Tendencies of the Researches Published in Education and Science Journal: Content Analysis

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Abstract

The aim of this study is to perform a content analysis of the articles published in TED Education and Science Journal and in this way to define the trends of the articles published in the journal. In the study, a total of 492 articles selected by purposive sampling method were analyzed. For the selection of articles, it was considered that the articles were of the articles published in issues between 2007 and 2013 when the issue of the journal was scanned by SSCI. "Publishing Classification Form" was used for the analysis of the articles determined within this scope. By making content analysis, articles were analyzed to include the aspects such as defining information about the identity of the article, its field, its subject, method, data collection tools, sampling, data analysis methods, and discussions and recommendations. The obtained data was interpreted in a manner based on the percentage and frequency and they were also represented with tables and graphics. Based on the obtained data it was found out that more publications are made by scientists working in larger and great universities like Hacettepe, Ankara and Gazi University. Furthermore, it was identified that most of the publications are on fields such as educational programs and teaching, educational administration, mathematics and science education. In the study where publications based on quantitative and descriptive survey researches were identified as the most common publication type, it was found that attitude, perception, and personality tests were used as data collection tool. It was seen that the studies concentrated in the sampling range of 301-1000 persons at the undergraduate level. For the analysis of data it was found that descriptive analysis were made more commonly and Anova and T-test analysis were also used in the studies intensively. Publication trend of TED Education and Science Journal, and its framework to contribute scientific studies will be developed by following history, profile and trends of the publication based on the present analysis.

Keywords: Education & Science, research, content analysis, method

Introduction

Educational researches are known to be the processes which include research processes about the field of education, in which data obtained through different methods are systematically recorded, analyzed and published (Mortimore, 2000). These researches on the issue of education, which has a significant role in forming theoretical bases to the system of education, creating policies and developing practices, has been rapidly increasing in the last few years in academic world. While some of these researches form the basis of education reforms, some of them test the reliability of valuable research results through revising the related literature and some of them shed light to new researches

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through new findings. It can be said that these researches on educational field increase the quality and function of the system of education and make significant contributions to educational field and researchers (Karadağ, 2009; Göktaş et al, 2012). Martimore (1999), who has significant studies in this context, states that, educational researches have four functions. The first function of these researches is to conceptualize, observe and systematize the events and processes about education in order to be used learning processes. The second function is to analyze these observations in their conditions, contexts, results and contents in order to explain them. The third function is to publish all of the data on a specific issue that is analyzed and to present viewpoints about a present theory that will make contributions to educational sciences or about other developing theories in the field. Finally, the fourth function is to make studies in order to improve education which is the most basic goal of all of the educational researchers.

It is necessary to analyze and organize educational researches and determine the tendencies in the field in order to ensure that the researches reach the functions and duties determined in the related literature; in this way, it will be possible to guide many scientists who make studies and researches on this issue (Cohen, Manion and Morrison, 2007). Many studies, independent from one another, have been carried out today on various topics in educational sciences. While the contributions of these studies to the field and researchers are quite significant, classification of studies and making evaluations according to the results and tendencies of them are other significant points. Sometimes, the number of studies in the field bring along some problems. While the results of some studies on the same issue are in line with one another, sometimes the results of studies on the same issue can be contradictory. People who make researches on an issue have difficulty in reaching all of the researches about that issue and spend a lot of time in order to reach related data (Göktaş et al., 2012). At this point, results of content and Meta analyses about studies in a specific field significantly ease the work of researchers. Such content and Meta analyses have been attracting the attention of many researchers in the last years. In some content and meta analyses studies in educational field (Kablan, Topan and Erkan, 2013; Göktaş et al., 2012; Kılıç-Çakmak et al., 2013; Tomakin and Yeşilyurt, 2013; Chang, Chang and Tseng, 2010; Gökçek et al., 2013) recent tendencies in the field have been determined and significant points have been defined for new studies. It is seen that some of these researches are about scientific field, some about research methods and some about educational researches. Some of these researches can be summarized as; Çalık, Ünal, Coştu and Karataş (2008) analyzed dissertations in the field of science education and attempted to understand science education in Turkey. For this aim, they analyzed a total of 444 master and doctorate dissertations in terms of some variables. At the end of the research, they found that experimental method are mostly used in science tendencies dissertations as research method in Turkey while elementary education students are mostly used as research groups. Çiltaş, Güler and Sözbilir (2012) examined published articles about the field of mathematics education with content analysis method. For this reason, a total of 359 researches chosen from the reachable resources between 1987 and 2009 were examined; 27 of these researches were in national index while 5 were in Web of Science SSCI index. At the end of the research, it was determined that there have been a dramatic increase in mathematics educational researches since 2002, quantitative researches have been preferred more, learning studies have been at the forefront as research topics, single data collection tool has been used in studies and percentage and frequency tables have been preferred more as data analysis methods. Göktaş et al. (2012) made a study in order to determine the tendencies in terms of data collection tools, data analysis methods and sample features used in the researches published in educational journals in Turkey between 2005-2009, which are in the databases of SSCI and ULAKBİM. In the study, 2115 articles were chosen with purposeful sampling method; content analysis was carried out on these articles by using ETPCF. According to the research findings, descriptive studies are preferred in terms of article type and the fields that have the biggest number of publishing are educational technologies, science education, psychological counseling and guidance and mathematics education. While quantitative research methods are the most commonly used research methods, survey, interest, attitude, personality tests are commonly used tools; it was also seen that descriptive data analysis is the most commonly used data analysis method. As sample

group, students and teachers at the level of undergraduate are preferred, groups include 31-100 and 100-300 people, easily accessible sampling technique is used the most in researches. In the research carried out by Gülbahar and Alper (2009), articles about educational technologies, published in Turkish Online Journal of Educational Technology (TOJET) journal between 2003- 2007 were analyzed. In this analysis, the process was carried out by taking the research methods of articles, topics, data collection methods and resources into consideration. At the end of the research, it was determined that quantitative research methods are preferred and university level of sample groups are used. In the qualitative research by Karadağ (2010), characteristic of research models used in doctorate dissertations in Turkey about educational sciences and analytic mistakes were attempted to be determined. Theoretical population of the research was doctorate dissertations in Turkey in the field of educational sciences. In the research, developments in the fields of actuality and methodology were taken into consideration and 324 doctorate dissertations about educational sciences between 2003 and 2007 were used. According to the findings of the research, quality level of research models used in these dissertations isn't sufficient. Şimşek et al. (2009), made an analysis on a total of 259 master dissertations on educational technology between 2000 and 2009, in 9 universities in Turkey. At the end of the research, it was seen that generally the studies on the topic in Turkey focus on a few traditional topics such as the use of educational technology and computer supported education; modernist researches are insufficient in terms of data collection tools, sampling methods, statistical techniques. In the research by Yalçın, Bilican, Kezer and Yalçın (2009), structure of the articles in Hacettepe University Journal of the Faculty of Education published in Turkey, scanned by SSCI were analyzed. Content analysis was used in the research. At the end of the research, it was seen that screening model is the most commonly used model (42,2%) in articles, 57,8 % of all of the researches are made of quantitative researches; the most commonly used statistical techniques are descriptive statistics, ANOVA, t-test and correlation techniques.

When the above mentioned data were taken into consideration, it was seen that research topics, qualities and quantities, methods and techniques of studies on many fields were evaluated in terms of content analysis and it was attempted to determine the tendencies in a specific field in this way. It is thought that, the obtained data will direct educational researches and make significant contributions to developing publishing policies of educational researches. It can be said that articles which are indexed by international indexes in "Education and Science" journal in Turkey, make significant contributions to researches about education, and in a sense, they direct the tendencies in the field. At his point, the tendencies of articles published in "Education and Science" journal, their contributions to the researches, methods and contents in the field of education should be seen. In this respect, it can be said that, this research was necessary in order to evaluate the researches published in "Education and Science" journal in a comprehensive and integrative way.

Method

This research is a descriptive research. Descriptive researches attempt to describe and explain the events, objects, resources, institutions, groups and various fields. By this means, it becomes possible to understand them well, make categorizations and determine relations (Kaptan, 1998). In descriptive research model, the features of science such as observation, recording, determining relations between events, making generalizations through controlled unchangeable principles are attempted to be described. Namely science's function of description is in the foreground (Yıldırım and Şimşek, 2006). In this study, it was attempted to analyze and explain articles published between 2007 and 2013 in Education and Science journal, which was the constraint of the study; the chosen articles are indexed by SSCI (vol. 32, issue 143).

Data Collection Tool

"Publishing Classification Form", which was originally developed by Sözbilir, Kutu and Yaşar (2012), was used by Göktaş et al. (2012) in order to make the analysis of articles in "Education and Science" journal. The same form was also used by Kılıç-Çakmak et al. (2013). In these three studies, some changes were made on this form, which was used in order to classify the articles about

educational sciences and sub-fields. The form that was revised in a way that it included all of the researches in educational sciences was used by the researchers by making some small changes. Publishing classification form is made of seven sections as; descriptive information about the identity of article, discipline, topic, method, data collection tools, sample and data analysis methods. 9 articles were randomly chosen from 153rd issue of "Education and Science" journal published in 2009. After that, researches randomly chose 5 articles and classified the articles they chose independently. Articles that were classified by researchers were discussed in group in order to increase reliability and disagreements on classification were resolved.

Analysis of Data

Content analysis technique, which is one of the qualitative research methods, was used in this study in order to evaluate the obtained data. Articles published between 2007 and 2013 in "Education and Science" journal were classified and analyzed under seven basic categories. The basic goal in content analysis is to reach concepts and relations that can explain the gathered data. Data that are summarized and interpreted in descriptive analysis are more deeply analyzed in content analysis, and concepts and themes that may be ignored in descriptive approach can be discovered through this analysis. What is basically done in content analysis is to piece similar data together in the frame of specific concepts and themes and to organize and interpret them in a way that readers can understand (Yıldırım and Şimşek, 2006). Falkingham and Reeves (1998) also stated that content analysis is s a new method used in order to evaluate publishing piles. In the process of analysis and interpretation of articles that were in "Education and Science" journal: Naming, developing category, ensuring validity and reliability, calculating frequencies and interpretation stages were carefully completed. In the stages of naming and developing category in content analysis; each article was carefully analyzed and categorized under some categories such as discipline, topic, method, data collection tools, sample and data analysis methods. It was importnat to ensure validity and reliability, so articles were analyzed on the basis of researchers' agreement. Finally, the analyzed articles' frequency based on the determined articles and frequencies were calculated and interpretations were made on this basis of these information. Articles that were analyzed by researchers were examined in terms of discipline, topic, method, and data collection tools, sample and data analysis methods. During these processes, every researcher made a general evaluation about the article he/she examined. Firstly, information of the volume, issue and authors of the article were entered as data according to the language of publication, information about the institute of author and articles' reference numbers. After that, topic and method, data collection tool and methods that were used while analyzing data were determined. But during these stages, it was seen that in some articles, there weren't explanatory information about the method, data collection tool and data analysis method. In these cases, method, data collection method and data analysis method of these articles were properly named, coded and analyzed. Agreement of researchers were ensured and taken into consideration in the articles in which such information was renamed.

Findings

Findings part of the study presents analyses, according to different variables, of the articles published in TED Education and Science journal and findings of these analyses. In this scope, findings obtained from the analyzed articles are listed in this part on the basis of (i) distribution to university, (ii) the number of variables used, (iii) the language of publication, (iv) process steps, (v) subject area, (vi) methods used, (vii) data collection tools, (viii) sampling, (ix) data analyses method and (x) recommendations and discussion. Study findings are tabulated in frequencies and percentages, and interpreted as follows.

Table 1.
Distribution to Universities of the Articles Published in TED Education and Science Journal

University	Frequency (f)	Percentage (%)
Hacettepe University	80	14.6
Ankara University	46	8.4
Gazi University	42	7.7
METU	32	5.8
Abant İzzet Baysal University	20	3.6
Anadolu University	14	2.6
Dokuz Eylül University	14	2.6
Karadeniz Technical University	14	2.6
MEB	13	2.4
Ege University	12	2.2
Mersin University	11	2
Pamukkale University	11	2
Fırat University	10	1.8
Çanakkale Onsekiz Mart University	9	1.6
Marmara University	9	1.6
Sakarya University	9	1.6
Akdeniz University	7	1.3
Boğaziçi University	7	1.3
Erciyes University	7	1.3
Kocaeli University	7	1.3
Mehmet Akif Ersoy University	7	1.3
Başkent University	6	1.1
Çukurova University	6	1.1
İnönü University	6	1.1
Osmangazi University	6	1.1
Yıldız Teknik University	6	1.1
Ahi Evran University	5	.9
Atatürk University	5	.9
Balıkesir University	5	.9
Gaziosmanpaşa University	5	.9
Kırıkkale University	4	.7
Muğla University	4	.7
Niğde University	4	.7
Ondokuz Mayıs University	4	.7
Adıyaman University	3	.5
Adnan Menderes University	3	.5
Bahçeşehir University	3	.5
Cumhuriyet University	3	.5
Dumlupınar University	3	.5
Erzincan University	3	.5
Gaziantep University	3	.5
İstanbul University	3	.5
Selçuk University	3	.5
TED University	3	.5
Uludağ University	3	.5
Other Universities	68	
Total	548	100

Figure 1. *Distribution to Universities of the Articles Published in TED Education and Science Journal*

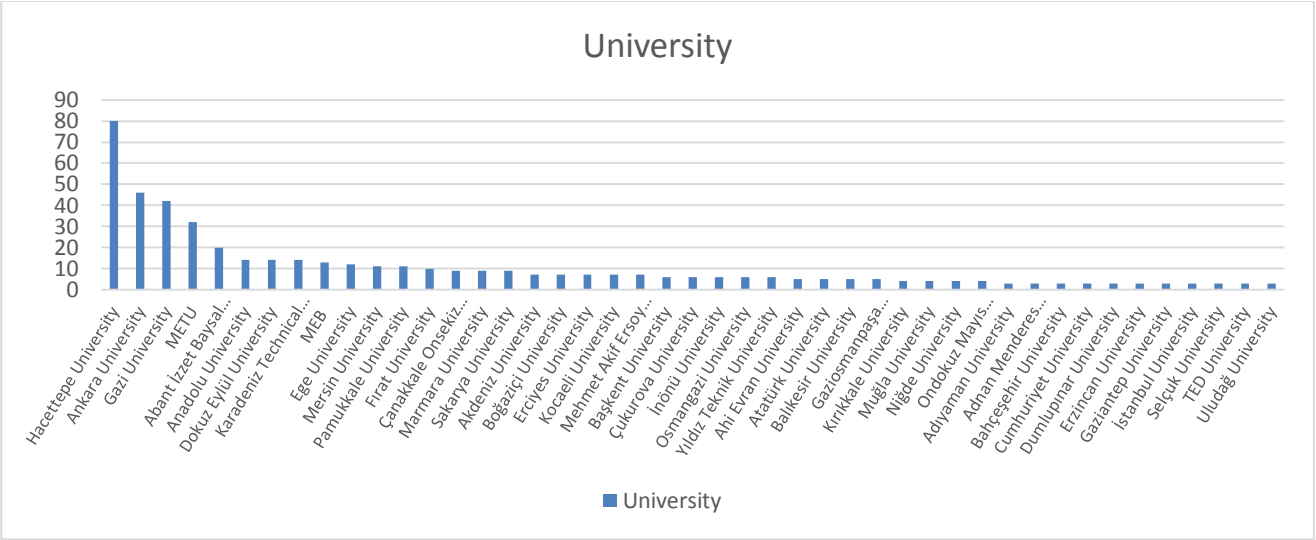

Figure 1. *Distribution to Universities of the Articles Published in TED Education and Science Journal*

Examination of the table above shows that the articles published in TED Education and Science journal are received from 548 universities. Receipt of some articles from more than one person is taken into consideration in this scope. At the same time, findings presented under 3 articles (5%) are included in the "Other Universities" section. The table shows the distribution to universities of the articles published in TED Education and Science journal. Accordingly, Hacettepe University has the highest number of articles published in the concerned journal: it is concluded from the table that 80 articles have been published in the Education and Science journal on behalf of Hacettepe University. This figure corresponds to 14.6% of the all articles published in the journal. Hacettepe University is followed by Ankara University (46), Gazi University (42), METU (32) and Abant İzzet Baysal University (20). Totally 220 articles have been published in the journal in the name of these five universities, which constitutes 40.1% of the total articles published in the journal. At the same time, articles from Ministry of National Education (MoNE) are also recorded to take an important share (2.4%).

Table 2

Distribution of the Number of Variables Used in the Articles Published in TED Education and Science Journal

Number of Variables	Frequency (f)	Percentage (%)
1	258	52.4
2	154	31.3
3	64	13
4	11	2.2
5 or more	5	1
Total	490	100

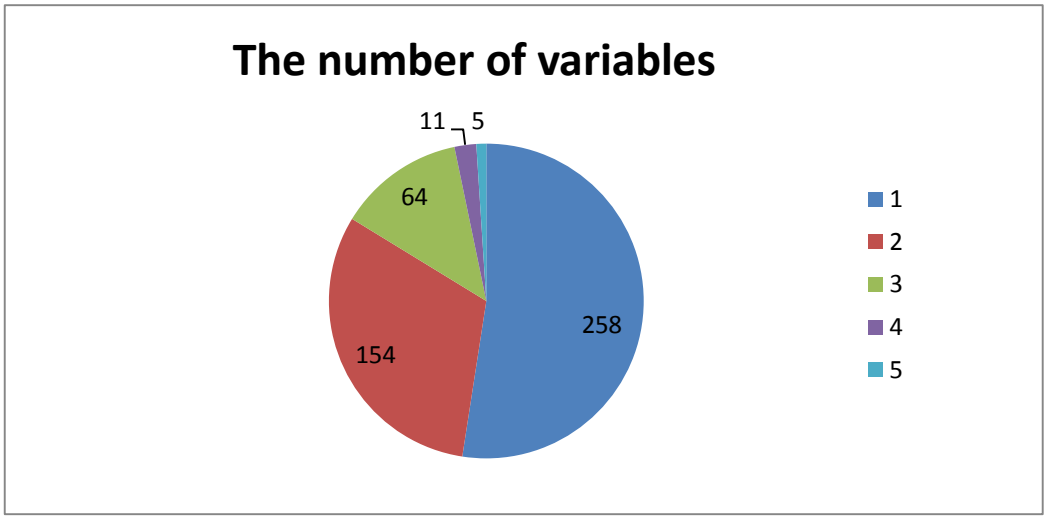

Figure 2. *Distribution of the Number of Variables Used in the Articles Published in TED Education and Science Journal*

The table and figure above presents descriptive data on the number of variables used in the articles published in TED Education and Science journal. Main variables of the articles are addressed in this scope. Examination of Table 2 shows that 258 researches or articles search 1 main variable and this figure corresponds to 52.4% of all researches or articles. The number of researches or articles discussing 5 or more variables is found to be 5.

Table 3
Distribution of Language of Publication of the Articles Published in TED Education and Science Journal

Language of Publication	Frequency (f)	Percentage (%)
Turkish	320	65
English	172	35
Total	492	100

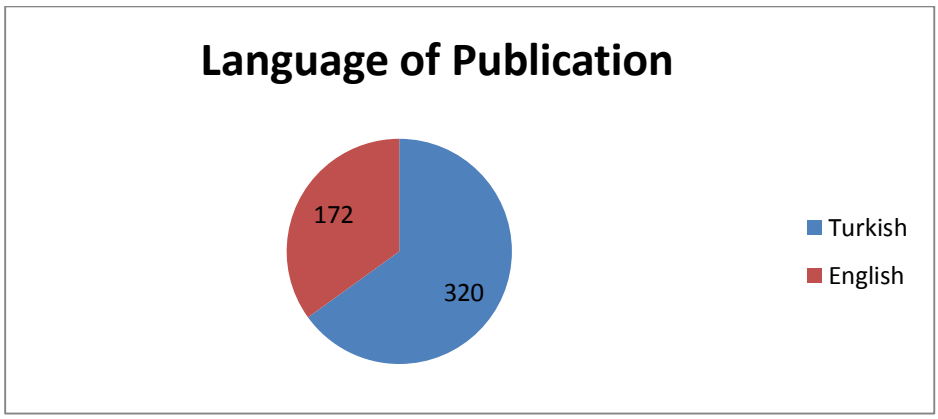

Figure 3. *Distribution of Language of Publication of the Articles Published in TED Education and Science Journal*

Table 3 lists information on the language of publication of the articles published in TED Education and Science journal. Examination of this table shows that 320 articles (65%) are published in Turkish and 172 articles (35%) in English language.

Table 4.
Distribution of Process Steps of the Articles Published in TED Education and Science Journal

Process Steps	Frequency (f)	Percentage (%)
No	234	47.6
Yes	258	52.4
Total	492	100

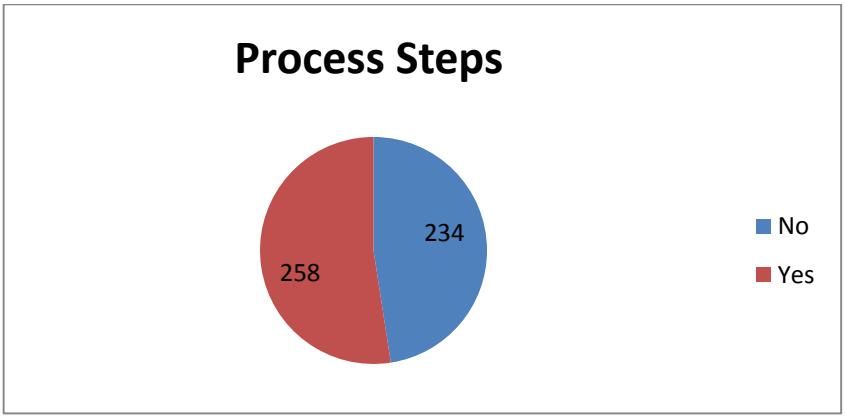

Figure 4. *Distribution of Process Steps of the Articles Published in TED Education and Science Journal*

Table 4 gives information on process steps followed by the articles published in TED Education and Science journal. Examination of the table reveals that 234 (47.6%) of the articles published in the journal do not give any information on process steps while 258 (52.4%) include the process steps followed. Accordingly, it can be concluded that a considerable number of articles do not give detailed and functional information on data collection process.

Table 5.
Distribution of Subject Areas of the Articles Published in TED Education and Science Journal

Subject Areas	Frequency (f)	Percentage (%)
Education Management	56	11.4
Education Psychology	55	11.2
Education Programs and Teaching	61	12.4
Measurement – Assessment	44	8.9
Psychological Guidance and Consultancy	41	8.3
Special Education	9	1.8
Other Areas of Education Sciences	20	3
Pre-School	33	6.7
Literacy and Turkish Language Teaching	10	2
Math's Education	55	11.2
Science Education	27	5.5
Psychics Education	5	1
Chemistry Education	6	1.2
Biology Education	4	.8
History Education	6	1.2
Philosophy Education	1	.2
Education of Other Subject Areas	50	10.1
Other Subject Areas	15	3
Total	492	100

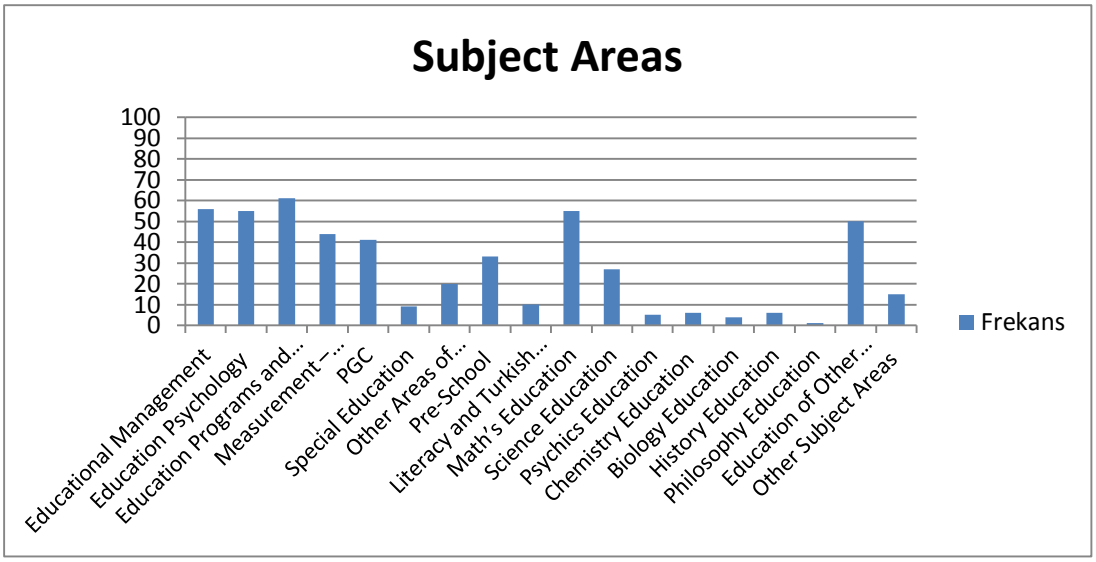

Figure 5. *Distribution of Subject Areas of the Articles Published in TED Education and Science Journal*

Table 5 lists findings on distribution of the subject areas of the articles published in TED Education and Science journal. These findings reveal that the subject area of 'program development' comes first with 61 (12.4%) publications, which is followed by Education Management (56), Education Psychology (55), Math's Education (55), Education of Other Subject Areas (50) and Measurement and Assessment. Another important finding is that Math's education is followed by pre-school (33) and Science Education (27). At the same time, while 296 articles are published in the subject area of Education Sciences, this number is 197 in Education of Other Subject Areas and 15 in Other Subject Areas. Other frequencies and percentages related to the study subject areas are listed in the table.

Table 6
Method Distribution of the Articles Published in TED Education and Science Journal

Method of Article	Frequency (f)	Percentage (%)
Quantitative	377	69.5
Qualitative	73	22
Mixed	13	2.6
Literature Compiling	26	5.3
Other	3	0.6
Total	492	100

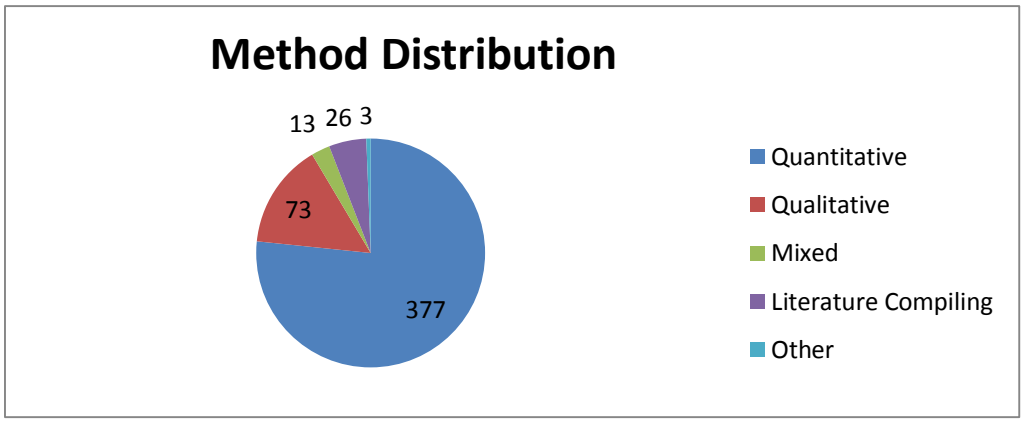

Figure 6. *Method Distribution of the Articles Published in TED Education and Science Journal*

Table 6 presents findings on the method distribution of the articles published in TED Education and Science journal. Examination of these findings shows that the number of quantitative

articles is (377) higher and this type of articles have a significant share (69.5%) in total number of articles published in the journal. Present study also has found that 22% of all articles are written according to qualitative research method; 5.3% according to literature compiling method and 2.6% according to mixed method. Following table lists findings on more detailed explanation of the methods used in these articles.

Table 7.
Detailed Method Distribution of the Articles Published in TED Education and Science Journal

Method Explanation		Frequency (f)	Percentage (%)
Quantitative Experimental	Full Experimental	35	7.1
	Quasi-Experimental	14	2.8
	Weak	1	0.2
	Single Sample	1	0.2
Quantitative Non-Experimental	Descriptive	226	45.9
	Comparative	7	1.4
	Correlational	12	2.4
	Scanning	32	6.5
	Scale Development	49	10
Qualitative	Cultural Analysis	3	.6
	Phenomenography	35	7.1
	Theory Development	1	.2
	Case Study	25	5.1
	Historical Analysis	1	.2
	Conceptual Analysis	2	.4
	Action Research	6	1.2
Mixed	Explanatory (Quantitative)	9	1.8
	Explanatory (Qualitative)	3	.6
	Diversification	1	.2
Literature Compiling	Meta-Analysis	1	.2
	Literature	25	5.1
Other	Other	3	.6
Total		492	100

Examination of this table reveals that among all articles to have been written according to quantitative method, 294 articles have preferred non-experimental method and 51 experimental model. Analyses of study findings show that descriptive model (226) is the most preferred model of non-experimental research method. It has also been found that descriptive research method is the most preferred method of all articles (226) and takes a share of 45.9% among all study methods. Another finding of the present study is that the second most preferred non-experimental quantitative method is scale development method (49). It has been found that full experimental method is preferred more (35) than all other experimental methods. The least preferred experimental method is found to be weak (1) and single sample (1) methods.

Examination of the study results shows that 73 of the articles published in TED Education and Science journal are written according to qualitative research method. Among all qualitative research methods, phenomenology method is recorded to be the most preferred method (35, 7.1%). An important finding of the present study is that phenomenology method is followed by case study method (25, 5.15). The least preferred qualitative research methods are found to be thesis development (.02%) and analyses (.02%) methods. Use frequency of the mixed methods has been found to be lower than that of other methods. The present study has revealed that 12 articles have been written according to the mixed method and that explanatory quantitative mixed method is preferred in 9 of

these 12 articles. Diversification-based mixed method has been recorded to be the least preferred mixed method.

Results of the present study show that there are 26 articles written according to literature compiling methods. At the same time, literature review method has been adopted in 25 of these 26 articles. Meta-analysis method, on the other hand, has been found to be used only in 1 study. Another finding of the present study is that other research methods have been used only in a few number of articles (3).

Table 8
Data Collection Tools Used in the Articles Published in TED Education and Science Journal

Data Collection Tools	Frequency (f)	Percentage (%)
Observation	11	2.4
Interview	50	9.9
Achievement Tests	31	6.2
Attitude, Perception, Personality Tests	257	51
Questionnaire	77	15.3
Document	45	8.9
Alternative Tools	28	5.6
Other	4	.8
Total	504	100

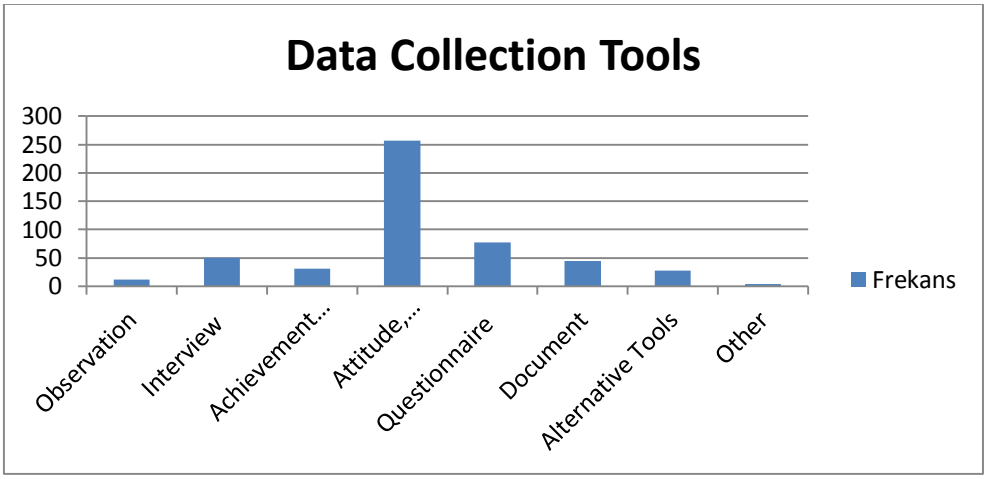

Figure 7. *Data Collection Tools Used in the Articles Published in TED Education and Science Journal*

The table above presents findings on the distribution of the data collection tools used in the articles published in TED Education and Science journal. Examination of these findings reveals that attitude, perception and personality tests are used more than other tools (257) and has a significant share (51%) among all data collection tools. The study also shows that the second most preferred data collection tool is questionnaire; questionnaire-based studies follow the test-based ones. According to the results of the present study, 77 of the 504 data collection tools used in the articles are questionnaires. Other data collection tools (4) and observation (12) have been found to be the least preferred methods. More detailed findings on the data collection tools used in the study articles are presented in the following table.

Table 9.
Detailed Distribution of Data Collection Tools Used in the Articles Published in TED Education and Science Journal

Explanation of Data Collection Tools		Frequency (f)	Percentage (%)
Observation		11	
Interview	Structured	24	
	Semi-Structured	27	
	Other	3	
Achievement Tests	Open-Ended	3	
	Multiple-Choice	23	
	Other	6	
Attitude, Perception, Personality Tests	Open-Ended	16	
	Multiple-Choice	8	
	Likert-Type	204	
	Other	28	
Questionnaire	Open-Ended	29	
	Multiple-Choice	1	
	Likert-Type	26	
	Other	11	
Document		45	
Alternative Tools	Performance, Identifier, Portfolio, etc.	16	
	Database Resources	17	
Other		4	
Total		504	100

Examination of the table above shows that attitude, perception and personality tests constitute the data collection tool most preferred by the articles. The most preferred type of this data collection tool is Likert-type (204). According to the results of the present study; attitude, perception and personality tests are followed by questionnaires and interviews. Open-ended questionnaires (29) and Likert-type questionnaires (26) have been found to be preferred. The study has also revealed that semi-structured interviews among all interview methods (27); multiple-choice achievement tests among all achievement tests (23); database resources among all alternative tools (17) have been used most. Considerable number of documents has also been found to be used in the articles as a data collection tool (45).

Table 10.
Distribution of the Type of Data Collection Tools used in the Articles Published in TED Education and Science Journal

Type of Data Collection Tool	Frequency (f)	Percentage (%)
Classical	476	97.1
Online	13	2,7
Mixed	1	0.2
Total	490	100

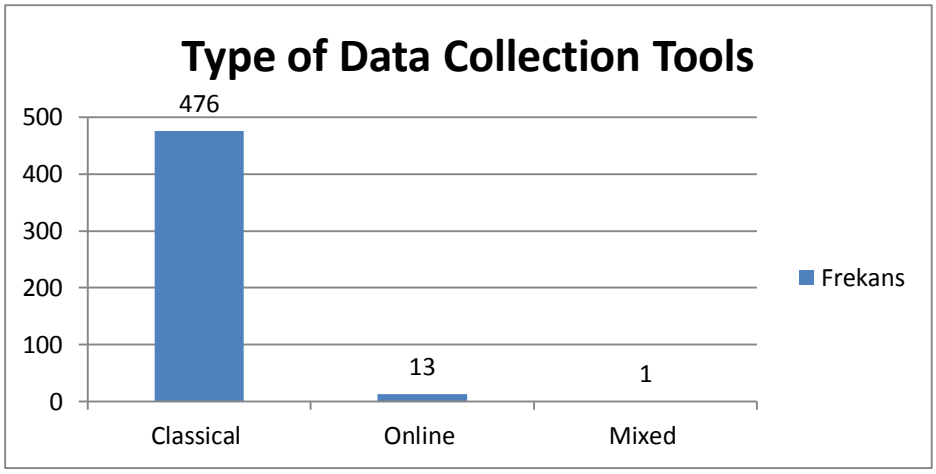

Figure 8. *Distribution of the Type of Data Collection Tools used in the Articles Published in TED Education and Science Journal*

Table 10 presents descriptive findings on the type of data collection tools used in the articles published in TED Education and Science journal. According to these findings, it has been possible to get clear information on the type of data collection tool used in 490 articles. Obtained results show that 476 articles have used classical type of data collection tool, which accounts for 97.1% of all articles. Online data collection method and mixed method have been revealed to be used in 13 and 1 articles, respectively.

Table 11
Distribution of Sampling Level of the Articles Published in TED Education and Science Journal

Sampling Level	Frequency (f)	Percentage (%)
Pre-School	11	
Primary School (1-5)	31	
Primary Education (6-8)	62	
Secondary Education (9-12)	45	
University (Education Faculty)	117	
University (Other Faculties)	61	
Post-Graduate	2	
Teachers	79	
Instructors	10	
Parents	11	
Administers	16	
Other	11	
Total	456	

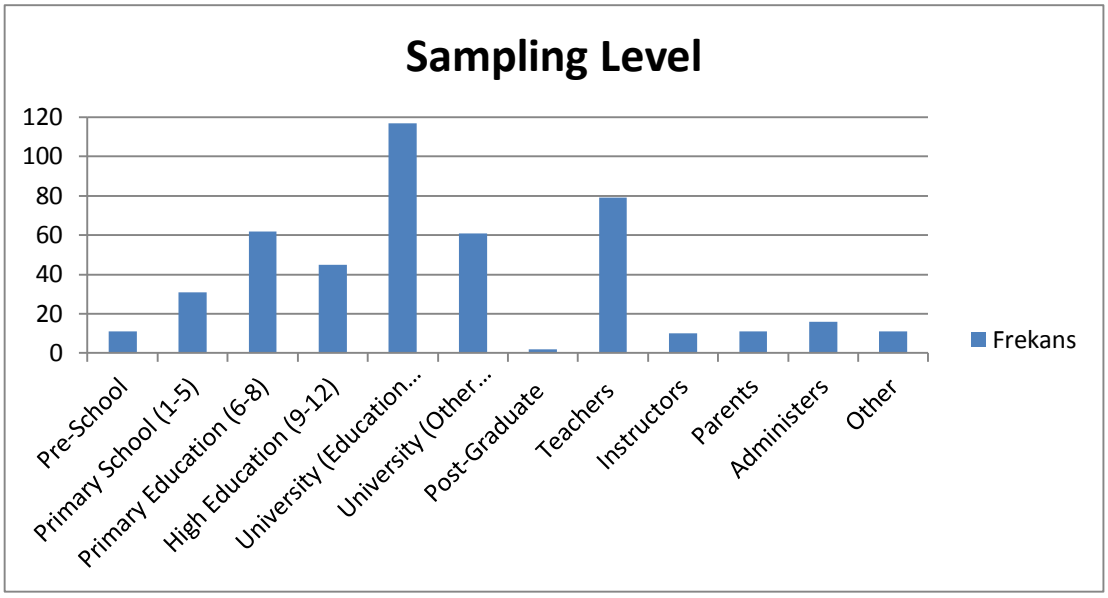

Figure 9. *Distribution of Sampling Level of the Articles Published in TED Education and Science Journal*

Above-presented table includes findings on the distribution of the sampling level of the articles published in TED Education and Science journal. Examination of these findings shows that study articles have sampling mostly from university level. Analyses of the table reveals that totally 178 articles have been conducted on a sampling from university level (Education Faculty and Other Faculties). This level of sampling is followed by the sampling group composed of teachers (79). According to study results, only a small number of articles have used postgraduates (2), instructors (11), pre-school level (11), and parents (11) as sampling population.

Table 12
Distribution of the Number of Sampling of the Articles Published in TED Education and Science Journal

Number of Sampling	Frequency (f)	Percentage (%)
Pre-School	58	11.8
11-30	59	12
31-100	102	20.8
101-300	101	20.6
301-1000	118	24.1
More than 1000	52	10.6
Total	490	100

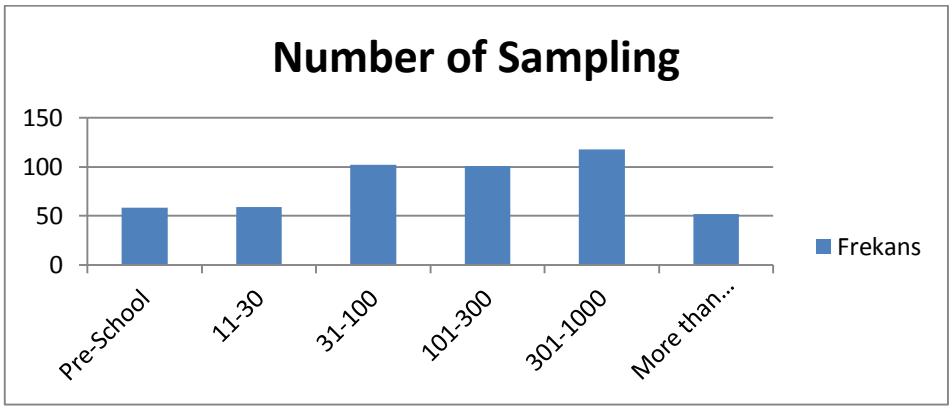

Figure 10. *Distribution of the Number of Sampling of the Articles Published in TED Education and Science Journal*

Table 12 presents descriptive findings on the number of sampling used in the articles published in TED Education and Science journal. According to these findings, the main sampling range used in the study articles is 301-1000 samples (118), which is followed by 31-100 samples (102) and 101-300 samples (101). According to the results of the present study, the number of articles conducted with the participation of more than 1000 samples is (52) lower than the others.

Table 13.
Distribution of Sampling Type of the Articles Published in TED Education and Science Journal

Type of Sampling	Frequency (f)	Percentage (%)
Random	192	39.2
Easily-Accessible	103	21
Purposive	176	35.9
Whole Universe	15	3,1
Other	4	.8
Total	490	100

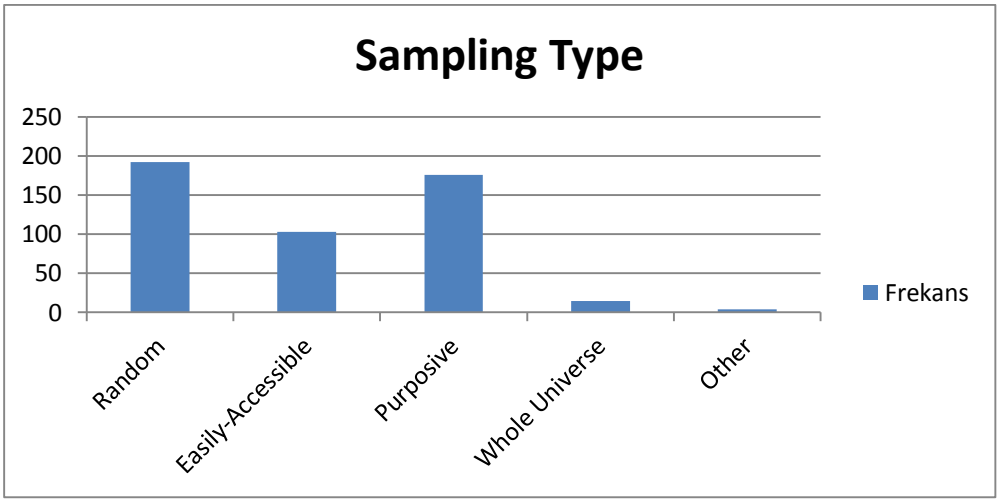

Figure 11. *Distribution of Sampling Type of the Articles Published in TED Education and Science Journal*

This table shows descriptive findings on the sampling types of the articles published in TED Education and Science journal. Examination of the study findings reveals that the most preferred type is random sampling (176). It is followed by purposive sampling method (176). The present study has shown that other sampling type (4) and whole universe type (15) are preferred less.

Table 14
Data Analysis Distribution of the Articles Published in TED Education and Science Journal

Data Analysis Method	Frequency (f)	Percentage (%)
Quantitative Descriptive	283	55.6
Quantitative Predictive	169	33.2
Qualitative	57	11.2
Total	509	100

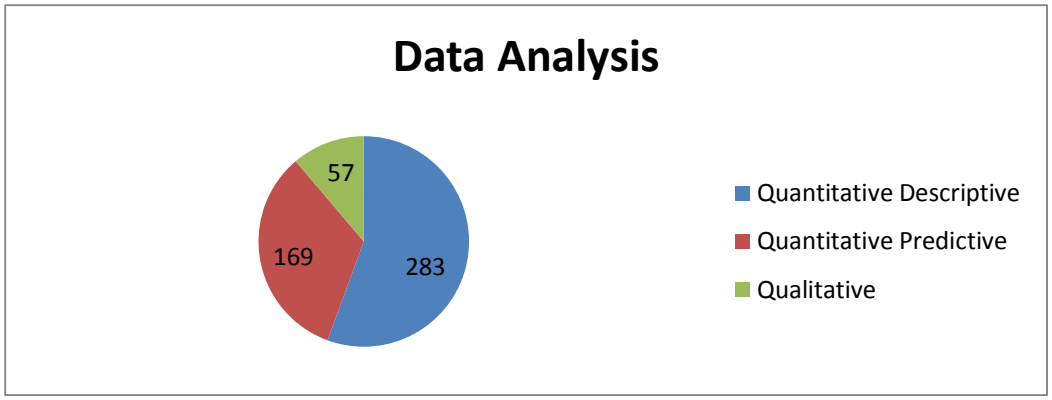

Figure 12. *Data Analysis Distribution of the Articles Published in TED Education and Science Journal*

The table and figure above presents descriptive findings on the data analyses methods used in the articles published in TED Education and Science journal. Examination of study findings shows that quantitative descriptive analyses method (283) is used most. This method is followed by quantitative predictive data analyses method (169). Quantitative data analysis (57) has been found to be the least preferred method.

Table 15.
Detailed Distribution of the Data Analyses Methods Used in the Articles Published in TED Education and Science Journal

Explanation of Data Analyses Method		Frequency (f)	Percentage (%)
Quantitative Descriptive	Frequency/Percentage/Table	88	
	Mean/Standard Deviation	53	
	Graphical Display	12	
	Other	4	
Quantitative Predictive	Correlation	44	
	t-test	70	
	ANOVA	83	
	MANOVA	11	
	Factor Analyses	20	
	Regression	33	
	Non-Parametric Test	16	
	Constructional Equivalence	49	
	Other	22	
Qualitative	Content Analyses	54	
	Descriptive Analyses	63	
	Other	18	
Total		509	100

Above table presents descriptive findings on the data analyses of the articles published in TED Education and Science journal. Examination of the study findings shows that the most preferred quantitative descriptive analyses method is percentage/frequency/table method (88). This method is followed by ANOVA method (83) and t-test method (70) among quantitative predictive data analyses methods and by descriptive analyses method (63) among qualitative analysis methods. Graphical display method (12) among quantitative descriptive data analyses methods (12), MANOVA test (11) and non-parametric tests among quantitative predictive data analyses method have been used the least.

Table 16.
Recommendation Distribution of the Articles Published in TED Education and Science Journal

Recommendations	Frequency (f)	Percentage (%)
One-Dimensional	63	13.5
Two-Dimensional	367	78.6
Three or More Dimensional	37	7.9
Total	467	100

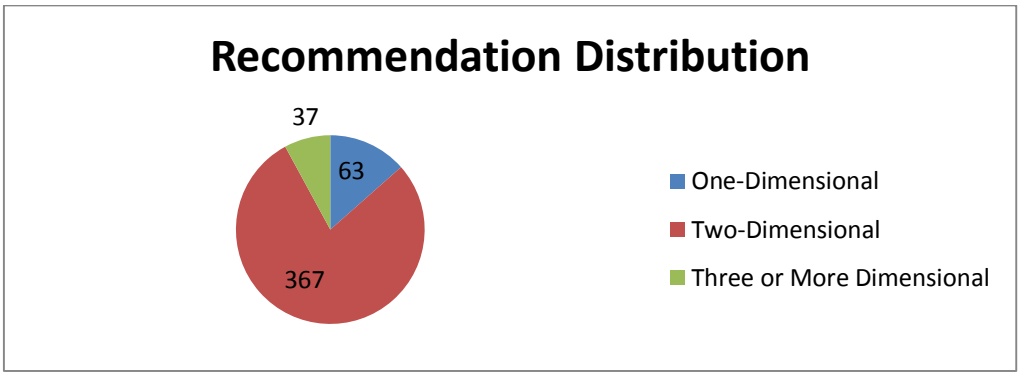

Figure 13. *Recommendation Distribution of the Articles Published in TED Education and Science Journal*

Table 16 lists descriptive findings on the recommendations of the articles published in TED Education and Science journal. Examination of these findings shows that most of the recommendations included in the articles are two-dimensional: 367 studies include two-dimensional recommendations. Study findings reveal that 63 studies include one-dimensional and 37 articles 3 or more dimensional recommendations.

Table 17
Discussion Distribution of the Articles Published in TED Education and Science Journal

Discussion	Frequency (f)	Percentage (%)
One-Dimensional	331	75.7
Two-Dimensional	86	19.7
Three or More Dimensional	20	4.6
Total	437	100

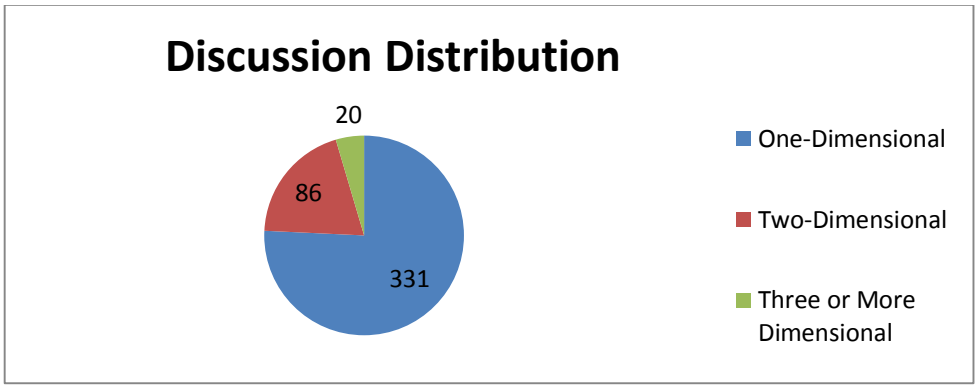

Figure 14. *Discussion Distribution of the Articles Published in TED Education and Science Journal*

Table 17 presents descriptive findings on discussion dimensions of the articles published in TED Education and Science journal. Examination of the study findings shows that most of the discussions are one-dimensional: 331 studies are based on one-dimensional discussions. On the other

hand, 86 studies are based on two-dimensional and 20 articles on three or more dimensional discussions.

Discussion, Conclusion and Recommendations

Examination of 492 articles published in 29 issues of Education and Science journal in 2007-2013 period shows that approximately 84% of these articles have a study pattern based one or two variables. Most of the articles submitted to Education and Science journal (36.5%) are recorded to be written by the scientists working for the reputable universities of Turkey (such as Hacettepe, Ankara, METU and Gazi University). Examination of all articles and publishing scientists shows that many national and foreign universities, institutions and organizations have submitted articles to Education and Science journal. However, the number of articles belonging to the education experts, teachers and administers employed in the Ministry of National Education (MoNE) is very limited and no study has been submitted by the Ministry of Development, Planning Organization or decision makers working on education planning or education economy. In addition, no study or report has been encountered, which is made by NGO's working on education. Average citation frequency of the studied articles is 37 studies. 65% of the studied articles are observed to be published in Turkish language and 35% in English language. Analysis of the articles in terms of language of publication has shown that in recent years English is heavily preferred as the language of publication.

In the scope of the content analysis, subjects of the articles published in Education and Science journal are classified into three categories. The first and most common study area is educational sciences, with the share of approximately 54% and the sub-disciplines most studied under this study area are education programs and teaching and education management. Second category is education of subject areas. The share of the articles on the subject areas corresponds to approximately 42% of all articles. Most of the articles falling into this category are on Math's education (11.2%) and pre-school education (6.7%). Third category includes the articles on subjects other than educational sciences. The articles in this category constitute approximately 3% of all articles. Main issues studied by the articles falling in this category are health sector and personnel. In his study analyzing the doctorate thesis studies on educational sciences, Karadağ has found that most of these studies are on education methods, education programs and teaching (2009). Similarly, Gökçek et al. (2013) has analyzed the studies conducted in Turkey in 2003-2012 period using mixed method and has shown that most of the studies on educational sciences are concentrated on education management.

Content analyses of the methods used in the articles published in Education and Science journal has shown that most of these articles (69,5%) are conducted using quantitative research methods, the share of qualitative studies is 22% and the studies using mixed method and literature compiling methods constitute only 6% of all articles. It can be concluded from the explanation of the methods used in these articles that descriptive and scanning models are used most in the quantitative articles and they are followed by full experimental and correlational methods. Examination of qualitative research methods, on the other hand, has revealed that the most common study pattern is phenomenology, followed by case study. The number of studies with mixed pattern is found to be very limited. No meta-analysis study has been encountered among the studies analyzed in this scope. These findings can be concluded to be similar to those of Gökçek et al, (2013), Sert et al., (2012), Çiltaş (2012), Göktaş et al., (2012), Şimşek et al., (2009) and Arık and Türkmen (2009). The reason why there is such high number of quantitative study in the scope of the present study and the literature is the capacity to access sampling and to collect and interpret data in a fast and easy manner. In addition, inclusion of only a limited number of qualitative studies in the present study is a finding similar to that produced by the study made by Saban et al. (2010) on qualitative studies. Saban et al. (2010) explain the reason why the number of qualitative studies is less than quantitative studies as less preference of qualitative research methodology by the academicians studying in the field of Turkish educational sciences and emphasize that sample case and phenomenology patterns are more preferred in the studies.

In the scope of the content analysis, types of data collection tools used in the study articles are examined to find out that attitude, perception and personality tests and scales constitute the most common data collection tool and they are followed by the data collection tools based on questionnaire and interview questions. Examination of the structure of the above mentioned most-commonly used tools shows that studied articles have used mainly Likert-type and multiple-choice test items. Content analysis has revealed that the least common type of data collection tools are the ones developed on the basis of alternative assessment tools and national/international database records. In his study, Yağmur Şahin, Kana ve Varışoğlu (2013) has analyzed the post graduate and doctorate thesis on Turkish language and has found that attitude and perception scales have been the most commonly referred tools. In their study analyzing the thesis studies on science education, Doğru et al. (2012) similarly detected that the studied thesis used perception and attitude scales most commonly. High frequency of the studies based on scales and questionnaires results from its such advantages over other studies as easy access, low cost, time and effort saving (Baş, 2005).

It is concluded from the analyzed articles that researchers have benefitted from the following methods during sampling: randomized sampling (39.2%), purposive sampling (35.9%) and easy-access sampling (21%). Only 3% of all studies have been observed to address the whole universe. In the scope of the content analysis, sampling size has been analyzed as well as the sampling method. The articles have been found to be conducted on sampling groups the size of which ranged from maximum 301-1000 samples (24,1%) to minimum 31-100 samples (20,8%). It is interesting that 49 (approximately 45%) of the studies conducted on a sampling group of 301-1000 population have been case development studies. In terms of access to sampling, 476 studies have used classical data collection method. The number of studies using online and mixed methods has been considerably low. An important point regarding sampling is that most of the studies have been conducted on the sampling groups composed of university students. Among 456 studies conducted by sampling method, 117 studies have been made with the participation of university students. Another interesting finding is that only 16 of the 56 studies conducted in the field of education management have collected data from administers. It is observed that studies tend to make interpretations using the data obtained mainly from teacher candidates and teachers. The data obtained by the present study from the sub-category of sampling size contradict with those of Göktaş et al., (2012) and Çiltaş, Güler and Sözbilir (2012). In the light of the obtained data, a sampling size of 301-1000 people has repeated more in the scope of the present study. Main determinant of this finding is that scale development and adaptation studies have been published with the participation of more than 301 samples in approximately 49 studies. However, regarding the sampling groups obtained in both studies, there is a similarity in terms of limited number of studies on parents, administers and instructors. This can be interpreted as follows: it is easier to conduct studies with the participation of students and teachers in terms of large sampling size and easy access to data.

Content analysis also includes the data analysis methods used in the studies. It is seen that quantitative data analysis has been the most common data analysis tool (89%) and approximately 55.6% of these analyses are quantitative descriptive and 33.2% quantitative predictive analyses. The rate of qualitative data analyses has been only 11.2%. Most common data analyses methods, on the other hand, are frequency, table and chart display and ANOVA and t-test. Among the qualitative data analysis methods, most commonly used one has been descriptive analysis. Analysis of 492 articles has proved the possibility of the use of mixed method and both and quantitative data analyses in one single study. In his studies, Yağmur Şahin, Kana ve Varışoğlu (2013) has made content analysis of postgraduate thesis studies and education science studies. Mostly descriptive analyses have been made and frequency, percentage and table display techniques have been used as descriptive analysis in the scope of the studies concerned. It has also been seen that quantitative predictive studies mostly include correlation, T-test and ANOVA analysis. Moreover, the findings obtained by Bektaş, Dündar and Ceylan (2013), Doğru et al., (2010), Göktaş et al. (2012) support the findings of the present study. From this aspect, the present study can be concluded to be similar to the studies mentioned above.

The reason behind conduct of mainly these analyses is that studied inter-variable characteristics are designed at low numbers and in an easy-to-explain manner and can be easily interpreted.

Dimensions of the discussions related to the studies analyzed in terms of content are analyzed according to such classification as inclusion of limitations addressed at shareholders, method, etc. In 75.7% of the analyzed studies, discussions have been observed to be one dimensional. Analysis of this ratio shows that most of these discussions are conducted on the basis of literature only and the discussion does not include the shareholders and limitations. In the scope of the content analysis, recommendations made at the end of these studies have been tried to be analyzed by grouping into such categories as shareholders, researchers, policy makers, decision makers and others. Examination of the recommendations shows that 78.6% of the articles make two dimensional recommendations.

Based on the data obtained by means of content analysis, it is seen that more publications are made on fields such as educational sciences, curriculum development and educational administration. As for the field-specific education, it is seen that publications concentrate on mathematics education. Accordingly, the fact that academic publications are made on different fields of educational sciences and field education can make significant contributions to the inclusive feature of TED Education and Science Journal.

Following the research it is seen that the articles published in the journal are done with quantitative methods. Furthermore, non-empirical and descriptive researches were found to be seen commonly in quantitative methods. Considering within this context, provided that the articles to be published hereafter are qualified, that the journal is blended with mixed methods, experimental methods will enrich the journal in terms of research methods.

Following the research it was found that sampling selection used in the published articles was commonly very easy to reach, and it consisted of random samples and was collected mostly from undergraduate students. Accordingly, in further studies, sample selection according to the study design, and selection of all relevant stakeholders regarding the education as the sample groupcan provide database for the quality of publications, application areas, policy makers, field literature and further studies.

Following the research it was found that the data analysis methods used in the published articles were mostly descriptive analysis, differences and relational analysis methods. When considered in this direction, use of multivariate studies, analysis and different analysis models can provide an important contribution to the development of the journal. Especially, it is attached importance to increasing the sample numbers compared to developing analysis methods, and contents that are gaining depth. Studies in which the number of hypotheses have been increased to fit the purpose, and in which the methods and practices are enriched, and which provide a way for researchers and decision-makers regarding education should be encouraged.

However; policies can be developed to give priority to issues such as students, their families and their social environment in schools, the relation between education and investment, improvement of infrastructures, evaluation of educational outputs, international competition and developments, working with samples selected according to the purpose, use of qualitative and mixed models, rich and qualified articles designed with methods that are more appropriate for providing data, number of variables and enrichment of discussion aspects, decreasing methodological faults and taking multi-disciplinary studies into publication much more.

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