Research study trends in web-supported evaluation tools for assessing inspectors, teachers and students

Eser Ceker*, Near East University, North Cyprus, 99138 Mersin 10 Turkey
Hafize Keser, Ankara University, 06000 Turkey

Abstract

Due to the development of modern technology, the number and variety of measuring tools used for assessing learners' performance continue to increase as a result of effective learning outcomes. Today, it is possible to make more detailed evaluations and decisions in relation to judging the performance levels of inspectors, teachers and students. Various databases, such as EBSCO, Science Direct and ULAKBIM were scanned and the retrieved articles were used for in-depth investigation for the purposes of this research. After studying the articles reached using the content analysis technique, the researchers of this article determined that the content could be classified into 13 categories: the 'publication year', 'publication type', 'number of authors', 'academic position of the researcher', 'country where the research was conducted', 'researching/supporting university', 'application area in education', 'the way of stating the purpose of the study in the research', 'research model', 'the paradigm adopted', 'targeted audience composing the universe', 'data gathering tools used' and 'research results'.

Keywords: Teacher, student, inspector, supervisor, assessment, web-based, web-supported.

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* ADDRESS FOR CORRESPONDENCE: **Eser Ceker,** Near East University, North Cyprus, 99138 Mersin, Turkey.
 E-mail address: eser.ceker@neu.edu.tr / Tel.: +90 392 223 64 64

1. Introduction

'Web supported assessment' in education can be defined as the use of information and communication technologies with web support in the application, measurement and evaluation process. Using web-supported assessment tools in order to measure and evaluate, the learning outcomes (in a specific discipline/area or dimension) can be extended to all or part of the data gathering, processing, evaluation, conclusion and reporting duration. Today, 'using web-supported assessment tools' in education can be explained as: making use of modern technological equipment such as laptop/tablet computers, smart phones… etc. with web-support (online or offline) for assessment purposes. Certainly, it is important to know 'for who', 'by whom' and 'how' these tools will be used. Parallel to this growing need, the total number and quality of research studies on using web-supported assessment tools in performance evaluations for inspectors, teachers and students continue to increase around the world (Newhouse, 2011; Oncu, 2006; Sung, Chang, Chiou & Hou, 2005).

Investigating the studies on web-supported assessment tool usage in education, the historical development shows that the progress has been slow. It is also clear that there are more research studies that assess 'student performance' than 'teacher performance'. A study conducted by Karal and Celik (2010) (which covered a period of 15–16 years) clearly shows that, although a limited number of research studies have been published that involve the use of web-supported tools in assessing teacher and student performance, similar studies for assessing inspectors performance are even less frequent (Karal & Celik, 2010, pp. 908–912). Examining the historical development of web-supported assessment tool usage in education and whether it shows any differentiating characteristics in terms of some variables, leads us to categorise these studies while evaluating into three main groups. These are: using web-supported assessment tools for checking the performance of 'inspector/supervisors', 'teachers' and 'students'.

1.1. Studies on using web-supported tools for assessing inspectors/supervisors performance

In this study, the first example found regarding the 'use of web-supported assessment tools for evaluating inspectors' performance' was in Dongel's (2006) master's thesis study. Dongel's study focussed on answering the question 'how can web/Internet support be implemented in performance assessment work?' The researcher shared some of the concerns previously expressed by Barutcugil (2002), and underlined the importance of the 'orientation' and 'encouragement' problem dimensions in the evaluation process for inspectors' assessment. In regard to the needs of primary school inspectors (related to performance assessment issues), the findings of this study revealed that inspectors mostly approve the suggestion and idea that 'web/internet support should be beneficial' (Dongel, 2006).

The other article example was published in Turkey by Copur et al. (2009), in which he researched the 'e-performance' in inspection studies of the Ministry of Education (TR). This study project aimed to reveal the evaluation of schools and teachers performance in the educational system by gathering and combining the evaluations from teachers, students, parents and inspectors separately. A mixed assessment system was used to accomplish this task, which was based on the web. This article focused on the new 'e-performance' measurement studies of the Ministry of Education (TR), although unfortunately, only the summary of the article could be accessed (Copur et al., 2009). It is stated that the Turkish Ministry of National Educations' 'e-inspection model', which is an example of a 'multilateral evaluation system' application study (related to the new performance measurement process in education), was still in the trial phase. Furthermore, it has been recently announced by the press/media that applications have been stopped/frozen for this project. Some stakeholders (e.g., teacher trade unions and some educators) have been criticising this project for some time. Taking all of these problems, issues and developments into consideration, it can be concluded that using multiple evaluation practices in education for Turkey has not yet been completely approved by all the

parties involved, and there is a lack of readiness among all stakeholders. Questions, similar to the ones mentioned by Knight et al. (2014, p. 372) are all started to be dealt with respects to the problems related to 'implications of performance assessment for teachers' in Turkey in the recent years.

1.2. Studies on using web-supported tools for assessing teacher performance

Tezer and Bicen's (2008) research study shows that, in regard to some application tools, there is evidence that instructors/teachers' readiness towards using 'e-education systems' can be evaluated as sufficient. Nevertheless, this study also reveals that the teacher readiness status does not include any preparation or experience in making use of 'web supported tools for self-assessing performance of teachers or students'.

In the master's thesis study conducted by Kavas (2009), the effects of a web-based system used in the process of developing the teaching skills of teacher candidates were examined. In the research, the effects of the teacher-based performance of the web-based system of candidate teachers as well as the development of self and peer assessment skills were tested. The web-based system was used to store the expert, peer and self-evaluation results obtained and to publish the videos taken by the candidate teachers in the experimental group for preparation purposes. In the research conducted with the participation of experimental and control groups, the results showed that the applications made via web-based training made a positive contribution to the professional development of candidate teachers.

One of the most unique studies in this regard was the study of Tanyel and Knopf (2011), which investigated how 'the use of digital media tools in assessing affects the teachers' personal performance' in the education of infant and preschool age group students. The results of this study, including web-based evaluation reviews, showed that teacher competencies and the level of use of digital media tools significantly improved the student–teacher interaction quality. Development was evident, particularly in the social/affective domain. The results showed that teachers who were more successful in using and have more positive opinions on the use of digital media tools in evaluating their students can make more successful social and affective connections with their students. Additionally, it was seen that this study increased the awareness of the teachers regarding the achievements of the students.

In some of the research studies in which web-based assessment tools were used to assess teachers success, it was observed that there were no significant differences among the teachers in terms of age, gender, level of academic education etc., while there were some significant differences observed in some of them, in terms of the evaluations of these subjects among the groups (Andreassen & Braten, 2013; Meti, 2013; Tella, 2011). Furthermore, in a study involving the use of web-based assessment tools to assess teacher's performance, most of the candidate teachers interviewed indicated that they were not willing to use such tools after graduation (Oz, 2014).

1.3. Studies on using web-based tools to evaluate student performance

Schacter Herl, Chung, Dennis and O'Neil (1999) found positive results in student problem-solving competencies in their study on the application of student-performance measurement using web-based, database network tools. Both the performance of the student and the data inputted into the system can be reported to the teacher and the student successfully so that the teacher and the learner can clearly see 'where the problem arises in the problem-solving process'.

Lin, Young, Chan and Chen (2005) used 'web-based evaluation' dimensional application modules in their study of the new pedagogical model (supporting information sharing and lifelong learning). This means that these modules are designed only for the evaluation of the students and that the application types are usually online quizzes and questions (true/false, multiple choice, gap filling, matching, thesis questions, portfolio ... etc.). The noteworthy aspect of this study is that it is 'adaptive'

to the system. In other words, the teacher can assign different point weights for different student groups, depending on the student's level, interests and unique situation and can make comparative studies and take backups for follow-up.

Wang, Wang and Huang (2008), emphasising the importance of teachers' ability to assess students' ability to learn, suggested that some research has revealed deficiencies in this area, particularly during the teacher's initial probation period. The researchers demonstrated in their study that they have developed an 'assessment qualification development model (WATA)' that they tested on 60 candidate teachers, where the participants were offered online personalised learning resources and tests. WATA was able to make improvements in the system by extracting analysis and statistics from the test results and presenting the information to the participants. The results of the research showed that the students using the model were more successful in comparison to those who did not use 'evaluation knowledge and perspectives'.

In the majority of studies on the evaluation of the web-based assessment tools, researchers have found that this has a positive effect on the evaluation of the educational process (Kavas, 2009; Kutluca & Ozpinar, 2011; Schacter, Herl, Chung, Dennis & O'Neil, 1999; Wang, Wang & Huang, 2008).

The widespread use of web-based assessment tools is primarily observed in the USA and European countries. Benefits of using various assessment tools and data from stakeholders in providing evidence to improve candidate teachers educational, training and performance improvement program needs are started to be researched as well by researchers such as Plecki, Elfers and Nakamura (2012). Proliferation in the use of web-based assessment tools has been seen predominantly in 'evaluations of students' studies. In this process, the perspective of multi/mutual evaluation for regional, institutional or individual performance evaluation is increasingly valued. The debate that emerged over the benefits of 'school-based evaluation' and 'standardised test system assessments' in this process has lasted for nearly 20 years. Result-focused 'standardised testing regimes' have gradually begun to be abandoned in some countries, as identified by Collins, Reiss and Stobart (2010) and MacCann and Stanley (2010). However, as Collins, Reiss and Stobart (2010) and MacCann and Stanley (2010) stated in their research results, it was understood that teachers' adaptation to new applications would be difficult. In a review conducted by Wyatt-Smith, Klenowski and Gunn (2010) on the Australian Research Council Linkage Project, in which teachers assess student learning while emphasising the acquisition of thought and skill acquired at the end of the learning process, they introduced new examples of how the 'online moderation meetings' used in their work could benefit from the teacher's technology-based assessment tools (Adie, 2015).

1.4. The purpose and importance of this research

The general aim of this research is to examine the content of web-based surveillance-teacher-student evaluation tools and their use by content analysis, and to identify recent trends in research by searching on various databases. The purpose of this study is to determine the sub-aims of the research studies aimed at the use of web-based evaluation tools with reference to: 'publication year', 'publication type', 'number of authors', 'researcher title', 'country where the research was performed', 'research method', 'paradigm adopted in the research', 'target group that constitutes the universe in the research/sample', 'data collection tools used in the research' and 'research results' variables. The trends to be determined based on these variables and the possible effects of these trends on the outcomes of the studies may be informative and useful for further studies on the subject in the Turkish Republic of Northern Cyprus (TRNC).

Within the scope of this study, the aim was to investigate the use and effectiveness of web-based assessment tools for supervisor–teacher–students around the world, developments according to certain variables, the current conditions and academic studies in this area. All retrieved evaluations by involved stakeholders in the past research (Chang, Tseng & Lou, 2013; Eyal, 2010; Kahraman, Yilmaz, Erkol & Yalcin, 2013; Tseng & Tsai, 2010), the validity and reliability of the instruments developed and tested for this

purpose to date (Chang, Liang & Chen, 2013, Chang, Tseng & Lou, 2013; Gul, Cokluk & Dogan Gul, 2014) and their results have been examined. It is thought that the evaluations and recommendations determined as a result of this research are beneficial for researchers and supervisors who want to conduct studies on the use of web-based assessment tools in education. This study, besides focusing on the supervisor–teacher–students circle, has a broader spectrum of sampling in terms of targeting undergraduate, graduate students, parents and administrators. It is expected that the data obtained as a result of the examination of the research trends under various categories related to the aim of the work will be useful for informing researchers about new research topics, decision makers and policy makers.

The contribution of the study lies in the fact that the opinions and expertise of candidate teachers in the TRNC on how to utilise web-based assessment tools for education has not yet been investigated in great detail. Unfortunately, no studies using working examples of 'web-based evaluation-use of self-assessment tools' were found for teacher candidates who continue their education in the TRNC, teachers who are already working in schools affiliated with the Ministry of Education, and supervisors inspecting education in these schools. The purpose of this research is to make a permanent positive contribution to this field.

In the thesis study published by Dongel (2006), it was found that primary education inspectors in Turkey are willing to improve themselves by using web-based evaluation tools. There have also been significant developments in this area since 2005, with inspectors working in the TRNC who have been involved with the educational projects implemented by the European Union. On the other hand, similar to Wang, Wang and Huang (2008)'s research results, it is possible to reduce the existing resource limitations in the training of candidate teachers in private universities in the TRNC, as well as those all working in the profession in order to reduce the deficiencies in education, particular during the candidate teaching period. Suggestions derived from this and further studies may create opportunities and support environments that could make a positive contribution to the education process in developing countries.

2. Method

The content analysis method is used in this study where a qualitative paradigm is based on the publications that constitute the content of the research studies. The process involved classification, coding, presentation of the data in numerical form, analysis and reporting stages. Content analysis is commonly used in the qualitative research. In these analyses, similar expressions are put together in the context of certain concepts and themes, which are then interpreted in a manner which is understandable to the reader. In this research, the use of content analysis was deemed to be suitable because of the characteristics and tendencies in various dimensions of the examined publications.

2.1. Scope of the study

The scope of this work included thesis studies [doctorate (n = 6) and graduate (n = 9) level] related to the topic published in the ULAKBIM (TR) Social Sciences Database. In addition to these, articles published in nationally peer reviewed journals (n = 15), SSCI/international indexed journals (n = 10), articles published in national journals (n = 10) and international Internet journals (n = 40) were also included. In the research, purposeful sampling is used so that only inspectors, teachers or students were included in the scope for web-based/based evaluation. 'Purposeful sampling is a probabilistic and non-arbitrary sampling approach. Purposive/purposeful sampling allows for an in-depth research by selecting information-rich cases depending on the purpose of the study' (Buyukozturk, Kilic Cakmak, Erkan Akgun, Karadeniz & Demirel, 2011, p. 78)

2.2. Determination of data categories

In this study, the Article Numerical Analysis Template (ANAT) in MS Excel format developed by Keser was used as the data collection tool. In the research process, some sub-headings of ANAT used for data collection were developed to meet the emerging needs of this study; thus, new variable areas were added to the template. The final form of the ANAT used consists of the following basic review sections.

i   Research publication year
ii   Research publication type
iii   Number of researchers
iv   Researcher titles
v   Country where the research was conducted
vi   University where the research was conducted
vii   Application area in education
viii   Expression format of the research purpose
ix   Research model
x   Paradigm adopted in research
xi   The target group that constitutes the sample in the research
xii   Data collection tool in the research
xiii   Research result

2.3. Analysis of data

At the end of the data collection process, the data obtained by processing in ANAT form were transferred to the statistical Package for the Social Sciences 20.0 program and analysed using this package. Frequency and percentage tables of descriptive analysis types were used in the analysis of the data.

3. Results

A total of 98 articles related to the issue published in 24 journals and 50 electronic journals indexed by EBSCO, Science Direct and ULAKBIM Social Sciences databases between 1999 and 2015 were examined and the findings obtained from this study were analysed in 13 categories in accordance with the ANAT template.

3.1. Findings related to years of publication of research

The distribution of published research articles related to web-based teacher evaluation according to years is shown in Figure 1.
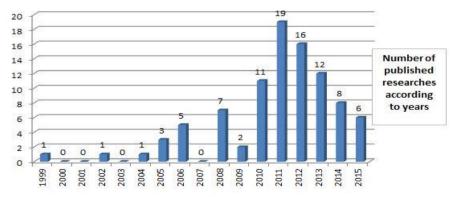

Figure 1. Distribution of studies by publication years

Looking at Figure 1, which shows the distribution of web-based teacher evaluation studies by years, the research related to web-based teacher evaluation appears to have been more intense in the period between 2010 and 2014 in comparison with previous years. This can be attributed to concentration of research and article work in the relevant area, parallel to the encouragement of research efforts by universities.

3.2. Findings related to the publication level of the research

The distribution of the research conducted in the form of a thesis study, either directly or indirectly, with the dimension of web-based teacher evaluation is shown in Figure 2(a) and (b).
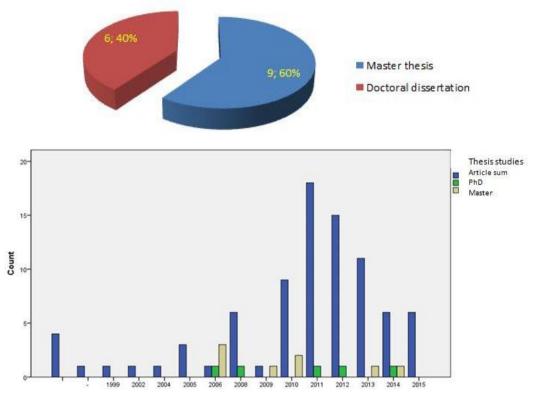

Figure 2. (a) Distribution ratios of published research work at thesis level.
(b) Trend of 'number of thesis-based work on the subject' by years

In Figure 2(a), it is determined that the majority of publications are in 'master thesis' ($n = 9$), while a slightly lower number of doctoral dissertation studies were related to the subject ($n = 6$).

When the distribution of master's and Doctorate theses according to the years is examined [Figure 2(b)], it is seen that the number of master's theses in 2006 and 2010 is greater than the number of doctorate theses.

The distribution of studies according to type and location of publication is shown in Figure 3(a), with the yearly distribution shown in Figure 3(b).
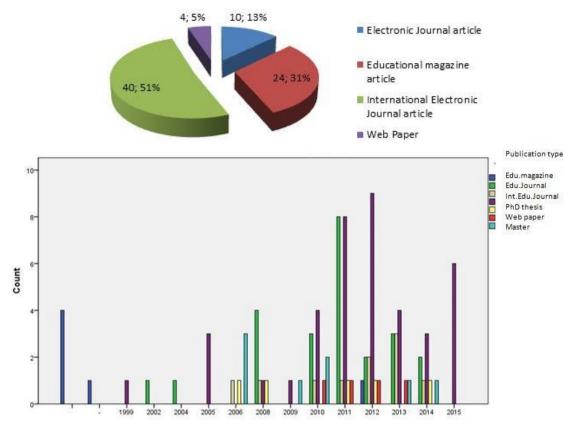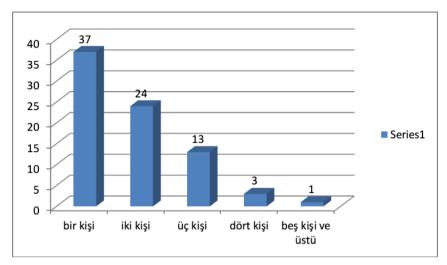
Figure 3. (a) Distribution of publications in article format by publication location.
(b) Distribution of publications in article format by publication type and years

In the data shown in Figure 3(a), it can be seen that more than half of the examined publications (n = 40) were published in International Electronics Magazines, followed by articles published in educational magazines (n = 24) and then those published in national electronic journals (n = 10). A small number of documents on the subject (n = 4) published in the form of a web paper were also accessed. In the distinction between international and national publications, the rate of articles published in SSCI and International Journals is 63% and the rate of articles published in National Peer-reviewed Journals is 37%.

When the distribution of the articles published in various locations according to year of publication is examined [Figure 3(b)], the total number of articles (n = 16) published in the related Educational Magazines and International Magazines reached the highest level in 2011. However, the number of articles published in international educational journals in 2012 continued to increase (n = 9), while those published in national educational journals (n = 2) started to decrease. The decline in the articles published in international journals in 2013–2014 was reversed in 2015.

3.3. Findings related to the number of authors involved in the research team of the publications

The distribution related to the number of authors of the examined publications is given in Figure 4(a).
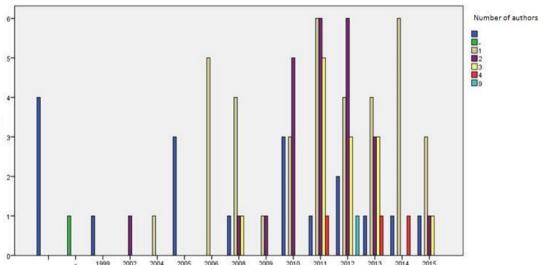
**Figure 4. (a) Distribution of publications by the number of authors involved in the research team.
(b) Distribution of publications by the number of authors and by years**

When the distributions according to the number of authors of the accessed publications are examined, it is seen that the majority were single author studies (n = 37, 47%) followed by two author studies (n = 24, 31%). Work written by teams composed of four or more authors was less preferred.

When the trend related to the number of authors in the research is examined according to the years of publication [Figure 4(b)], it was seen that the number of studies published by one, two and three authors peaked in 2011. After 2005–2006, while single authored works were dominant in terms of the number of articles published, a remarkable decrease can be observed in the studies written by two or three authors after the years 2011–2012.

3.4. Researcher's academic title findings related to the number of publications

The number and percentage of research articles published based on the academic titles of the researchers involved are shown in Figure 5(a).
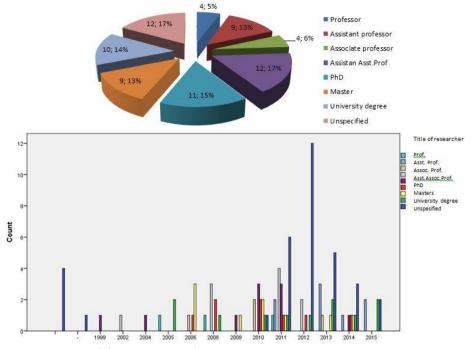
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Figure 5. (a) Distribution of publications by researcher title.
(b) Distribution of publications by researcher title and years

According to the distribution of the researched publications, it was found that the 5% of the authors were professors, 6% were associate professors, 15% were doctoral researchers and 13% were master's researchers. However, 17% of the researchers did not provide their title.

When examining the change characteristics in publication numbers with reference to the titles of the articles authored by years [Figure 5(b)], it can be seen that the most productive period for all academic levels was between 2010 and 2014.

3.5. Findings related to the number of the publications according to countries and universities where the research was conducted

The distribution of publications according to the countries and universities in which the research was conducted is shown in Figure 6.
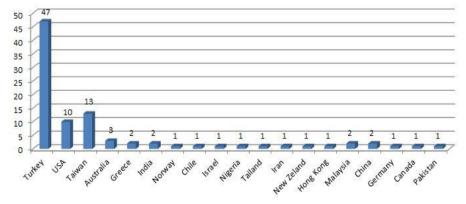

Figure 6. Distribution of publications by countries and universities in which the research was conducted

According to the distribution of publications according to the countries and universities where the research was conducted, it has been determined that apart from Turkey, the country in which the most research related to the subject was performed was Taiwan (13). Amongst the universities in this country, National Taiwan University (7) had the highest number and the majority of the research conducted at this university was published between 2012 and 2013. In terms of the UK (10), which was ranked second in the list of countries where related research was published, it is seen that the researchers came from entirely different universities. The leading country in publishing the highest number of research study on related issues was found to be Turkey (47). Amongst the research debate between universities in Turkey's list, the universities that were have found to have completed the most research were Black Sea Technical University (4), Marmara University (4), Sakarya University (3), Middle East Technical University (3), Firat University (3) and Celal Bayar University (3).

Analysis of the distribution chart according to the years that the research was conducted at these universities reveals that the number of studies intensified after 2005. It is also understood that the majority of the universities performed most of their research work in this area in the period from 1999 to 2015, and particularly between 2011 and 2012.

3.6. Findings related to the distribution of researches by study area

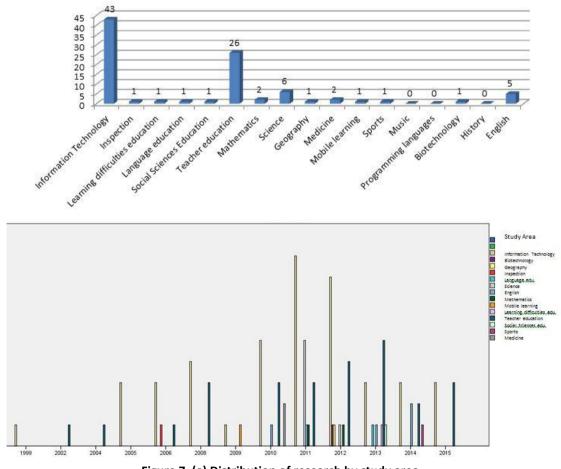The distribution of research by study area is shown in Figure 7(a).

Figure 7. (a) Distribution of research by study area.
(b) Change of study area preferences in research according to years of publication

When the distribution of the research according to the study area is examined [Figure 7(a)], it is seen that the largest proportion of studies were on Information Technologies (*n* = 43) followed by studies focused on teacher education (*n* = 26). It has also been found that studies in the field of Science (*n* = 6) and English (*n* = 5) were also conducted.

When the distribution of the studies in various research areas according to years is examined [Figure 7(b)], it is seen that the studies on 'Information Technology', which is the most intensive application area, have been increasing since 1999. It is important to note that this increase reached its peak in 2011 (*n* = 9 research), but started to decline from 2012 onwards. Studies on 'Teacher Education', the second most preferred study field, show that the peak was achieved in 2013 (*n* = 5) followed by a slight decrease in 2014 (*n* = 2), after which it started to increase again.

3.7. Findings related to the expression of research goals

The distribution according to the way in which the research objectives are expressed in general is shown in Figure 8(a) and the same data for the thesis sub-group is shown in Figure 8(b).
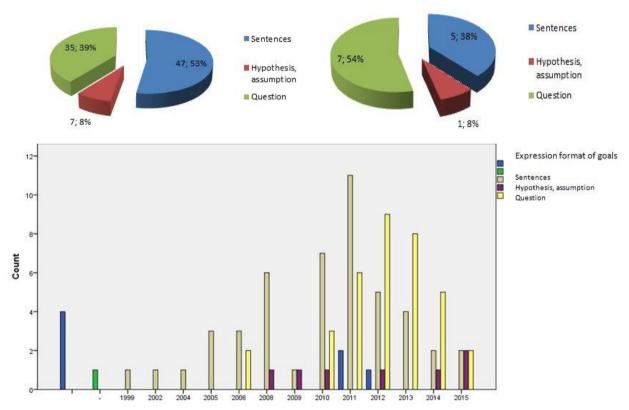

Figure 8. (a) Distribution of the expression of goals. (b) Distribution of expression of objectives in thesis. (c) Change in the 'expression format of goals' rates in the research by years

As shown in Figure 8(a) and (b), more than half of the researchers in the master and doctoral dissertations preferred to express the study objectives as 'questions'. On the other hand, it appears that the phrase 'sentence' came to the fore in evaluations made without considering the researcher level. The distribution of the expression format preference categories according to years is shown in Figure 8(c).

When the distribution of the expression format preference categorisations according to years is examined [Figure 8(c)], it is seen that the use of the expression of intention as a 'question' increased from 2006, reached the highest level in 2012 and decreased afterwards. Similarly, in 2011, the most

preferred form of expression was 'sentences'. However, from 2011 until 2015, a coherent and serious decline was observed in the number of researchers who expressed their aims as 'sentences' or 'questions'. The number of researchers who expressed their aims as 'hypotheses' increased 2015.

3.8. Findings related to the number of publications according to the research model

The distribution of the studies according to the adopted research model used is shown in Figure 9.
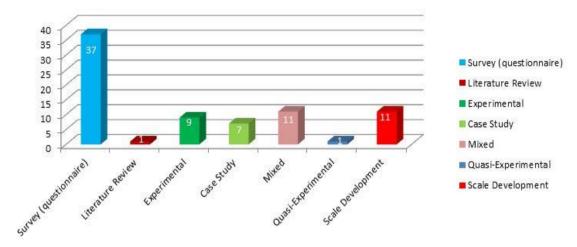

Figure 9. Distribution of published research according to the adopted model

When the distribution according to the research model on which the articles are based is examined according to the data in Figure 9, it is seen that the most preferred research model is the 'screening model' (n = 37). This is followed by 'mixed studies' involving more than one model (n = 11) and 'scale development' studies (n = 11). Among the qualitative researches, studies in mixed skill areas (n = 38) are frequent. It is seen that 'literature review' (n = 1), and 'semi-experimental research' (n = 1) were the least preferred study models.

3.9. Findings related to paradigm dispersion adopted in research

In the research-related articles on web-based supervisor/teacher/student evaluations, the distribution according to the paradigm used is presented in Figure 10.

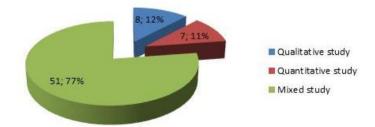**Figure 10. Paradigm distribution adopted in published research**

Figure 10 shows that mixed paradigms (using both qualitative and quantitative paradigms together) are preferred 77% of the studies that were access. In the remaining distribution part, the adoption rates of the qualitative (12%) and quantitative (11%) studies are very similar to one another in terms of the number of published articles.

3.10. Findings related to the target group that formed the sample in the research

The distribution of the researches based on web-based supervisor/teacher/student evaluation according to the sample group is given in Table 1.

Table 1. Distribution of publications by sample group

Target sample group	Frequency (*f*)	Percentage (%)
Teacher	32	35
Candidate teacher	20	22
Student	18	20
Teacher and student	7	8
University student	5	5
University lecturer & student	4	4
University lecturer	3	3
Teacher, student and parent	1	1
Inspector	1	1
All age groups	1	1
Total	100	100

When the distribution of the web-based supervisor/teacher/student evaluation research is examined according to the sample group that constitutes the targeted sample, teachers (*n* = 32) were the most preferred group, compared with inspectors (*n* = 1), teachers, students and parents (*n* = 1) and all age groups (*n* = 1), which were the least preferred.
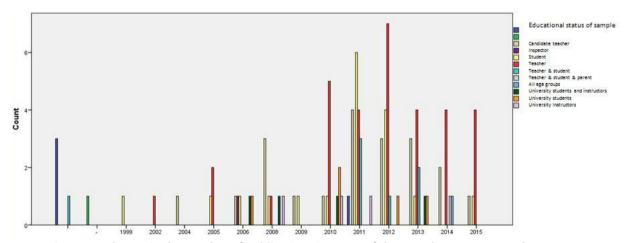

Figure 11. Change in the number of publications in terms of the sample target groups by years

When the distribution of the studies according to years is examined in terms of the target group that constitutes the sample in the studies (Figure 11), it was seen that research on 'teachers' reached the highest level in 2012 (*n* = 7), and it has consistently maintained a steady annual average level (*n* = 4) both before and after this year. For the 'candidate teachers' target group, there is an interesting situation. According to the results of this research, there has been a steady and regular decrease in the number of studies related to 'candidate teachers' since 2011. In the period from 2011 to 2015, the number of studies on candidate teachers (*n*) decreased from 4 to 1. On the other hand, the number of studies related to 'students' has also decreased since 2011.

3.11. Findings related to data collection tools

The distribution of the data collection means used in the research is shown in Figure 12.
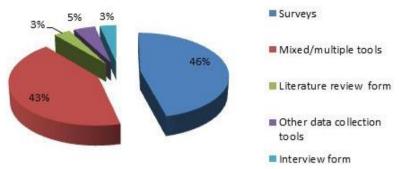
Figure 12. Data collection tool types used in published research

In the research articles examined, it was seen that the most preferred measuring tool were 'surveys' (46%) and 'mixed/multiple tools' (43%) in collecting data for the purpose of measuring quantitative and qualitative information. As a means of collecting data, tools that were used significantly less frequently were: 'document analysis forms' (3%), 'interview form (interviews)' (3%) and 'other data collection tools' (5%).

3.12. Findings related to research results

The results of these studies are categorised and shown in Figure 13(a) and (b), respectively, based on the evaluation results given by the authors and the change in the number of publications between 1999 and 2015.
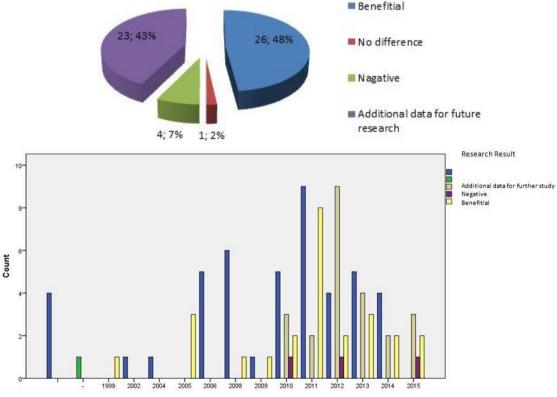
Figure 13. (a) Number of publications according to the research results.
(b) Number of publications in years in terms of the research results

When looking at the results of these studies given by their authors in the publications [Figure 13(a)], it was seen that nearly half of them (48%) regarded the research results as 'useful'. It was also seen that those who viewed the study as 'an important additional source of data for field research' (43%) had a slightly lower percentage. The percentage of researchers who evaluated the research results as 'no difference' was only (2%).

When the results of the research are cross-evaluated according to years [Figure 13(b)], it is observed that the significant increase in the number of researchers who evaluated their published study as 'useful' and 'additional data for field researches' in 2011 and 2012 has a gradually decreasing trend.

4. Discussion, conclusions and recommendations

This study was conducted in order to determine the general tendency of studies about web-based evaluation tool usage for the supervisors, teachers and students. In order to retrieve these publications, the EBSCO, Science Direct and ULAKBIM Social Sciences databases were scanned. From these databases, 24 magazines and 50 electronic journals were selected by the objective sampling technique, from which 101 articles were reached and evaluated according to the findings obtained as a result of the content analysis.

Among the 24 magazines scanned, studies on web-based evaluation tools for supervisors/teachers/ students were found to be published mostly in the Educational Sciences: Theory & Practice Magazine (n = 4). This may be particularly due to the fact that this magazine is published in English and that it has been in existence in the publication arena for many years.

According to these research findings, the number of studies in this area has gradually increased over the years. The results also showed that, in terms of the number of researchers in the team, 'individual studies' were generally preferred over others. Most of the research articles have been published by 'SSCI and international indexed publishing houses'. In published thesis categories (studies related to this subject), another interesting result is that 'graduate level thesis' are more frequent than 'doctorate thesis numbers'. It has also been observed that researcher titles are distributed almost evenly from the 'professor' level to the 'license' level. In this regard, Turkey is the most prominent country found in published research within the countries scale. In regard to the published research on this topic, it has also been found that Taiwan and the USA closely follow Turkey in this regard. It is also understood that most of the studies conducted in this area were published in 'international electronic magazines' environment. It was also determined that the 'information technology' is the area of the greatest interest for applying web-based assessment projects (and half of this area is related to 'teacher education') as a research area, while the purposes of the research in the doctoral/master theses are usually expressed as 'questions', it is understood that the phrase 'sentence' is more commonly used in a table combining all categories. One of the results of this research is that the most commonly used research models is the 'screening model'. The other clear finding is on the paradigms adopted in the research, which are predominantly 'mixed studies'. It has been also observed that studies have mostly been performed the 'teacher', 'candidate teacher' and 'student' groups as targeted samples. It is understood that the forms used for data collection are predominantly 'printed questionnaires' (and nowadays web-based questionnaires are increasingly used). It has also been observed that almost half of these research study results are evaluated as 'useful' by the researchers and following that, it was generally proposed that it could be used as 'additional data for field research'.

It is possible and may be beneficial to investigate why the number of studies on 'the use of web-based assessment tools for the supervisor, the teacher and the students' have increased during the period from 2000 to 2010, followed a downward trend. Some lessons can be drawn from the research results that have arisen. These lessons can help to further refine and support upcoming potential work that may be done in the field.

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Considering the decline in the number of studies conducted in this area from 2010 to 2012, it can be considered that by gradually increasing the number of published free-access studies in this area, this deficiency can be eliminated.

However, when analysing the last 10–15 years, the apparent lack of research numbers in this area gives rise to the thought that 'less multidisciplinary studies' and 'less evaluations involving all stakeholders' may be the result of inadequate number of tested, valid and safe assessment tools. Another assumption is that this weakness may have been caused by the fact that different target groups have not been adequately studied due to their different, original parameters and different countries economic-political-cultural conditions. Hence, it can be considered that rather than single-authored research studies, increased collaboration with researchers from different fields of expertise (even from different countries and universities) in new research studies will be beneficial based on the current world conditions and needs. It may even be more beneficial to increase the number of studies conducted on a 'multi-performance appraisal' basis, as well as to increase the methods of sharing the results as much as possible.

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