the context of social theory, it can be said that prescriptive theorists are based on structural functionalists, descriptive theorists are liberal, and critical-exploratory theorists are based on approaches in critical theory and pedagogy. It can be stated that while the theories based on the prescriptive theorists mostly represent the period of modernity and modernism, the theories on which the critical-explanatory theorists are based represent the period of post- modernism. It can be said that the theories on which descriptive theorists are based represent a transition period between modernism and postmodernism in historical and theoretical terms.

This classification is also supported by the theory-practice conflict in educational sciences. Prescriptive theorists prioritize theories and argue that practice can be realized within the framework of theories, while descriptive theorists put practice in the foreground and argue that practices create theories. When the approaches of prescriptive theorists are examined, it can be said that while the power center is the curriculum development specialists, in the approaches of the descriptive theorists, the power center shifts to the teacher. Critical-exploratory theorists, on the other hand, question the theory-practice relationship with a critical method and display a stance against power centers. On the other hand, critical-explanatory theorists do not distinguish between theory and practice, but give importance to theory-practice interaction, emancipation, emancipation praxis, etc. highlighting the concepts.

Psychometric properties of the Inventory of Orientations in Curriculum Theories (IOCT)" search for an answer to the question. In addition, as a methodological innovation in this study, it was aimed to develop a systematic by using qualitative clustering analysis in the item writing process of the scales in the inventory.

Method

In this section, information is given about the study group of the research and the development stages of the inventory. In this context, cluster analysis was performed in the QDA Miner qualitative analysis program to obtain the items during the development phase of IOCT. Specialist opinion was taken for the items obtained and the content validity ratios of the items were calculated. Then, the validity and reliability analyzes of the scales in which the draft items were brought together were made. In this context, SPSS program was used for exploratory factor analysis and Lisrell package program was used for confirmatory factor analysis.

Study Group

For the first stage of the research, a study group was formed among the teachers working in primary, secondary and high schools affiliated to the Ministry of National Education in the 2015-2016 academic year in Ankara.

Data were obtained from the study groups in order to perform exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) during the scale development process. A study group of 379 participants was used in the EFA for the ınventory and its' three scales. In the CFA process, study groups consisting of 229 participants were used for the Orientation Scale for Prescriptive Curriculum Theories (OSPCT), 212 for the Orientation Scale for the Descriptive Curriculum Theories (OSDCT), and 219 participants for the Orientation Scale for the Critical-Explanatory Curriculum Theories (OSCECT).

Item Writing Process of IOCT

When the literature is examined, the source of the items to be included in a measurement tool; literature review, specialist opinion or judge decisions. In this section, after the literature review, the systematic developed for the item writing of the measurement tool is explained. The steps followed in the item pooling process of the scales in the inventory are as follows:

Marsh and Willis (2003), the first group is called prescriptive, the second group is descriptive, and the third group is critical- explanatory. In this context, the works of prescriptive, descriptive and critical-explanatory theorists were examined. Separate item pools were created for each group by utilizing the works of theorists with different approaches and views.

Table 2. Exemplary Curriculum Theories and Some Curriculum Theorists

Prescriptive	Descriptive	Critical - Exploratory
Social need - child centered	Schwab (1969)	Social and cultural control
Dewey (1900,1902)	Walker (1971)	Young (1971), Bernstein (1973)
Kilpatrick (1918)	Westbury (1972)	Autobiographical/Biographical
Rugg (1927)	Connelly (1978)	Pinar (1972, 1974), Pinar and Grumet (1976)
Social need - reconstructionism	Reid (1978)	Connelly / Clandinin (1988), Miller (1992)
	Roby (1983)	Goodson (1981), Butt (1983),
Hughes (1972)	Gough (1984)	Maeth Lang (1999)
Skillbeck (1976)	Smith (1984)	Phenomenological
	Tripp (1984)	Willis (1979), Van Manen (1980, 2000)

Source: (Marsh and Willis, 2003)

During the writing process of the items in the inventory, all the documents obtained after the literature review were translated into Word. Transforming the documents into Word in the analysis program enabled the sentences to be perceived holistically. In this context, the sources obtained through the literature review were examined by making content analysis (cluster analysis). The analysis process was carried out in two stages.

In the first stage of the analysis, the studies of curriculum theorists were divided into 3 separate document files (prescriptive, descriptive and critical-explanatory) in the context of Marsh and Willis' (2003) classification. Then, these files were loaded into the analysis program as 3 different document files. Cluster analysis was performed on these document files separately. As a result of this analysis, dendongrams (clustering charts) of 3 separate document files were obtained. At this stage, words with more than 5% frequency were included in the clustering analysis.

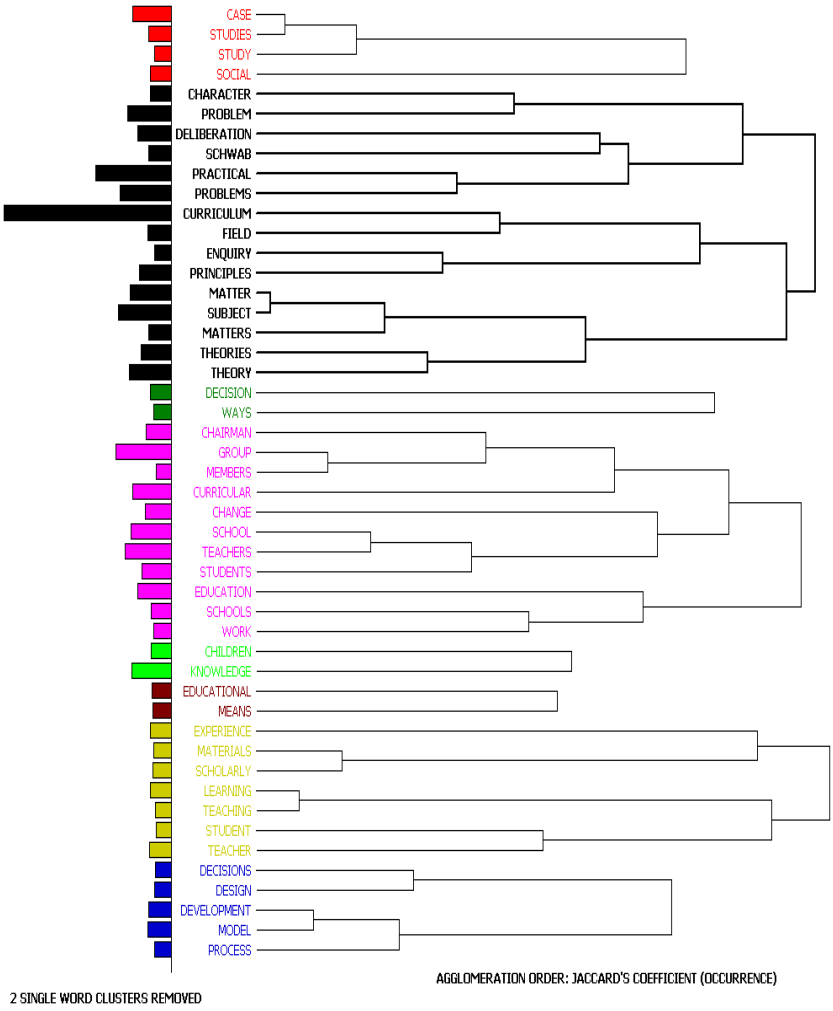

Figure 1. A Sample Clustering Chart for the Group Study File

After the clustered concepts were compared, the second stage of the analysis was started in order to determine in which contexts the words came together. At this stage, each cluster was studied separately. The words in each clustering chart were called from the documents in various combinations. At this stage, “sentence” was used as the unit of analysis. In other words, the sentences in which the words determined as a result of cluster analysis are used together were called from the documents. These sentences obtained from the documents were examined and the items related to the inventory were obtained.

For example, the words of the first set in figure 1; It is “Case, Study , Studies and Social”

Sentences containing at least two of these determined concepts as a binary combination of four were called from the program. In other words, all sentences containing two of these four concepts were taken as document output. In summary, sentences within the algorithms determined from the articles written by descriptive theorists loaded into the QDA Miner program were output. These sentences then formed the item pool.

For example:

6 the good CASE STUDY would constitute vicarious experience for the planner

CASE; STUDY 6 DOCUMENT 29 2 11

A good case study provides training planners with vicarious experience.

In this process, the sentences that were not understood as a result of the analysis were re-examined with the help of language and field specialists, and the article writing process was completed.

After the article writing process was completed, the articles were presented to the faculty members in the Thesis Monitoring Committee (TMS). At this stage, help was received from the faculty members in the TMS for the clarity of the items and the absence of meaning shift. In line with the opinions received from the TMS, arrangements were made on the inventory items and the inventory was presented to the specialist opinion.

Validity and Reliability Studies of IOCT

Other factors affecting the validity of the measurement tool should also be considered. CVR is also used as an approximation for content or construct validity. The content validity rates are obtained by collecting the opinions of the specialists on the items. For the inventory, opinions were received from 9 specialists specialized in 3 measurement and evaluation, 3 field theory specialists, 2 program development and 1 Turkish education. In line with the opinions of 9 specialists, items with a CVR value of less than 0.75 were removed from the item pool by taking the opinions of the members of the Thesis Monitoring Committee. Likert type as 'I totally disagree', 'I do not agree', 'I agree moderately', 'I agree' and 'I totally agree’. As a result of the corrections made, the draft inventory was applied to the working groups and exploratory factor analysis was performed with the data obtained. In order to determine whether the inventory obtained as a result of the analyzes works in different samples, confirmatory factor analysis was performed and the scale was finalized. In order to determine the reliability of the inventory, the Cronbach Alpha internal consistency coefficient for each scale was calculated.

Findings and Results

In IOCT Findings Concerning the Psychometric Properties of the Included Scales

Psychometric properties of the Orientation Scales Regarding the Prescriptive, Descriptive and Critical-Explanatory Curriculum Theories in IOCT are given below.

Testing the Requirements of the IOCT Inventory for Factor Analysis of the Data Sets of OSPCT, OSDCT and OSCECT

Factor analysis was performed to reveal the construct validity of the inventory 's ***OSPCT***, ***OSDCT*** and OSCECT. Since exploratory factor analysis is a parametric test, it is necessary to reveal whether the requirements are met. In this context, it has been examined whether the data meet the requirements of normality, multivariate normality, linearity , extreme value and multicollinearity .

The descriptive statistics of the study group and; Skewness= -.687 and kurtosis= .997 values for OSPCT and Skewness = -.171, kurtosis = . 519 values for OSDCT and skewness= -.135, kurtosis= .179 values for OSCECT show that normality is achieved.

In order to determine the extreme values, the total scores were converted into standardized z scores. Data exceeding the values of - 4 and +4 were accepted as extreme values. Mahalanobis distances were tested by using regression in order to determine the versatile extreme values, which is another study . Among the resulting values, the critical chi-square value for OSPCT (P<.001; χ^2 86.66); Outliers for OSDCT (P<.001; χ^2 7 3.402) and for OSCECT (P<.001; χ^2 86.66) were deleted.

It has also been examined whether there is a multicollinearity problem in the data pattern. In this context, variance increase factors (VIF), tolerance values for independent variables, state condition index (CI) were examined. For OSPCT the values of the variance increase factors (VIF) were 1.36 and 1.21; for OSDCT Values of VIF are 1.065, 1.141, 1.049 and 1.116; It can be said that there is no multicollinearity problem in all three subscales, since OSCECT is 1.062, 1.138, 1.048 and 1.111, that is, VIF<10. Tolerance values for independent variables are .885 and .948 for OSPCT; .939, .876, .954, and .896 for OSDCT and .879, .942, and .954 for OSCECT. The fact that these values are greater than .10 can be said to indicate that there is no multicollinearity problem. State condition indices (CI) for OSPCT 5.24 and 18.36; It was determined that they were between 5.26 and 15.93 for OSDCT and between 5.25 and 15.98 for OSCECT. The fact that these values are less than 30 can be said to be another sign that there is no multicollinearity problem.

Multivariate normality and linearity , the matrix formed from the scatter diagram was examined. It has been revealed that the shapes of the diagrams in the matrix are close to ellipse. In this context, it was seen that the multivariate normality and linearity assumptions were also met. On

the other hand, linear, logarithmic, inverse, quadratic and cubic values of variable distributions were examined. The high linearity score among these values can be seen as another proof.

For factor analysis, first of all, the KMO value, which allows testing the suitability of the data set for analysis, was examined and .919 for OSPCT; It was found .892 for OSDCT and .758 for OSCECT. In order for the data set to be suitable for factor analysis, this value should be at least above .50 (Büyüköztürk, 2003; Özdamar, 2013). The result of the Bartlett Test, which also serves the same purpose, for OSPCT is .919 [χ^2 = 8017.126; p<0.01]; For OSDCT, [χ^2 = 4060,945; p<0.01] and for OSCECT [χ^2 = 3480.817 ; p<0.01] was found. These values show that factor analysis can be performed on the specified data sets .

Factor Analysis Results of Inventory Related to OSPCT

As a result of the exploratory factor analysis performed to improve OSPCT, the numbered 1, 2, 5, 8, 9, 10, 11, 24, 25, 26, 27, 28, 29, 30, 31, 34, 35, 38, 41 and 47 It was determined that the items did not show sufficient factor loading (those with a factor load below .400). Therefore, it was decided to exclude these items from the scale. It is seen that the factor load values of the remaining items vary between .471 and .794. It was determined that the item-total correlations ranged between .502 and .772. The remaining items were included under a single factor. After these processes, it was seen that there were 27 items in the scale. The variance explained by the items under a single factor is 46,053%. Since the scale was considered as one-dimensional, the Cronbach - Alpha internal consistency coefficient was found to be .954. Item factor load values and item total correlations are given in Table 3, and the anti- image correlation values of the items are given in Table 4.

Table 3. Factor Analysis of OSPCT Primary Factor Load Values and Item Total Correlation Results

Item No.	First Factor Load Value	Item-Total Correlation	Item No.	First Factor Load Value	Item-Total Correlation
M3	.610	.585	M22	.559	.598
M4	.602	.580	M23	.564	.502
M6	.743	.722	M32	.759	.739
M7	.620	.600	M33	.693	.660
M12	.720	.699	M36	.719	.669
M13	.794	.772	M37	.700	.647
M14	.771	.750	M39	.715	.613
M15	.747	.733	M40	.648	.684
M16	.627	.608	M42	.683	.633
M17	.687	.661	M43	.734	.711
M18	.792	.768	M44	.471	.549
M19	.731	.687	M45	.665	.611
M20	.658	.603	M46	.580	.571
M21	.612	.559			
Variance Explained by Factor = 46.053%					
Cronbach Alpha = .954					

Table 3 was examined, it was determined that as a result of the exploratory factor analysis, the primary factor loads of the remaining items in the scale did not fall below .471 and the item-total correlations did not fall below .502. In the Cronbach Alpha reliability review, " Cronbach's Alpha If item It was determined that if any item was removed from the scale in the " Deleted " section, the Cronbach Alpha reliability coefficient fell below .954. In this case, it can be said that the contribution of all items to reliability is high (Özdamar, 2013).

Table 4. Anti– image Correlation Values of OSPCT's Substances

Item No.	Anti–Image Correlation Values	Item No.	Anti–Image Correlation Values
M3	.897	M22	.883
M4	.889	M23	.892
M6	.932	M32	.930
M7	.952	M33	.922
M12	.913	M36	.938
M13	.960	M37	.925
M14	.907	M39	.932
M15	.902	M40	.897
M16	.916	M42	.925
M17	.923	M43	.935
M18	.929	M44	.912
M19	.950	M45	.929
M20	.892	M46	.892
M21	.898		

Table 4 was examined, it was determined that the anti- image correlation values of the items ranged between .883 and .960. It is seen that the anti- image values of the items in the scale do not fall below .50. According to Özdamar (2013), this situation shows that the contribution of the load values of the items to the factor structure is high.

Scree obtained as a result of exploratory factor analysis and given in Figure 3. The plot also gives the impression that the scale has a single factor.

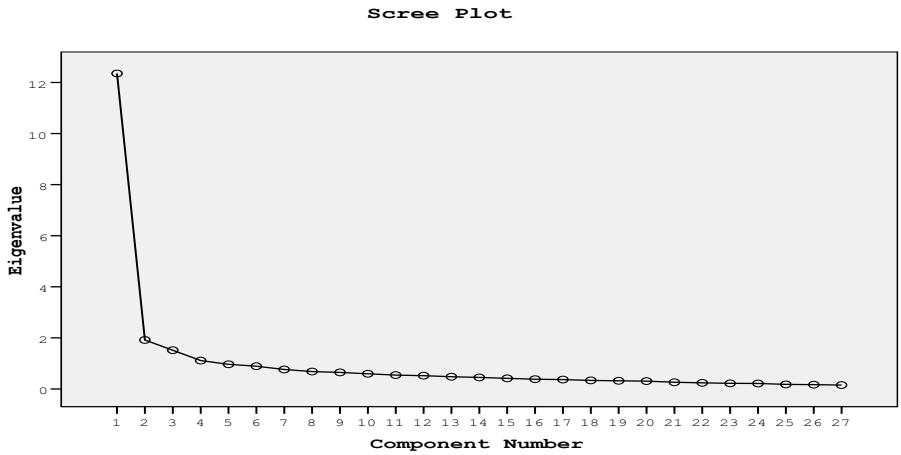

Figure 2. Scree of OSPCT Plot Chart

In Figure 2, it is seen that a flattening started in the graph after the first factor and this continues. This shows that there is no new factor after the flattening point of the graph (Büyüköztürk, 2003). Accordingly, the graph gives the idea that the scale can consist of a single factor.

Factor Analysis Results of the Inventory Related to OSDCT

6 , 7, 8, 9, 11, 12, 13, 14, 15, 16, 20, 21, 26, 27, 28, 29, 30, 31, 32 and 38 items did not show sufficient factor loading (those with a factor load below .400) and showed a high correlation in more than one factor. Therefore, it was decided to remove these items from the scale. It is seen that the factor load values of the remaining items vary between .442 and .743. The item-total correlations ranged from .451 to .683. The remaining items were grouped under a single factor. The variance explained by the items under a single factor is 43.26%. When the scale was considered as one-dimensional, the Cronbach - Alpha internal consistency coefficient was found to be .907. Item factor load values and item total correlations are given in Table 5, and the anti- image correlation values of the items are given in Table 6.

Table 5. OSDCT Factor Analysis Primary Factor Load Values and Item Total Correlation Results

Item No.	First Factor Load Value	Item-Total Correlation	Item No.	First Factor Load Value	Item-Total Correlation
M1	.727	.660	M10	.640	.574
M2	.694	.622	M11	.614	.544
M3	.714	.664	M12	.697	.633
M4	.692	.639	M13	.699	.632
M5	.743	.683	M14	.730	.669
M6	.640	.664	M15	.452	.486
M7	.724	.600	M16	.476	.452
M8	.721	.669	M17	.442	.451
M9	.697	.635	M18	.633	.614

Variance Explained by Factor = 43.26%
Cronbach Alpha = .907

When Table 5 was examined, it was determined that the primary factor loads of the remaining items in the scale did not fall below .442 and the item-total correlations did not fall below .451 as a result of the exploratory factor analysis. In the Cronbach Alpha reliability analysis, it was determined that if any item was removed from the scale, the Cronbach Alpha reliability coefficient fell below .907. In this context, it can be said that all items have a high contribution to reliability (Özdamar, 2013).

Table 6. To OSDCT Anti– image Correlation Values of Substances

Item No.	Anti–Image Correlation	Item No.	Anti–Image Correlation
M1	.879	M22	.946
M2	.840	M23	.898
M3	.915	M24	.849
M4	.905	M25	.873
M5	.873	M33	.908
M10	.954	M34	.936
M17	.814	M35	.910
M18	.774	M36	.946
M19	.919	M37	.944

Table 6 was examined, it was determined that the anti- image correlation values of the items varied between .774 and .954. These results show that the contribution of the load values of the items to the factor structure is high.

Scree obtained as a result of exploratory factor analysis and given in Figure 3 The plot plot gives the impression that the scale is one factor.

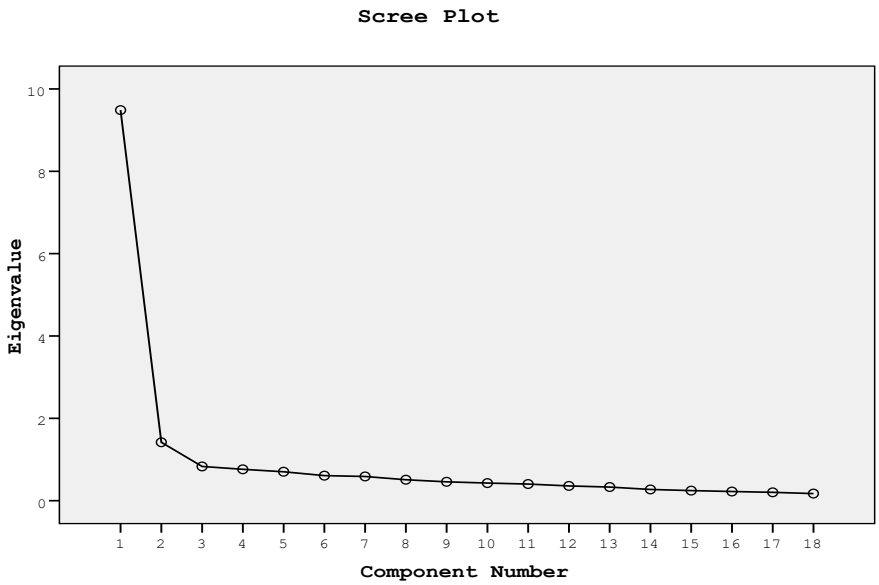

Figure 3. Scree of OSDCT Plot Chart

In Figure 3, it is seen that a flattening started in the graph after the first factor and this continues. This shows that there is no new factor after the flattening point of the graph (Büyüköztürk, 2003). Accordingly, the graph gives the idea that the scale may consist of a factor.

Factor Analysis Results of the Inventory Related to OSCECT

OSCECT as a result of the exploratory factor analysis using the factor analysis method, 1, 2, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 20, 23, 24, 26, 27, 28, 30, 32 It was determined that items numbered 33, 34, 35, 36, 37, 39, 40, 43, 47, 48, 50 and 51 showed high correlation in multiple factors. Therefore, it was decided to exclude these items from the scale. It is seen that the factor load values of

the remaining items vary between .434 and .657. The item-total correlations ranged between .346 and .666. The remaining items were placed under three factors. The variance explained by the items under three factors was 63.19%. When the scale was considered as one-dimensional, the Cronbach - Alpha internal consistency coefficient was found to be .919. Thus, the total score for the scale was obtained. Item factor load values and item total correlations are given in Table 7, and the anti- image correlation values of the items are given in Table 8.

Table 7. OSCECT Factor Analysis Primary Factor Load Values and Item Total Correlation Results

Item No.	First Factor Load Value	Item-Total Correlation	Item No.	First Factor Load Value	Item-Total Correlation
M3	.571	.618	M31	.549	.573
M4	.622	.599	M38	.435	.485
M5	.542	.550	M41	.628	.537
M6	.607	.621	M42	.613	.666
M11	.438	.346	M44	.503	.590
M19	.434	.472	M45	.541	.481
M21	.551	.490	M46	.519	.586
M22	.541	.635	M49	.555	.610
M25	.599	.597	M52	.657	.524
M29	.493	.434			
Variance Explained by Three Factors = 63.139 %					
Cronbach Alpha = .919					

When Table 7 was examined, it was determined that as a result of the exploratory factor analysis, the primary factor loads of the remaining items in the scale did not fall below .434 and the item-total correlations did not fall below .346. The Cronbach Alpha reliability coefficient was determined to be .919 . In this case, it can be said that the contribution of the items to reliability is high (Özdamar, 2013).

Table 8. Anti-image Correlation Values of Substances Belonging to OSCECT

Item No.	Anti–Image Correlation	Item No.	Anti–Image Correlation
M3	.723	M31	.857
M4	.694	M38	.844
M5	.763	M41	.889
M6	.777	M42	.866
M11	.806	M44	.846
M19	.760	M45	.827
M21	.730	M46	.810
M22	.749	M49	.880
M25	.752	M52	.890
M29	.739		

Table 8 was examined, it was determined that the anti- image correlation values of the items varied between 0.694 and 0.890". This result shows that the contribution of the load values of the items to the factor structure is high. Scree obtained as a result of exploratory factor analysis and given in Figure 4 The plot plot gives the impression that the scale has three factors.

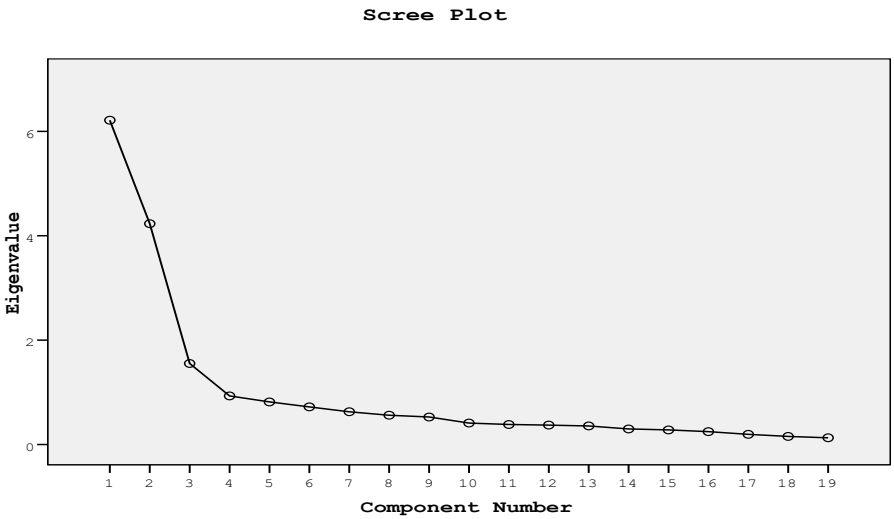

Figure 4. Scree Displaying the Number of Factors of OSCECT Plot Chart

In the figure, after the third factor, the graph shows that a flattening has started and continues. Accordingly, the graph gives the idea that the scale may consist of three factors. In exploratory factor analysis, " Varimax " rotation method was applied to the data set in order to show whether there are sub-dimensions in the scale and if there are sub-dimensions, which items are gathered under which sub-dimensions (Büyüköztürk, 2003; Özdamar, 2013). The applied " Varimax " rotation results are shown in table 9.

Table 9. Factors Obtained as a result of Varimax Rotation of OSCECT

	Factors			
	1	2	3	Cronbach Alpha Value
M44	.788			
M42	.758			
M46	.740			
M49	.738			.923
M41	.724			
M38	.717			
M45	.702			
M52	.682			
M11	.577			
M8	.471			
M29		.804		
M21		.772		.829
M25		.765		
M31		.763		
M22		.710		
M6			.775	
M4			.771	.845
M3			.708	
M5			.696	

When Table 9 is examined ;

- Items 8, 11, 38, 41, 42, 44, 45, 46, 49 and 52 constitute a sub-dimension (first sub-dimension),

- Items 21, 22, 25, 29 and 31 constitute a sub-dimension (second sub-dimension),
- It was determined that items 3, 4, 5 and 6 constitute a sub-dimension (third sub-dimension).

The reliability coefficients of the sub-dimensions are respectively; .923, .829 and .845 were found.

The inventory was finalized as a result of the exploratory factor and reliability analysis performed on the OSCECT. According to this;

- Items 8, 11, 38, 41,42,44, 45, 46, 49 and 52 have been renumbered ***items 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10*** . The sub-dimension formed by these items is " **Making sense of the socio - political content of education in the individual** ",
- Items 21, 22, 25, 29 and 31 have been renumbered as ***items 11, 12, 13, 14*** and ***15 .*** The sub-dimension created by these items is "**Developing resistance to deterministic curriculums and practices .** ",
- Items 3, 4, 5 and 19 have been renumbered ***items 16, 17, 18 and 19 .*** The sub-dimension formed by these items was named as the sub-dimension of " **Awareness about the functions of producing/reproducing the society ".** It was determined that the items in the third dimension of the scale should be reverse coded.

IOCT Inventory to OSPCT, OSDCT and OSCECT Testing the Requirements for Confirmatory Factor Analysis of the Data Sets of

OSPCT, which is the first scale of the inventory, confirmatory factor analysis was performed to determine whether the resulting structure was confirmed or not. Since confirmatory factor analysis is a parametric test, it is necessary to reveal whether the requirements are met. In this context, it was examined whether the requirements of normality, multivariate normality, linearity , extreme value and multicollinearity were met.

Descriptive statistics of the study group were examined, skewness = .294 and kurtosis = -.841 for OSPCT; the values of skewness = .281, kurtosis = -.573 for OSDCT, and skewness = -.198, kurtosis = .072 for OSCECT indicate that normality is achieved.

In order to determine the extreme values, the total scores were converted into standardized z scores. Data exceeding -4 and +4 values were accepted as extreme values. Another study is to determine multidirectional extreme values. Mahalanobis distances were tested using Regression to determine multi-directional extreme values . The resulting critical chi-square value for OSPCT

(P<.001; χ^2 55,476); Exceeding extreme values for OSDCT (P<.001; χ^2 42.312) and OSCECT (P<.001; χ^2 8 6.661) were deleted.

It has also been examined whether there is a multicollinearity problem in the data pattern. In this context, variance increase factors (VIF), tolerance values for independent variables, state condition index (CI) were examined. VIF values for OSPCT are 1.006 and 1.116; for OSDCT It can be said that there is no multicollinearity problem since these values are between 1.647 and 1.336 and between 1.029 and 1.152 for OSCECT and VIF < 10 . Tolerance values for independent variables are .939 and .994 for OSPCT; for OSDCT .607 and . 749 and for OSCECT .868 and .972 . The fact that these values are greater than .10 can be said to indicate that there is no multicollinearity problem. for CI's OSPCT 4,742 and 7,715 ; 15,905 and 27,452 for OSDCT and 5.863 and 26.219 for OSCECT between them was determined. The fact that these values are less than 30 can be shown as another sign that there is no multicollinearity problem.

Multivariate normality and linearity, the matrices formed from the scatter diagram were examined. It has been revealed that the shapes of the diagrams in the matrix are close to ellipse . On the other hand, linear, logarithmic, inverse, quadratic and cubic values of variable distributions were examined. High linearity scores among these values can be seen as another proof. These values show that confirmatory factor analysis can be performed on data sets.

Results of Confirmatory Factor Analysis for OSPCT, OSDCT and OSCECT

Confirmatory factor analysis was performed by applying the developed scale to different samples. Figures 5, 6 and 7 show the models resulting from Confirmatory Factor Analysis.

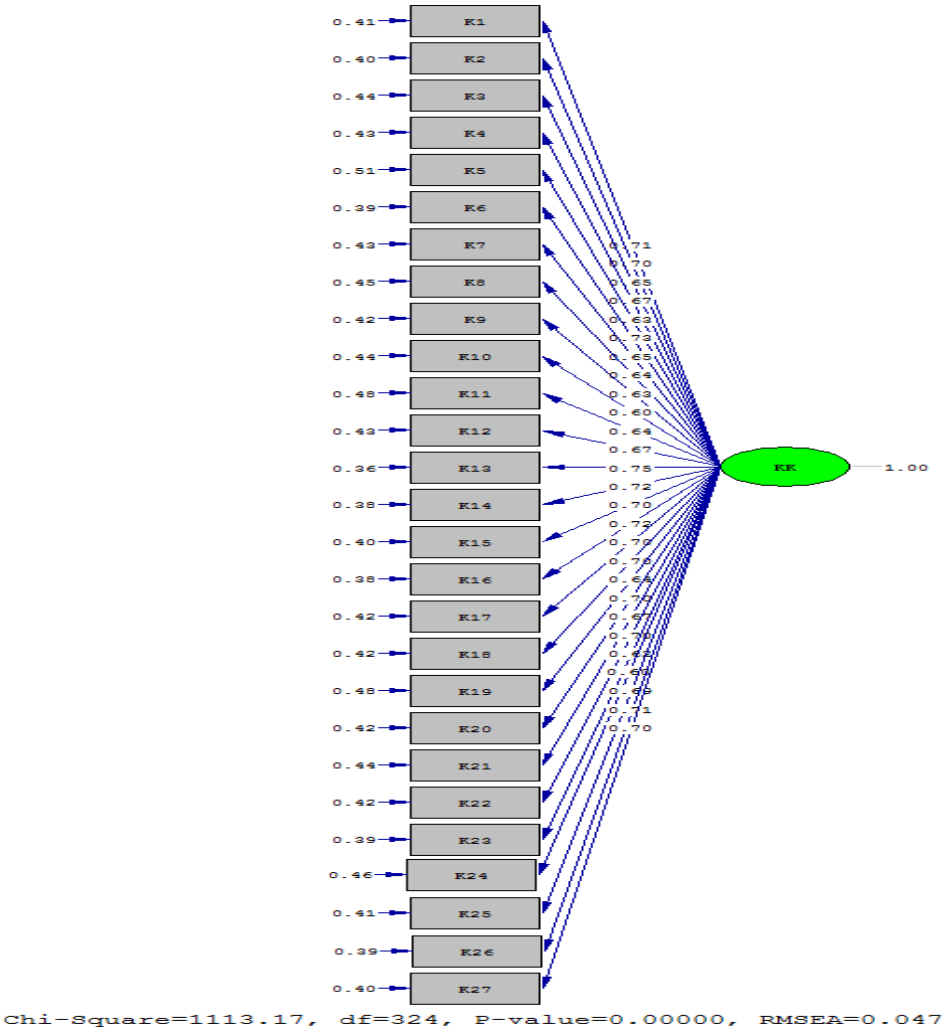

Figure 5. Confirmatory Factor Analysis Model of OSPCT (Standardized Values)

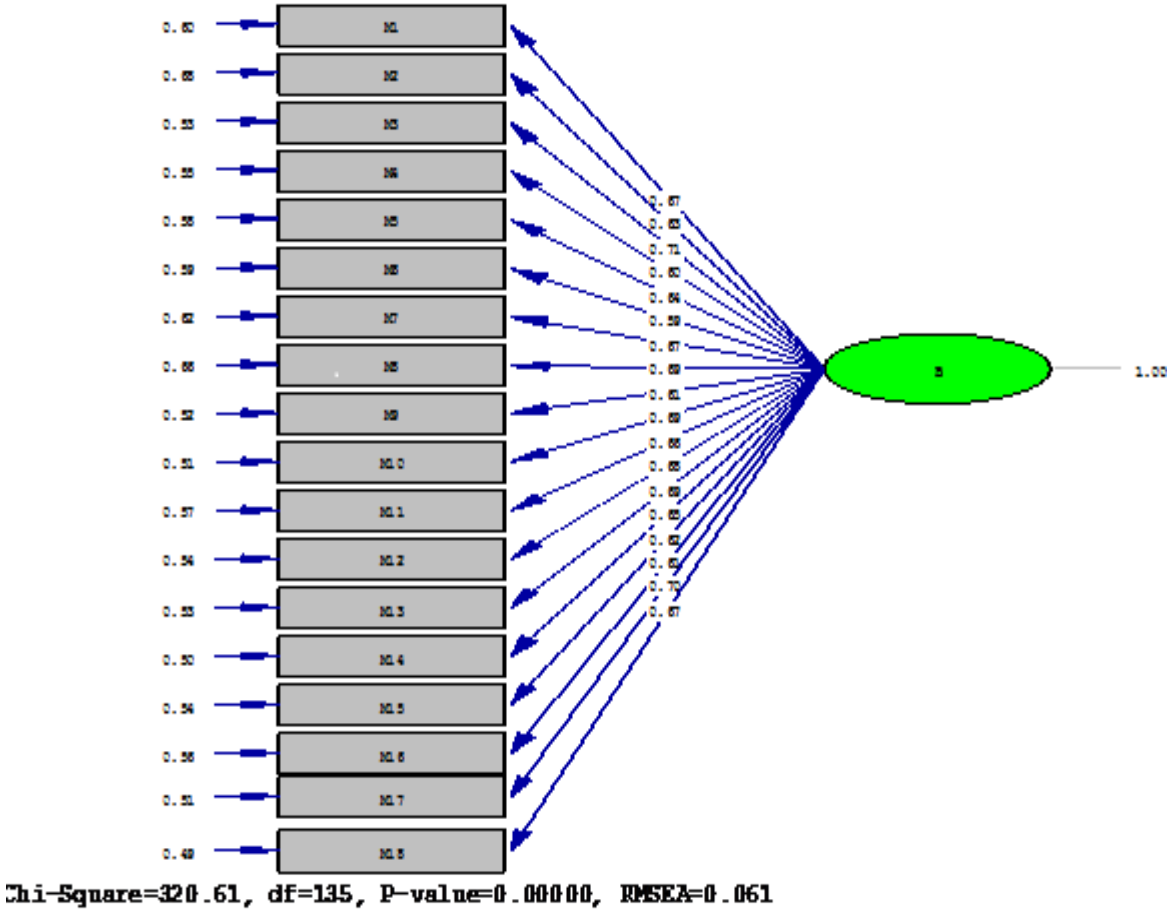

Figure 6. Confirmatory Factor Analysis Model of OSDCT (Standardized Values)

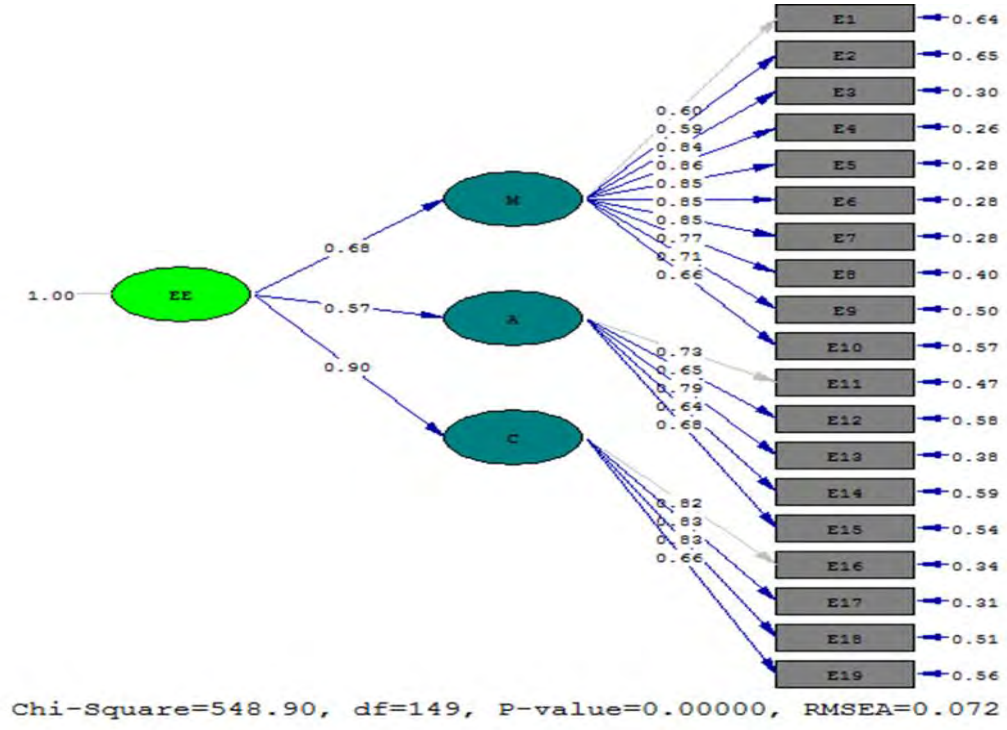

Figure 7. Confirmatory Factor Analysis Model for OSCECT *(Standardized Values)*

Figure 5 is examined, it is seen that the Chi-square and degrees of freedom values obtained as a result of CFA for OSPCT are χ2 111 3.17, (sd 3 24, p<.01) and the ratio is χ2/ sd 3.44. When Figure 6 is examined, it is seen that the Chi-square and degrees of freedom values obtained as a result of CFA for OSDCT are χ2 320.61, (sd 135, p<.01) and the ratio of χ2/ sd 2.3 7 is obtained. When Figure 7 is examined, it is seen that the Chi-square and degrees of freedom values obtained as a result of CFA for OSCECT are χ2 548.90, (df 149 , p<.01) and the ratio is χ2/ sd 3.6 8.

The fact that these ratios are below 4 indicates an acceptable fit (Jöreskog and Sörbom , 1993; Sümer, 2000; Kline , 2005). In addition, it was determined that the t values of all items were significant and the model was acceptable. In this study, it can be said that the fit between the model obtained as a result of CFA and the data is acceptable.

The fit values obtained as a result of CFA are summarized in Table 10.

Table 10. Fit Values Obtained as a result of CFA

	χ^2	h_d	χ^2/h_d	RMSEA	AGFI	SRMR	RMR	NNFI	CFI	NFI	IFI
OSPCT	113.17	324	3.44	.047	.89	.064	.079	.95	.90	.91	.95
OSDCT	320.61	135	2.37	.061	.93	.056	.064	.94	.92	.93	.95
OSCECT	548.90	149	3.68	.072	.84	.071	.087	.92	.94	.95	.94

It can be said that one of the most commonly used indices of lack of fit in CFA is RMSEA . The fact that the RMSEA index is .05 and less than this value is an indicator of model-data fit; however, it is stated that this value can be accepted up to .08 (Browne and Cudeck , 1993; Hu and Bentler, 1999; Şimşek, 2007; Vieira , 2011). The RMSEA value in this study was .047 for OSPCT; The values of .061 for OSDCT and .072 for OSCECT can be accepted as an indicator of fit for these models.

DFA , the AGFI value is higher than 0.80, the RMR value is less than “0.10” (Anderson and Gerbing , 1984; Marsh , Balla and McDonald, 1988), and the SRMR value is lower than “0.08” (Şimşek, 2007). can be said to be acceptable. As a result of CFA, the concordance values were AGFI=0.89, RMR=0.079 and SRMR= 0.064 for OSPCT; AGFI =.93, RMR=.92, and SRMR= .56 for BEEPTIÖ, and AGFI .84, RMR .087, and SRMR .071 for E-AEPTIÖ. According to these results, it can be said that the data fit of the models is acceptable.

DFA indicates that model data fit corresponds to “perfect fit” (Bentler, 1990; Sümer, 2000; Şimşek, 2007; Çokluk, Güçlü, & Büyüköztürk, 2008). As a result of the analysis, NNFI .95, CFI .90 and NFI= .91 and IFI= .95 for OSPCT; NNFI =.94, CFI=.92, and N FI=.93 and IFI= .95 for OSDCT, and NNFI=.92, CFI=.94, and NFI=.95 and IFI= .94 for E- OSCECT. According to these results, it can be said that the data fit of the models is good.

CFA is to show the level of fit of a defined model with the data obtained (Sümbüloğlu & Akdağ, 2009). In this context, it can be said that the one-dimensional structure of OSPCT and OSDCT and the three-dimensional structure of OSCECT were confirmed according to the fit statistics obtained from confirmatory factor analysis.

Conclusion and Discussion

In this study, a measurement tool was developed to determine teachers' orientations regarding curriculum theories. In this context, a new culture-specific measurement tool has been developed that aims to determine the interaction between scientists, specialists and teachers in the field, in other words, theorists and practitioners. The IOCT inventory consists of three scales: OSPCT, OSDCT and OSCECT. OSPCT consists of 27 items, OSDCT consists of 18 items and OSCECT consists of 19 items. The highest score that can be obtained from OSPCT is 135 and the lowest 27; The highest score that can be obtained from OSDCT is 90 and the lowest is 18; the highest score that can be obtained from OSCECT is 95 and the lowest is 19. All three scales are evaluated within themselves. Thus, it can be determined to what extent a teacher has a prescriptive, descriptive or critical-explanatory curriculum orientation.

In this study, the reason for using the classification made by Marsh and Willis (2003) for curriculum specialists/theoreticians is This classification is thought to have a stronger distinction. Another reason for this situation is that each scale in the inventory has different philosophical, educational philosophy and theoretical origins. In the later stages of the thesis study, which was carried out using this inventory, interviews were held with some teachers selected according to the scores they got from the scales and their teaching processes were observed. It has been observed that teachers who have a normative, descriptive and critical-explanatory curriculum orientation behave in the classroom and in the process of curriculum implementation in the context of the characteristics included in the literature and scale (Türe, 2017). This result was another indicator of validity and reliability for the scales in the inventory. In addition, in the studies conducted in the field of education in Turkey, it is seen that the samples generally focus on teacher candidates studying at education faculties. For this reason, it has been considered important to develop a measurement tool that determines teachers' orientations towards curriculums in Turkey.

Considering that the applied curriculums are affected by the theoretical orientations of the teachers, concrete reflections of the theoretical orientations that are accepted as abstract can be revealed in the education process. In addition, it is stated that theoretical awareness is important for effective curriculum implementation in schools (Ornstein & Hunkins, 1998), and curriculum studies are expected to help teachers develop their own theories and educational philosophies (Henson, 1995). Posner (1992) stated that there are five types of curriculums: formal, implemented, implicit,

neglected, and extra. It is stated that there are differences between the official curriculum and the applied curriculum and the teacher has an important role in these differences (Öztürk, 2012). For this reason, revealing the relations between the theoretical orientations of the teachers and their practices will also help to reveal the relations between the official curriculum and the applied curriculum.

Qualitative cluster analysis was used in the item writing process of the inventory of Orientation in Curriculum Theories (OICT). Thus, a systematic was developed for the article writing process, which was carried out depending on the literature review carried out during the article writing process. It is thought that this study can contribute to the literature with the innovation it brings to transform the article writing process into an observable process.

Policy Implications

An important subject of education policies and practices is teachers. Teachers are the most important subject reflecting education policies to classrooms. Curriculums are developed in the context of the basic philosophy, objectives and decisions of educational policies ; (Wahlström & Sundberg, 2018). In this context, curriculum is a concept that includes both educational-instructional and educational policies for teachers. The teacher's approach to the curriculum determines the extent to which the curriculum is reflected in the teaching processes (Ertok & Ummanel, 2021; Kuloglu & Tutus, 2022). This seems to be important in the context of the reflection of education policies on teaching processes. One of the important variables that determine the teacher's approach to the curriculum is the teacher's orientation towards curriculum theories. For this reason, the orientation of teachers' curriculum theory is important in the context of the reflection of education policies on the education process. For this reason, a measurement tool has been developed to determine the orientation of teachers' curriculum theories. In this context, a discussion area can be created in the context of the educational policies adopted by teachers and their orientations to curriculum theories. In summary, it can be said that education policies have a multiple interaction with the focus of this study in terms of both being the main component of the curriculum and determining the orientation of teachers' curriculum theories.

Conflict of interest

No potential conflict of interest was declared by the authors.

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Credit Author Statement

Author 1 : Conceptualization and Methodology, Investigation, Formal Analysis, Original draft preparation. Author 2 : Supervision, Methodology, Reviewing and Editing.

Ethical Statement

This study is a doctoral thesis made at the Institute of Educational Sciences of Ankara University and all processes have been ethically examined and the research permits number obtained by the Ministry of Education Ankara Directorate of National Education: 14588481-605.99-E.4268379 on 15.04.2016

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EĞİTİM PROGRAMI TEORİLERİNE İLİŞKİN YÖNELİMLER ENVANTERİ (EPTYE) (Örnek Maddeler)

Kuralcı Eğitim Programı Teorilerine İlişkin Yönelim Ölçeği (Örnek Maddeler)

Maddeler	Hiç Katılmıyorum	Katılmıyorum	Orta Düz.	Katılıyorum	Tamamen
1. Eğitim programları öğrencilerin toplumsal kurumlarla yaşamayı öğrenmelerini sağlamalıdır.					
2. Eğitim programları toplumun etik ve ahlaki standartlarını dikkate almalıdır.					
3. Eğitim programları öğrencilerin toplumsal kurallara uymasını sağlayacak tutumları değerleri ve davranışları geliştirmelidir.					
4. Eğitim programları topluma uyum sağlayabilmesi amacıyla insan doğasını biçimlendirmelidir.					
5. Eğitim programları iyi vatandaşlar yetiştirmeyi amaçlamalıdır.					

Betimleyici Eğitim Programı Teorilerine İlişkin Yönelim Ölçeği (Örnek Maddeler)

Maddeler	Hiç Katılmıyorum	Katılmıyorum	Orta Düz.	Katılıyorum	Tamamen
1. Eğitim öğretim sürecinde gerçekleşen durumların doğasını anlamak önemlidir.					
2. Eğitim öğretim sürecinde gerçekleşen durumlarının doğasını gözlemleyerek anlama çabası eğitim programlarını ortaya çıkarmaktadır.					
3. Eğitim-öğretim uygulamalarının iyi betimlendiği çalışmaları inceleyen benzer ortama sahip öğretmenler. kendi uygulamaları için çıkarımlar yapabilir.					
4. Öğretmenler, eğitim-öğretim sürecini iyi betimleyen çalışmaları inceleyerek kendi sınıfları için birer yol haritası hazırlayabilir.					
5. Eğitim programları öğretmenler için seçeneklerin bulunduğu bir yol haritasıdır.					

Eleştirel-Açımlayıcı Eğitim Programı Teorilerine İlişkin Yönelim Ölçeği (Örnek Maddeler)

Maddeler	Hiç Katılmıyorum	Katılmıyorum	Orta Düz.	Katılıyorum	Tamamen
Eğitimin sosyo-politik içeriğinin bireydeki karşılıklarını anlamlandırma					
1. Eğitim programları, öğretmen ve öğrencilerin yaşadıkları dünyayı anlamlandırmalarına olanak sağlamalıdır.					
2. Öğretmen ve öğrenciler birbirlerinin yaratıcılıklarını geliştirme çabası içinde olmalıdır.					
3. Öğretmen ve öğrenciler; birbirlerinin deneyimlerini bilinçli yorumlamalar yaparak anlamlandırabilir.					
4. Öğretmen ve öğrenciler; kendi davranışlarının değerlerinin ve kişiliklerinin farkında olmalıdır.					
5. Öğretmen ve öğrenciler mantıklı içsel yorumlama yapmayı geliştirmelidir.					