



## Mixed Methods in Educational Sciences: A Qualitative Content Analysis of Master's Theses\*

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Article Information	ABSTRACT
Received: 06.12.2021	Mixed methods appeared as the third methodological movement besides the quantitative and qualitative methodologies. This article evaluates master's theses in educational sciences that combine quantitative and qualitative methods to discuss mixed methods research in Turkey. For that aim, this article introduces a qualitative content analysis focusing on methodology chapters of 28 master's theses in educational sciences published in 2017 in Turkish universities. We formed our sample with a purposeful approach based on the theses from the Council of Higher Education Thesis Center Database. We first argue that mixed methods' methodological identity is in question, which is also associated with the approach to qualitative methodology. Second, there are problems in methodological rigor in the theses both for mixed methods' elements and the qualitative dimensions. Finally, we emphasize the dominance of the quantitative paradigm that sidelines the qualitative inquiry, which appears as an extension to the quantitative part of the studies.
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## 1. INTRODUCTION

Despite the controversies about its philosophical and practical compatibility, mixed methods\*\*\*\* research has drawn significant attention in social research methodology with its increasing usage since applying a single method is thought to be inadequate in view of the complex social issues and problems. Quantitative methods provide numeric information to generalize findings and see the bigger picture, while qualitative methods allow for insights into the social context of particular individuals and settings. Arguably, using both methods in a study enables capitalizing on their strengths and overcoming the weaknesses of quantitative and qualitative inquiries, which gave way to mixed methods' popularity after the 1980s, and literature about its definition was expanding (Creswell & Clark, 2017). However, using more than one method was not a novel application, as many scholars discussed and defined it differently beginning with the second half of the twentieth century. Campbell and Fiske, in 1959, referred to the term *multiple operationalism* to apply more than one method for psychological studies, while the term *triangulation* is used to explain using two different points for the observation of a research topic (Flick, 2006). Also, Webb et al. (1966) marked its importance for persuasive evidence and certainty of interpretations. Some authors also used the term *critical multiplism* for a post-positivist approach, stressing that methods are imperfect when used alone (Letourneau & Allen, 1999), while other terms are developed for combining and integrating quantitative and qualitative methods such as *multi-strategy research* (Bryman, 2006), *multimethod* (Stange, 2006) and *mixed research* (Johnson & Onwuegbuzie, 2004). Whereas these terms are used for using quantitative and qualitative methods in a study, the name *mixed-methods* is growingly used in the last decade and is offered as a generic term (Creswell & Clark, 2017; Mertens et al., 2016). The idea that quantitative and qualitative methodology are worlds apart and cannot be applied together due to their epistemological and ontological differences was tackled with the pragmatist philosophy, which places the relationship of actions and consequences at the forefront. It means using any method as long as it corresponds to research aims without pondering their philosophical assumptions. In line with that, mixed methods is set forth as the third paradigm (Johnson et al., 2007), which offered an alternative to the quantitative and qualitative dichotomy as the third methodological movement (Teddlie & Tashakkori, 2009). Long seen as to serve science *par excellence* or the true science, the positivist paradigm views reality as an objective phenomenon that can be tested with scientific methods whilst the qualitative paradigm's viewpoint of reality is based on a subjective and constructivist

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\*\*\*\* The term "mixed methods" appears in plural form but grammatically is used in a singular way.

understanding (Guba & Lincoln, 1994, 2005). Mixed methods, in a way, is thought to bring a “détente” to the paradigm wars between quantitative and qualitative methodologies by offering a third way (Bryman, 2008).

Albeit these developments and mixed methods’ role to bring a new paradigm that enables using both methods in a study, scholars viewed the field as “messy” (Leech, 2010) and called for precise definitions of mixed methods, which is also seen in an identity crisis (Anguera et al., 2018). There has been an increasing emphasis and broad agreement on the “mixing” and “integration” of quantitative and qualitative methods as a distinctive feature of mixed methods (Creamer, 2018; Fetters, 2018; Mertens et al., 2016) since just gathering quantitative and qualitative data is not enough, as it requires integration and interpretation of results drawn from two methods (Creswell, 2015). Attempts to demarcate the field occurred in a period that can be labeled as the “institutionalization of mixed methods” during which many academic endeavors took place, such as the appearance of the Journal of Mixed Methods Research (JMRR) in 2007 which allowed for further discussions and publications about mixed-methods research. Studies in this journal and elsewhere also focused on methodological rigor and quality by introducing frameworks, evaluation criteria, and checklists. These studies commonly emphasize that mixed methods research should, *inter alia*, include a clear rationale for employing mixed methods, an understanding of its literature, and authors’ position, as well as a detailed explanation of both methods’ procedures (Creswell & Clark, 2017; Fetters & Freshwater, 2015; Fetters & Molina-Azorin, 2019; Harrison et al., 2020). Many empirical and methodological articles evaluated studies from developed countries that apply quantitative and qualitative methods together. Amongst which, some studies argued that the positivist paradigm is dominant since the qualitative method is sidelined (Giddings, 2006; Morris & Burkett, 2011), while Alise and Teddlie (2010) demonstrated the “quasi-mixed” studies that do not integrate the quantitative and qualitative methods. Further, the articles of Bryman (2006), Brown et al. (2015), Younes et al. (2019) revealed studies that apply quantitative and qualitative methods without referring to a rationale or indicating that it is a mixed-methods study.

In keeping with the trend in developed countries such as the U.S.A, U.K, and Canada, mixed methods has been increasingly used in Turkey, and the translations of mixed methods textbooks and guidelines of prominent scholars of the field are disseminated, although it is still limited. A recent master’s thesis quantitatively analyzes 50 journal articles selected from 257 studies that use mixed methods published between 2015-2019 in Turkish journals (Şan, 2020), which indicates an amount of mixed methods research in Turkey. There are also other evaluative studies, despite not many. Gökçek et al. (2013) evaluated journal articles in education, and Kocaman-Karaoğlu (2015) examined mixed methods in the instructional technology field, which demonstrated studies that do not refer to a rationale for mixed methods and do not use the term “mixed methods” while employing quantitative and qualitative methods. Kocaman-Karaoğlu (2015) suggested that this might be because of inadequate information about mixed methods methodology or various approaches in mixed methods. Besides, the understanding of qualitative methodology might affect mixed methods applications since, possibly, its philosophy is not broadly interiorized amongst Turkish researchers who use these methods (Toraman, 2021).

We view that there is a need to evaluate mixed methods research in Turkey as it is understudied. Related research demonstrates that it may not be well-understood and applied as a methodology, even though it is on the rise. Thus, we believe that evaluative studies in different contexts will help understand mixed methods and the qualitative methodology given the concerns on its comprehension in Turkey, which is elemental to employ mixed methods. In this vein, we aim to evaluate master’s degree theses in education since mixed methods is popular in the field. Although it is increasingly used in many fields, educational sciences are one of the first disciplines that apply mixed methods while scholars with related backgrounds have had a significant contribution to this methodological movement. Analyzing master’s degree theses with restricting in a recent year will present a picture of how mixed methods is employed within the context of graduate theses, which will shed light on the perception and training of mixed methods in Turkish universities. We believe that focusing on master’s theses suits our purpose as it will provide insight into the approach and applications of those in the beginning steps of a possible academic path.

This article includes a qualitative content analysis of master’s degree theses of education departments in Turkish universities. We limited it to studies published in 2017 as it was the most recent year for the time. Without an objective to conduct a quality check or assess studies, we aim to address these questions:

- How using mixed methods is justified and conceptualized?
- How are qualitative methods applied in mixed methods research?
- What roles qualitative inquiry has in mixed methods research?

This article contributes to the field of mixed methods in two ways. First, it provides an insight into the applications of mixed methods in Turkey that we hope to affect the progress of the mixed methods methodology. Second, it exemplifies the usage of qualitative methodology, as it is a component of mixed methods but appears under the influence of the quantitative paradigm as several studies propound. It will also help draw attention to the qualitative methodology and its philosophy for its development in Turkey.

In this article, we will first detail the methodology of our study and then describe the analysis themes, including justification, conceptualization, and qualitative inquiry in mixed methods studies. In the following section, we will discuss the results based on mixed methods’ identity, methodological rigor, and the dominance of the quantitative paradigm. Finally, we will conclude the article with our suggestions.

## 2. METHODOLOGY

This study is based on qualitative methodology and an interpretive approach. As Berg (2000, p.3) defines, qualitative research investigates “the meanings, concepts, definitions, characteristics, metaphors, symbols, and description of the things,” while quantitative studies mainly focus on counts and measurements. What is germane to qualitative inquiries are words more than numbers (Bryman, 2012). Qualitative researchers assert larger knowledge claims based on their endeavor to understand the context (Tracy, 2020). Thus, we attempt to go beyond numbers and make sense of why and how authors use mixed methods and qualitative methods. We see that concepts, definitions, and descriptions pertinent to mixed methods are essential to explore for this study. Also, we hold the interpretive paradigm that researchers utilize quotes and themes for substantiating different perspectives (Creswell, 2007). Put another way, what is important for this article is the authors’ understanding and conceptualization of mixed methods, which underpin our evaluation and interpretation. As a corollary to this approach, we employ qualitative content analysis, including systematic coding phases, to reach a subjective understanding of an issue (Hsieh & Shannon, 2005).

We applied a purposeful sampling strategy for the data generation. Widely used in qualitative research, purposeful sampling strategies are to select information-rich samples for the study’s aims (Palinkas et al., 2015). It is a non-random sampling strategy based on the idea that specific categories of individuals may bring significant contributions and perspectives to the phenomenon of interest (Robinson, 2014). Initially, our purpose was to identify and select master’s degree theses of various departments in Turkish universities published in 2017, using quantitative and qualitative methods combined. We modified the structure and content, limiting it education for a particular focus on the field concerning that mixed methods are broadly used in educational sciences.

To that end, we utilized the *Thesis Center Database of Council of Higher Education* (In Turkish: *Yükseköğretim Kurulu Başkanlığı Tez Merkezi*) as the data source to reach the master’s theses. *Thesis Center Database of Council of Higher Education* is the official online open-access repository that gathers theses and dissertations of Turkish universities on a website. This repository allows keyword search amongst theses and dissertations’ abstracts, limiting them to departments, years, and language.

The high quantity of mixed methods research in the database required us to limit the number of the studies to a plausible number for content analysis. For instance, searching “karma yöntem” (mixed methods in Turkish) in abstracts of the master’s theses in the department of educational sciences, published between 2010-2017, shows 75 results while searching “karma yöntem” in all social sciences master’s theses’ abstracts brings 387 theses published between the same period, which indicates a significant percentage of theses in educational sciences. Restricting it to the master’s theses of the department of educational sciences in 2017, we formed our sample by doing English and Turkish keyword searches related to mixed methods in theses’ abstracts and then ensured that these studies apply quantitative and qualitative methods. Keywords *karma yöntem* (mixed methods), *karma araştırma* (mixed research), *qualitative and quantitative*, *quantitative and qualitative*, *nicel ve nitel* (quantitative and qualitative) and *nitel ve nicel* (qualitative and quantitative) brought 11, 6, 1, 2, 2 results subsequently, which composes our sample.<sup>1</sup> Hence, including the studies published in 2017, this study’s sample comprises 28 master’s theses of the department of educational sciences from 20 universities in Turkey. Three theses are in English, and the rest are in Turkish. Further, 15 amongst 28 master’s theses are in the subfields of educational sciences;

- Nine theses are from the Department of Educational Programs and Teaching,
- Two theses are from the Department of Educational Administration and Inspection,
- Two theses are from the Department of Educational Administration, Inspection, Planning, and Economy,
- One thesis is from the Department of Educational Administration,
- One thesis is from the Department of Psychological Counseling and Guidance.

For the analysis, our chief focus is the methodology sections of the master’s theses. We applied qualitative content analysis to classify qualitative material within a coding frame (Schreier, 2012). The deductive content analysis starts with pre-prepared categories and theoretical framework (Hsieh & Shannon, 2005), while inductive content analysis begins with open-coding during which researchers have an “empty mind.” (Elo & Kyngäs, 2008). Utilizing both approaches is possible as deductive and inductive content analyses are not mutually exclusive (Kondracki et al., 2002). Before starting, we had preliminary evaluation criteria that included philosophy and reason for using mixed methods, sampling, integration, and design of the studies. After employing open coding to the theses in our sample, we considered seven themes that our analysis is based on: Rationale, Definition and Naming, Model and Design, Sampling, Data Collection, Data Analysis, and Ethics. These themes are about the main procedures of a research design and reasons for applying mixed methods. For this article, we finally integrated them into three themes: Justification, Conceptualization, and Use of Qualitative Inquiry, while winnowing some, given our primary purpose to describe and discuss how authors justify and conceptualize mixed methods and how they use qualitative methods. It is hence

<sup>1</sup> The keywords that did not give a result in search are *çoklu metot* (multiple methods), *karma desen* (mixed design), *karma metot* (mixed methods), *çoklu yöntem* (multiple methods), *mixed method*, *mixed methods*, *mixed research*, *mix method*, *mix methods*, *multimethod*, *multimethods*, *mix research*, *triangulation*, *multi research*, *multi-research*, *üçgenleme* (triangulation), *niceliksel ve niteliksel* (quantitative and qualitative), (qualitative and quantitative).

aply to define our qualitative content analysis in between deductive and inductive approach. We utilized the NVivo 12 software, for coding and the analysis.

It is also imperative to note the ethical measures we took. *Thesis Center Database of Council of Higher Education* is an open-source that authors can block or remove access to their thesis and dissertations if they do not consent. We used codes (T1, T2, T3...) to refer to the theses to provide anonymity and ensure authors' confidentiality while not revealing any association of individuals with the data. We also had a university ethics committee approval for our study.

### 3. FINDINGS

Our findings are based on three themes that concern justification and conceptualization of mixed methods and the use of qualitative methods. Indeed, the reasons authors apply and define mixed methods, how they organize and reflect the research procedures, including the sampling, data collection, data analysis phases, are elements that we integrated into these themes to explicate our primary focus. Meaning, we attempt to describe how the authors present vague reasons for employing mixed methods while giving a secondary role to the qualitative inquiry; and investigate the conceptualization of mixed methods within quantitative models and as a model itself. In our last theme, we investigate qualitative methods, which appear as an extension to the quantitative dimension, and demonstrate the quantification of qualitative data. We present our themes with examples from the theses, and it is essential to note that most of the quotations are translated from Turkish.

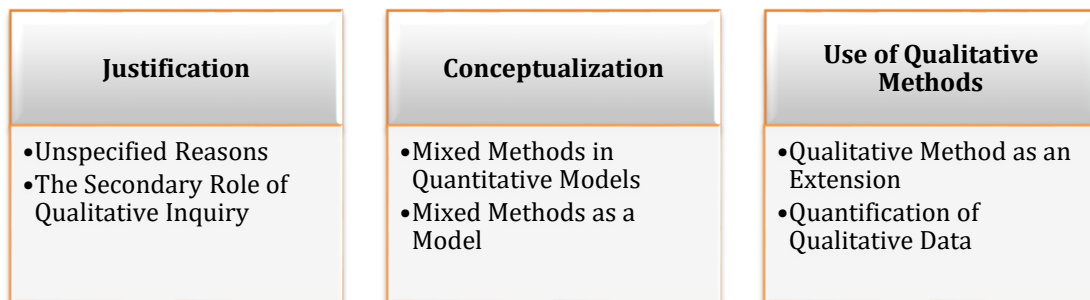


Figure 1. The themes and sub-themes of the analysis

#### 3.1. Justification

The way authors reason using quantitative and qualitative methods together is significant to understand mixed methods' rationales. These rationales may also include references to social science approaches, philosophies, or paradigms. Another associated issue is the use of research questions which also establishes or implies a justification for applying mixed methods whose importance is underscored by various scholars. A solid mixed methods research question or an objective is elemental for a robust mixed-methods inquiry, meaning that such questions dictate integration and how the methods will be used (Tashakkori & Creswell, 2007).

This theme is about how the authors justify employing quantitative and qualitative inquiries and their position and references to the qualitative method's role. It is safe to say that studies that refer to a direct rationale for employing mixed methods is few, which is to say, five theses amongst the twenty-eight refer to a specified reason for employing the mixed methods. By way of example, T1 applies mixed methods to "complement the weakness of quantitative findings with qualitative findings," T2 aims to "improve the reliability" by using both methods, T28 utilizes mixed methods "to have a better and holistic understanding" while T29's aim is "complementarity." In addition, T16's purpose is to balance both methods' limitations and provide a better understanding via quantitative and qualitative methods together. Besides, T2 is the only thesis that refers to paradigms of two methods for justification; that is, the author utilizes positivist and "anti-positivist" paradigms "to improve the quality."

We also identify two prominent issues: unspecified reasons for using mixed methods with research questions that are not specifically designed or expressed for a mixed-methods study and the secondary role of the qualitative inquiry.

##### 3.1.1 Unspecified Reasons

Specifying the reason for using mixed methods helps methodological clarity and rigor. However, ten theses do not cite a purpose for using quantitative and qualitative methods together in the study. Unspecified reasons also concern definitional and vague references to the rationales and reasons for using the methods together without indicating its relation to the study's purpose and how it helps the inquiry.

*"According to Creswell and Piano Clark, mixed methods involve the philosophical assumptions that guide managing the data collection and analysis procedures by combining the quantitative and qualitative approaches in many stages of the research process. They emphasize that the main premise of mixed methods is using quantitative and qualitative*

*data. It also helps to understand a research problem much better than a single method. On the other hand, they defined the explanatory design as that researchers seek specific results in an extra inquiry within quantitative research.” (T3)*

T3 indirectly refers to the mixed methods' use to understand better a research topic that a single-method study cannot elicit as much. The author investigates the “level of burnout” of primary school teachers and managers. Under the “Research Model” section, T3 refers to utilizing an “exploratory” design for the study.

*“Mixed methods research applies multiple approaches seeking answers to the research questions. Mixed methods, in many cases, does not aim to validate an opinion or support it. It instead aims to develop an understanding of the case.” (T12)*

T12, which inquiries about principals' competence in evaluating teachers' performances by comparing their view quantitative and qualitatively, does not directly refer to a mixed methods' rationale for the study. However, it refers to the advantages of using mixed methods, including its help to understand the research problem. The author also marks the study using the “triangulation design,” which is identified as a “method” within mixed methods under the “Research Model” of the method section.

*“This research is structured according to the sequential explanatory design. Mixed methods research uses quantitative and qualitative research techniques in sequence or concurrently (Tashakkori and Teddlie, 2003:11). The sequential explanatory design provides extra information to the quantitative research's results. In sequential explanatory design, quantitative methods are used first, and qualitative methods are utilized to analyze data from two methods separately. In the interpretation parts of the research, qualitative data enrich the quantitative data.” (T17)*

*“This research uses “mixed methods” to determine how secondary school teachers view the applications for elective courses. Mixed methods combine quantitative and qualitative methods, approaches, and concepts in a study or sequential study. Mixed methods studies enable presenting, analyzing, and gather cases in a framework (Baki and Gökçek, 2012). “Convergent parallel design” is used for this study.” (T6)*

T17, which inquiries about the university students' trauma experiences, does not refer to a specified reason for using the methods, but the author points out that the sequential explanatory design provides “extra information” for the quantitative side. T6, furthermore, has a vague reference to the reason for using mixed methods. Meaning, the authors do not explain how and why using two methods functions to determine the “views” of teachers.

These examples demonstrate the indirect and vaguely stated purposes for employing quantitative and qualitative studies, which is an issue for methodological clarity and rigor. Besides, these theses do not include any reference to a social science approach, philosophy, and paradigm that justifies or bolsters using quantitative and qualitative methods in tandem, which hinders understanding how and why mixed methods is founded in methodological terms.

### **3.1.2 The Secondary Role of Qualitative Inquiry**

Another facet of the justification of using two methods is what reasons authors hold for applying qualitative research and its role. Qualitative research appears to have a secondary role that is justified to support, enrich, deepen, and better understand quantitative inquiry. T28 is the only thesis that refers to the “higher priority of qualitative methods” as an action study. The other theses that refer to the equal importance of methods are T5, which defines the study as “pure form due to the relatively equal weight” given to the quantitative and qualitative dimensions, and T9 that refers to its convergent parallel design, which the author marks the “equal priority” as a characteristic of this design.

*“This research employs explanatory-mixed methods. In this method, firstly, quantitative data is collected, and then it is analyzed. Later, these analyzes are further re-explained in more detail with a qualitative inquiry. It is re-explained in detail (Creswell, 2013, p.15). For this study, the quantitative side is supported by qualitative data after the quantitative data collection.” (T4)*

*“The quantitative analysis demonstrated that the inspection always contributes to the administrators' professional development. Therefore, a second step is needed for further understanding of the results of the quantitative analysis.” (T11)*

T4, which evaluates the principals' “effective listening skills” based on teachers' views, defines a supportive role to the qualitative inquiry by identifying the study's method as “explanatory- mixed methods.” Interrogating the educational inspectors' role on the professional development of primary school administrators, T11 specifies the study's design as “explanatory sequential.” The author justifies conducting a qualitative inquiry as a second step to understand the quantitative results further.

*“Thus, in connection with the tenth sub-question of the study and the research question, it can be concluded that the students perceive the PPP (Presentation Practice Production) as effective teaching that enables learning English in a faster, good, and comprehensive way together with providing positive attitude towards English classes. These results obtained with the qualitative data analysis can be conceived to support the quantitative analysis results shown above.” (T14)*

*“The numeric data is supported by the verbal data in this research. The experts' and teachers' views on the math curriculum adopted from the 2013-2014 academic year are determined with the curriculum evaluation form and interview form. Therefore, it is a descriptive study.” (T23)*

Investigating the effect of the PPP technique on fourth-class students, T14 refers to the supportive function of qualitative results. The author has a sequential design in which qualitative inquiry follows the quantitative study. T23 employs the qualitative method to support the numeric data, as the author stresses, and the study does not inform the inquiry sequence for this research about the curriculum evaluation of elementary school mathematics classes.

*“This research has a “Concurrent and Dominant Status” design. Quantitative and qualitative data are collected concurrently, and this research attaches more importance to the quantitative analysis and its interpretation.” (T7)*

Concurrently gathering and generating the quantitative and qualitative data, T7 interrogates the academic success and social skills of children of different ages who start primary school. The author emphasizes that the study is quantitative-dominant, which gives a limited role to the qualitative side.

The authors justify using the qualitative method for its supportive role or help understand the research problem in these examples. Further, explanatory sequential designs typically give weight to the quantitative data as T4 and T11 exemplify such design, and T23 has a design in a similar vein while T7 refers to its quantitative-dominant method. It hence illustrates a secondary role of the qualitative method and the priority of the quantitative part in their methodology.

## **3.2. Conceptualization**

Conceptual usage and the way authors refer to mixed methods help to understand its methodological identity. At issue is the mixed methods' usage in quantitative models and referring to it as a model with different titles.

### **3.2.1 Mixed Methods in Quantitative Models**

Defining studies with quantitative terms such as the survey model or experiments and using quantitative and qualitative methods demonstrates a quantitative-dominant perspective. It also indicates that mixed methods is not viewed as a stand-alone methodology but appears to be a data collection technique.

*“A descriptive survey model is applied in this study to evaluate the candidate teacher training program based on the teachers' and advisors' views. The program is implemented for the first time in the 2015-2016 academic year. The model is also applied to offer various suggestions in light of the data obtained.” (T9)*

*“This study is designed based on the single survey model, which is a type of general survey model. The survey model is the research approach that aims to describe an existing or case in the past in which an incident or an object is the topic matter.” (T15)*

*“This study is a survey model research. The survey model is the research approach that aims to describe an existing or case in the past as it is or was (Karasar, 2005, p.77). Mixed methods is applied for the data collection.” (T16)*

Using a convergent parallel design, T9 defines the study under the descriptive survey model” T15, which examines the fourth-grade science class's curriculum, identifies the study model along similar lines without a reference to the mixed methods or designs. Investigating the secondary school students' critical thinking skills, T16 considers the mixed methods as the data collection method within its survey model while using the convergent design of mixed methods.

*“In this research, the sampling, which represents the information technology teachers and elementary school students in Ankara, is the teachers of the information technology, fifth and sixth-grade students of 11 elementary schools in A, Ç., E., K., M., and Y., which are central districts of A.. Thus, this is a general survey model research.” (T24)*

*“This study applies the experimental design with the pre-test post-test control groups. The real experiment model is viewed as scientifically the most valuable experiment model.” (T26)*

Having no reference to the mixed methods and its designs, T24 applies quantitative and qualitative methods within a general survey model to inquire about teachers' and students' views about the information technologies and software. T26, which is

about the “Puppet Model” in English Teaching, does not refer to the mixed methods while using the experimental design that involves quantitative and qualitative dimensions.

These studies do not employ the mixed methods through a methodological lens; they rather use and consider it as a combination of data collection techniques within quantitative survey models or experiments. Examples of these that do not refer to the mixed-methods-related terminology also have a quantitative-dominant perspective based on quantitative models such as surveys and experiments.

### **3.2.2 Mixed Methods as a Research Model**

A further point is the studies that refer to the mixed methods as the research model. It demonstrates a conceptual vagueness in mixed methods’ methodological identity.

*“The Mixed Research Model is applied in this research. Both quantitative and qualitative data are collected in this research using quantitative and qualitative research methods concurrently or sequentially in mixed research models (Creswell, 2013, p.14-16).” (T14)*

*“This research uses the mixed approach. It draws on explanatory design applying the quantitative method in the first phase and the qualitative method in the second phase.” (T3)*

*“A mixed-methods design, in which the quantitative and qualitative research designs are used together, is applied for this study, investigating the education inspectors’ contribution to elementary school principals’ professional development.” (T11)*

T14 uses the term Mixed Research Model that involves qualitative and quantitative methods, while T3, under the “Research Model” sub-topic, refers to a mixed approach instead of mixed methods. T11, furthermore, explains the design of the study, which is identified as a mixed-methods design, under the “Research Model” section. The differences in naming mixed methods and considering it as a model amount to a conceptual ambiguity. Further, it also implies that the authors view mixed methods as a part of a model rather than a methodology.

## **3.3. Use of Qualitative Methods**

This theme is about the use of qualitative methods, including sampling, data generation, and analysis procedures. Of particular concern is the quantitative-dominant practice stemming from applying qualitative methods in the form of “extension” to the quantitative dimension and presentation of results with quantification and frequencies that imitate the elements of quantitative methodology.

### **3.3.1 Qualitative Method as an Extension**

How authors design and conduct the qualitative inquiry provide insights into methodological viewpoints on the qualitative research. Whether the studies inform about the qualitative procedures, including sampling and data collection, is essential for evaluating the clarity and rigor.

*“Sixty-five English teachers in the M. district of A. form the study group of the research.” (T21)*

*“The first section of the survey addresses the demographic characteristics, while the second section has ten items of 5-Level Likert Type. On the other hand, the second scale is the interview form that comprises open-ended questions to have the English Language Teachers’ opinions on using social media for teaching English.” (T21)*

Investigating the social media’s effect on English teaching, T21 addresses two scales for data collection and generation for the study’s quantitative and qualitative sides. Having no reference to any sampling method, the author employs quantitative and qualitative methods for the same “study group.” A “scale” for the study’s qualitative dimension suggests a quantitative perspective on the qualitative method.

*“Personal Information Form and Foreign Language Achievement Test are applied for data collection in the research. The process of preparing these forms is concluded after receiving the opinions of specialists in the field.” (T26)*

*“The study’s qualitative data is obtained with four open-ended questions added to the candidate teacher and advisor teacher surveys.” (T9)*

T26 refers to achievement tests for data collection, but there is no reference to the qualitative inquiry procedures except the information in the abstract that informs about the “written evaluation forms,” which is used for the qualitative dimension. T9’s data collection procedures, on the other hand, include open-ended questions attached to the survey, which seem to be answered

in a written way as there is no information about the qualitative data generation process. Investigating the candidate teachers' training, the author employs criterion sampling, having the same sample group.

*"The quantitative and qualitative approaches are applied together to collect data for the research. The quantitative data is obtained by "Evaluation of the Elective Course Implementation Scale," while the qualitative data is obtained by the open-ended question at the end of the scale." (T6)*

*"The answers of the teachers to the open-ended questions are transferred to the computer. Content analysis is employed to the answers, which are separated into several themes. These themes are detailed under the qualitative findings section." (T15)*

In a similar vein, T6 also has a scale that ends with an open-ended question for qualitative data, applied to the single-sample group selected with "stratified sampling," as the author refers. T15, on the other hand, employs a survey with open-ended questions attachment while having no information about the qualitative data generation process.

These examples indicate that qualitative inquiry is in the shape of an extension to the surveys and scales applied to the same study groups or samples, with limited or no information about the qualitative method's procedures. It shows a quantitative-dominant outlook for these inquiries, in which methodological rigor and clarity are of an issue, particularly for the qualitative sides.

### 3.3.2 Quantification of Qualitative Data

Another significant issue is quantifying qualitative data for results and conclusions without the notions of the qualitative methodology, which is relevant to the quantitative-dominant perspective. It is not to argue that qualitative analyses cannot refer to frequencies, percentages, and numbers, but thematic and content analyses in these examples are more akin to the quantitative text analysis:

*"For the sub-theme of "informing," the most delivered opinion is that the administrators, advisors, and principals are not knowledgeable enough (8%). For the "evaluation" theme, 2.9% of the candidate teachers stated that the evaluations are unjust. 6.9% of the candidate teachers who expressed their opinion on the topic said that the training process is unnecessary, whereas 6.3% of the candidate teacher stated many uncertainties in the process. These findings show that the candidate teachers are not well-informed about the process and experience uncertainties in this period." (T9)*

*"Pre-prepared interview questions are asked to 26 teachers who participated in the study, and notes are taken by the researcher. Collected data is reviewed and analyzed. The data is gathered into relevant categories, and the answers are sorted based on the frequencies. Then, the associated data is interpreted." (T7)*

T9 applies content analysis for the qualitative inquiry, reporting frequencies and percentages under the "Qualitative Findings" sub-section, and the author interprets the data according to these figures. T7 also employs content analysis for the qualitative dimension, referring to the frequencies without discussing the qualitative findings in the discussion section.

*"The answers to the "Please specify if you have any other points about the importance of the elective courses, problems in the application and solution suggestions" are coded and organized into themes on tables. The views are categorized into three groups, and themes are formed with codes under each." (T6)*

*"Frequency numbers, word maps, and word trees formed with the word search about the answers to the open-ended questions are demonstrated in this section of the study." (T21)*

*"As the table indicates, the most given answer by teachers to "Do you use social media platforms such as Facebook, Twitter, Skype and WhatsApp for teaching English?" question is "Yes I use." 19 of the 31 teachers (61.29%) of public-school teachers say that he/she uses these platforms while nine teachers stated no use of such media. The word tree about frequencies and percentages for the third question is shown in Figure 4.11." (T21)*

T6's content analysis includes frequencies of the themes formed on the basis of teachers' views on the matter, and the author interprets the data according to the frequencies under the qualitative findings section. In the same vein, T21's content analysis is based on numbers and frequencies, and the author evaluates the data based on these quantitative figures.

## 4. DISCUSSION

### 4.1 Mixed Methods' Identity

Mixed methods appear in various uses in these studies. Applying mixed methods in quantitative models such as surveys and experiments while using it as a data collection technique and its usage as a model, approach, or design; brings the mixed



methods' conceptual and methodological identity into question. We underscored the institutionalization of mixed methods in recent decades with the generic name "mixed methods." Although there have been many definitions and titles of mixed methods, it is argued to have distinctive components that embrace multiple paradigms (Greene, 2008), and there is a methodological and conceptual agreement on some of its characteristics (Timans et al., 2019), which includes an emphasis on integrating quantitative and qualitative results as Fetters (2018), Mertens et al. (2016) and Creswell (2015) stress. Even though Tashakkori and Teddlie separated the mixed models and mixed methods based on the integration status, they removed this distinction in later studies, arguing that "mixed methods" studies have integration in all stages (Tashakkori & Teddlie, 1998; Teddlie & Tashakkori, 2006). That is to say, mixed methods has been crystallizing as the third methodology with its characteristics, but studies referred under the "Conceptualization" theme do not take it as a methodology; rather, it appears as a component of quantitative models or they consider it as a model. Also, mixed methods' development with its conceptual acceptance and growing emphasis on integration indicates a more systematized approach that these studies do not reflect in the conceptual sense.

More to the point, a substantial component of mixed methods identity is how qualitative methodology is perceived and applied. Karasar (2016), to whom several authors refer to their methods section to explain their research models, does not believe in the distinction between quantitative and qualitative methods where he suggests two research models: surveys and experiments. As we illustrated in the findings section, several authors refer to survey and experiment models to define their studies using these references. This approach thus influences how authors see using different methods, which instead views the qualitative method as a data collection technique.

Mixed methods' acceptance and identity is closely related to the careful consideration of how qualitative research is viewed, given that the mixed methods methodological movement emphasizes the role of qualitative methods and their applications. Put differently; mixed methods is beyond using quantitative and qualitative methods; it requires rigorous use of methods while integrating and interpreting the findings obtained from both methods (Creswell, 2015). Thus, it is apt to differentiate it from a model, method, approach, or design. A methodology is an overarching approach connected to a paradigm or theoretical framework (Mackenzie & Knipe, 2006), encompassing philosophies, postulations, methods, and techniques (Given, 2008). Understanding the quantitative and qualitative methodology and adapting them to research design accordingly is crucial for implementing mixed methods.

## 4.2 Methodological Rigor

Another essential element is the methodological rigor in mixed methods and, particularly, in employing qualitative methods. Evaluating the studies from the rigor perspective is important to understand how authors reflect upon mixed methods and qualitative elements. We exemplified the studies that do not explicitly state their rationale for using mixed methods and theses that do not refer to qualitative methods' procedures. Several studies discussing checklist, guidelines, and quality for conducting mixed methods study mark the importance of clearly defining the rationale of using mixed methods and the procedures of both methods (Creswell & Clark, 2012; Fetters & Molina-Azorin, 2019; Harrison et al., 2020; O'cathain et al., 2008; Wisdom et al., 2012). We underlined that we do not apply a quality check to the studies, but these guidelines and checklist are helpful as a blueprint for a mixed research design and are helpful for reflection upon the research process, although it carries the risk to discourage and restrict researchers in a framework with an overload of criteria. What matters for us is their function to draw attention to mixed methods components, which requires understanding each methodology's role, and the studies we exemplified have vague foundations and research process, which makes rigor perspective accommodating for our evaluation.

In particular, explicitly reporting procedures, including research design, method, and conclusions, are what qualitative inquiries should aim for rigor (Leung, 2015). Indirect, unspecified rationales for using mixed methods and vague reporting of the qualitative method procedures in the theses are therefore problems for the methodological rigor. The qualitative side of the issue, on the other hand, also relates to the quantitative paradigms' dominant role in the theses that do not consider the qualitative side to the same extent.

## 4.3 The Dominance of Quantitative Paradigm

The way authors justify and use qualitative methods demonstrates a strong leaning toward the quantitative paradigm in related categories. The qualitative sides are given the secondary role, applied as an "extension" to the quantitative inquiry with the qualitative analysis parts in a more "quantitative" fashion. Mixed methods' usage in quantitative models also reflects a quantitative-centric perspective. Several papers point out the positivist echo in mixed methods before; Gidding (2006) remarks the dominance of positivist approach in mixed methods research, while Morris and Burkett (2011) argue that studies they analyze represent the "enhanced quantitative paradigm" where the qualitative dimension is used to bolster the quantitative paradigm. In the same vein, with the rigor issues specific to the qualitative inquiries, qualitative methods' secondary role in quantitative designs embodies the quantitative paradigm's dominance in our examples. We may define these studies as *extended quantitative inquiries* due to the strong influence of the quantitative paradigm in which qualitative methods function more as a data collection technique.

Moreover, the “Quantification of Qualitative Data” category exemplifies the qualitative analyses that reflect the quantitative paradigm’s dominance. Toraman (as cited in Toraman, 2021) also stresses that quantification of qualitative data and presenting theme frequencies are common practices in mixed-methods studies in Turkey, which might stem from the lower acceptance of the qualitative paradigm. It might be linked with methodological training and education in Turkey, as we see it in the master’s thesis.

One should also note the difference between quantitative and qualitative content analysis. The qualitative content analysis differs from quantitative content analysis with focusing more on latent meaning with an interpretive outlook (Schreier, 2012); hence introducing frequencies and quantifications without employing an interpretive approach can be classified in terms of the quantitative content analysis, which better represents the analysis method of our examples (Barkçin, 2019).

## 5. CONCLUSION

We attempted to answer our research question about how mixed methods is justified and conceptualized by arguing that mixed methods’ do not appear to have gained its identity in a methodological sense, while there are problems in rigor. About the usage and role of qualitative inquiry, we contend that the positivist paradigm is dominant, which sidelines the qualitative methodology, affecting how it is applied. As Toraman (2021) also calls for, it is essential to establish and continue a dialogue for mixed methods research in Turkey. Furthermore, we believe there is a need for dialogue amongst the qualitative researchers in Turkey to develop our understanding of its philosophy and methods, which are elemental to use in mixed methods research. In line with the results of our study, we suggest that administrators, academics, and researchers attach more importance to the methodological training and classes in universities, which should start from the undergraduate degree, to have increased knowledge and awareness about mixed methods and qualitative research. It is obligatory to take a course related to research methods in postgraduate degrees for students in Turkish universities, and it may be useful to extend this obligation to undergraduate degrees with a research methods course that also has a strong focus on mixed methods. We also hope that this article will encourage researchers and students to follow the international literature about mixed methods and qualitative research to open new avenues for research methodology.

### Research and Publication Ethics Statement

The authors hereby declare that they have not used any sources other than those listed in the references. The authors further declare that the authors have not submitted this article at any other journal for publication.

### Contribution Rates of Authors to the Article

The first author has a 70 percent contribution, and the second author has a 30 percent contribution.

### Statement of Interest

The authors declare that there is no conflict of interest.

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