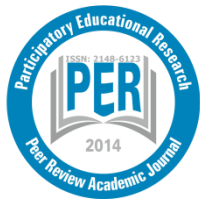TITLE: The Postgraduate Theses in ELT between 2019 and 2021: A Methodological Comparison

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PAGES: 43-63

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# The Postgraduate Theses in ELT between 2019 and 2021: A Methodological Comparison

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The Covid-19 pandemic has affected the scientific research in educational sciences as almost all aspects of life since it broke out in China in late 2019. Research in English Language Teaching (ELT) has run across several problems, much like other science domains. Researchers may have encountered difficulties while trying to reach volunteers in their studies due to psychological or physiological complications. On the other hand, distance, or flexible face-to-face education in all the educational cycles may have led some researchers to spend more time conducting their studies. Considering these possible effects of the pandemic, the main purpose of this study is to explore ELT researchers' methodological tendencies in their master's theses and doctoral dissertations published pre (2019) and while (2020, 2021) pandemic in Türkiye. The sample consisted of 806 master's theses and 128 doctoral dissertations. By using a grid and checklist, data was collected qualitatively by implementing the qualitative document analysis method. The collected data was analyzed quantitatively by using descriptive statistics. Although the number of theses and dissertations decreased during the pandemic, the findings indicated that researchers conducted more in-depth analyses. The study has significance for further researchers in that the findings have shown that they may need to do their research planning in a more adaptable way and have alternative plans in case of similar unusual situations on a large or small scale, like the pandemic.

## Introduction

In Türkiye, an English as a foreign language (EFL) country, the number of postgraduate level theses and dissertations published in the field of English Language teaching (ELT) has increased considerably in the last two decades. The researchers of the theses and dissertations who must spend this time as effectively as possible may inevitably face some difficulties. These difficulties are sometimes caused by researchers themselves, such as psychological factors,

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health problems, etc., and sometimes by external factors like family, work environment, etc. Covid-19, which broke out in Wuhan, China in October 2019, affected scientific studies besides affecting other aspects of life all over the world (Yorulmaz & Aydoğdu, 2021). Some researchers might have been infected with the coronavirus after the beginning of the pandemic. Researchers' getting infected with the coronavirus impacted the optimum conditions for research (Shaukat, 2020). The pandemic has both physical and mental health implications because some people were afraid of being infected and dying; some think that the world would no longer be the same (Rosenbaum, 2020; Alghamdi, 2021). With this psychology, in such an environment where people's basic needs and priorities change, the focus required for a researcher to carry out his academic studies goes misdirected.

Researchers studying in graduate programs had to stay away from their professors and supervisors because of distance education (Erischsen et al., 2014; Zahneis & June, 2020). The inability to be actively involved in the educational environment and not having collaboration with the supervisors directly were the factors that reduce the motivation of researchers. In this context, researchers may have had to adapt or change the methodological aspects of their theses and dissertations because of the factors stemmed from impaired optimum context for their research. Therefore, researchers' preferences of patterns such as research method, design, data collection, sample, and data analysis in their theses and dissertations may have varied comparing pre and while pandemic periods. In this respect, this study examined methodological tendencies by by analyzing the methodological aspects of ELT theses and dissertations published in 2019 (pre-pandemic), 2020, and 2021 (while pandemic) Türkiye.

### *Purpose of the Study and Research Questions*

The main purpose of this study was to make a contrastive analysis of the methodology parts of the theses and dissertations published in 2019 (Pre-pandemic), 2020, and 2021 (While-pandemic) in the field of ELT to reveal whether there has been a difference in researchers' methodological tendencies in their master's theses and doctoral dissertations. In the light of the main purpose of the study, the following two research questions with eight sub-questions emerged:

(1) What were the pre and while pandemic descriptive statistics of master's theses and doctoral dissertations in ELT?
(2) How did the pre and while pandemic master theses and doctoral dissertations differ methodologically?
  (2.1.) How did master theses and doctoral dissertations differ regarding research method?
  (2.2.) How did master theses and doctoral dissertations differ regarding research design?
  (2.3.) How did master theses and doctoral dissertations differ regarding data collection tool?
  (2.4.) How did master theses and doctoral dissertations differ regarding data analysis method/calculation?
  (2.5.) How did master theses and doctoral dissertations differ regarding the sampling method?
  (2.6.) How did master theses and doctoral dissertations differ regarding sample group?
  (2.7.) How did master theses and doctoral dissertations differ regarding sample size?
  (2.8.) How did master theses and doctoral dissertations differ regarding data analysis software?

*Literature review*

In this section, studies both in the field of ELT and different fields, focusing on the similar scope of this study, striving to answer certain research questions about theses and dissertations, and research articles were pointed out chronologically in order to follow and register the development and details of the theses. These studies tried to investigate a set of research within a certain period with regard to different variables. Firstly, in their qualitative study, Tavsancil et al. (2012) aimed to investigate post-graduate studies at the Institute of Educational Sciences. By conducting the content analysis method, they involved 666 master's theses and 186 doctoral dissertations via stratified sampling method. The results of their study showed that post-graduate studies mostly were conducted at the primary school level and data was mostly collected from students. Doctoral dissertations mostly studied academic achievement, whereas, in master's theses, the opinions of teachers and students were researched. One of the most important results of their study related to hereby study was a survey-based research design mostly used in post-graduate research.

Kirmizi (2012) conducted a study on 212 theses written between the years 2005-2010 to find out the research trends in ELT and which university the most theses are written. In his content analysis study, he found that (1) the most frequently investigated research trend in ELT was language skills, the second one was the teaching method, and the third trend was psychology and language; (2) Hacettepe University was the university with the most thesis written.

As a study outside Türkiye, Carter (2012) surveyed 52 master's degree theses written in 2008-2010 by using the content analysis method, in Canada. She tried to analyze the studies in terms of their research methods, instruments, statistical analyses, etc. The results revealed that the quantitative method was the most preferred research method; interviews and surveys were the most popular data collection instruments researchers preferred; in all the studies, descriptive statistics were used, and t-tests were the most common inferential test.

In another study conducted on theses, Özmen et al. (2016) examined 137 doctoral dissertations related to ELT written between the years 2010-2014. In his meta-analysis study, he based his research on four aspects including subject areas, design, sampling method, and setting of the studies. The results showed that the most studied subject areas were teaching English as a foreign language-related topic such as teaching language skills, learners and teachers, the use of language, etc.; the most used research paradigm was quantitative research design; the most used sampling methods were purposive or convenient sampling.

Yağız et al. (2016) reviewed 274 selected ELT-based research articles retrieved from 15 journals in the ULAKBIM database by adopting convenient sampling method. In their content analysis study, they implemented 'Article Classification Form' trying to find out the descriptive analysis of subjects, research design, data collection tools, samples, and data analyses of the studies. The results demonstrated that in the Turkish ELT context, researchers mostly used the quantitative research method, interested in language teaching and learning, the group range of the studies was 101-300, and mostly used data analysis method was descriptive statistics.

Şimşek and Dündar (2017) conducted their study which examined 54 post-graduate theses on textbooks written between 2001 and 2003 through the content analysis method to reveal several aspects of the theses. Findings related to the subject of this study revealed that after the mixed-method approach wasn't used mainly and qualitative studies were mainly based on document analysis of textbooks; some sample groups such as parents, publishers, school administrators, and publishers couldn't be involved in the samples of the studies at desired level or not; while

descriptive analysis generally contrasted learners and instructors views towards similar categorical patterns; innovative and experimental studies were never conducted and multivariate analyses were never implemented in the theses.

Another descriptive study examined the abstract sections of the studies related to ELT in Turkish Journal Park Academic (viz. Dergi Park Akademik) with the sample of 234 research articles. In their qualitative study, Cesur et al. (2018) revealed that researchers did not state mostly data analysis, sampling type, and the design of research in the abstract sections of their studies. They also found out that language teaching, curriculum, teacher education, and teaching materials were the topics mostly researched. Besides, according to the findings of their study, purposive and random sampling were mostly used sampling types and the recommendations studies were mostly integrated into the conclusion part.

Şişman et al. (2019) chose randomly and reviewed 270 studies from 1156 theses and dissertations written between 1999 and 2018, in the field of ELT. Adopting the document analysis method, they aimed to analyze the trends, sample sizes, methods, and the number of universities having studies in the field. The results of their study showed that researchers mostly studied the topic '*vocabulary*'; of all 63 universities having post-graduate education on ELT, İhsan Doğramacı Bilkent University had the most studies conducted (*f*=104); the participants generally ranged between 31-60; the mostly adopted research method was the mixed method.

Demir (2020) investigated 302 postgraduate studies including 58 doctoral dissertations and 244 master's theses on foreign language teaching education in Türkiye written between 1987 and 2017. He based his study on actor technique perspective. In his study he aimed to analyze the studies in terms of category, topic, setting, university and institute, language, methodology, finding, interpretation, conclusion, and suggestion. In addition, the methodology sections of the studies were analyzed regarding some subsections such as research method/design, sample, and data collection instrument. One can find a great many results from his holistic study; but the results concerning this current study in terms of methodological aspects of theses have revealed that qualitative method, experimental design, quantitative method, survey-based design, and mixed-method were the most used designs and methods in all the studies. Another finding of his study showed that learners, instructors, and documents/sources were used as the study sample. As for the data collection instrument, his study found out that the most used tools were questionnaires, tests, interviews, and scales. Lastly, findings related to the content of the studies demonstrated that the most studied topics in the theses and dissertations were "second language teaching, second language learning, second language education, motivation, primary education, student achievement, teaching methods, computer-assisted foreign language teaching, speaking skills, drama concepts" (Demir, 2020, p. 196).

In their bibliometric study, Yorulmaz and Aydoğdu (2021) conducted a study on theses published by researchers from 16 public research universities to investigate the differentiation in numbers before and during the pandemic. In their bibliometric designed study, their scope was all the theses and dissertations published in 2019 and 2021. The results of the study revealed that the number of master's theses and doctoral dissertations decreased from 21k to 8k, about 60.8%, in research universities.

Yavuz et al. (2021) aimed to reveal the profile of studies for distance education activities during the pandemic period. In their content analysis and bibliometric analysis study, they picked 220 studies from the database of Web of Science to analyze them regarding their methodology, sampling data collection, and analysis. The results reported that the studies mostly were

conducted by university students and the most adopted method was the quantitative research method. Questionnaire was the mostly implemented data collection tool and descriptive-quantitative analysis method was the most preferred data analysis type. They, also, concluded that in the pandemic period distance education was mostly co-authored studies.

Lastly, Topal et al. (2021) analyzed the studies published in Web of Science database in the field of distance education. In their bibliometric study, they aimed to investigate the effect of the pandemic on the studies related to distance education by focusing on researcher, publication, journal, institution, and country criteria using citation analysis. In the light of the findings of the study, they resulted that the pandemic has brought distant education a new vision.

As emphasized above, in and outside Türkiye, there have been several similar studies conducted in the field of ELT. These studies focused mostly on few aspects of the research, while there has been a holistic study conducted on many sections of the theses. However, there have been several gaps in the literature related to the aim of this study, (1) theses and dissertations written pre and while pandemic have not been analyzed yet, (2) the methodology section of theses and dissertations has not been studied holistically, (3) the sample size has not been enough comparing with the year interval of the studies.

## Method

### *Research Design*

An analysis on ELT researchers' methodological tendencies of the theses and dissertations published in 2019, 2020, and 2021 was the main purpose of the study. To achieve the main purpose, document analysis as a qualitative research method was mainly adopted. Documents provide a stable, exact, and coverage set of data in which researcher cannot intervene a sample in the collection process (Bowen, 2009). The document analysis method took advantage of content analysis methods. The content analysis enables researchers to observe human behavior indirectly through oral or written sources (Fraenkel et al., 2015). Content analysis is a systematic and scientific research method enabling researchers to unfold a fact objectively which needs to be clarified; its systematicity and objectivity make a study replicable and valid (Krippendorf, 2004). Moreover, content analysis is a method which can involve both quantitative and qualitative methods (White & Marsh, 2006). Regarding the overall methods, the research design of this study was *qualitative descriptive study design*. This design's main purpose is to provide a complete overview of specific events that people or groups of individuals have encountered and by adopting it a researcher can involve interviews, open-ended questions, observations, documents, etc. (Lambert & Lambert, 2012).

### *Sample*

The sample of the study consisted of 934 master's theses and doctoral dissertations published in ELT in 2019, 2020, and 2021 in Türkiye. (See Appendix 1). The sample included all the theses and dissertations of the research universe by accessing the CoHE Thesis Center database

Table 1. *The sample of the study*

|  | 2019 | 2020 | 2021 | Total |
|---|---|---|---|---|
|  | *f* | *f* | *f* | *f* |
| Type |  |  |  |  |
| MA | 348 | 231 | 227 | 806 |
| Ph.D. | 47 | 48 | 33 | 128 |
| Total | 395 | 279 | 260 | 934 |

When deciding on the sampling, *purposive sampling* was adopted as a non-probability sampling method. Purposive sampling is a kind of sampling method that a researcher prefers a group of the population depending on his/her judgement or prior knowledge (Fraenkel et al., 2015).

### Data Collection

To collect data, the researcher formed an excel worksheet for each year both for master's theses and doctoral dissertations. At the end of the formation of the worksheets, six different excel worksheets were formed out as *2019 MA, 2019 Ph.D.; 2020 MA, 2020 Ph.D.; 2021 MA, 2021 Ph.D.* In each worksheet, there were columns including a sequence number, thesis/dissertation number, title, and department; and rows including main criteria and sub-criteria. Even though in the literature there was a form to classify research papers (Sozbilir et al., 2012), the researcher decided that using such kind of form could be more time-consuming. That's why a more researcher-friendly instrument was needed. The researcher followed up the mentioned classification form, updated and formed the excel sheet by which the data was able to be coded while collecting it.

The theses and dissertations were analyzed by focusing on eight different criteria as research method, design, data collection instrument, data analysis, sampling method, sample group, sample size, and data analysis software. Among these criteria, there were various sub-criteria (f=100). For instance, under the criteria sampling type, there were ten sampling types as criterion sampling, saturation sampling, convenience sampling, purposive sampling, random sampling, snowball sampling, quota sampling, maximal variation sampling, and cluster sampling (See Appendix 2).

As for ethical considerations, any ethical approval for this study was not required. Such kinds of data as published biographies, newspaper accounts, and open-access studies do not require any type of consent. All the theses and dissertations involved within the scope of this study were open-access and thus publicly accessible data.

### Data analysis

Collected data was organized for data analysis to obtain frequencies, mean scores, and percentages of each sub-criteria. All frequencies were added up and separate tables were made for each main criterion. Descriptive statistics was adopted as the main analysis method for this study. In data analysis, descriptive statistics allow researchers to use the collected numerical data as a useful strategy to summarize and make clear the available data and provide a description of the research sample (Fisher & Marshall, 2009). Microsoft Office Excel 16.0 software was used for data analysis, to get the sum frequencies and percentages of each sub-criteria.

## Findings

### *Descriptive statistics of master's theses and doctoral dissertations pre and while pandemic*

Table 2. *Frequencies and percentages of ELT theses and dissertations published in 2019, 2020 and 2021 in Türkiye*

| | | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 2019 | | 2020 | | 2021 | | Total | |
| | Type | *f* | % | *f* | % | *f* | % | *f* | % |
| Theses and dissertations in ELT | MA | 348 | 43.18 | 231 | 28.66 | 227 | 28.16 | 806 | 86.30 |
| | Ph.D. | 47 | 36.72 | 48 | 37.50 | 33 | 25.78 | 128 | 13.70 |
| | Total | 395 | 42.29 | 279 | 29.87 | 260 | 27.84 | 934 | 100 |

Table 2 demonstrates the overall frequencies and percentages of the total number of theses and dissertations published in three years. Even though the number of doctoral dissertations increased in 2020 compared to 2019, the overall trend in frequencies and percentages of master's theses (2019 = 43.18% > 2020 = 28.66% > 2021 = 28.16%) and doctoral dissertations (2019 = 36.72% > 2020 = 37.50% > 2021 = 25.78%) was downward.

### *Methodological differentiations*

Table 3. *Percentages of methodological elements having linear or significant fluctuations in master's theses*

| | | 2019 MA | | 2020 MA | | 2021 MA | |
|---|---|---|---|---|---|---|---|
| | | *f* | % | *f* | % | *f* | % |
| Method | Qualitative | 50 | 14.45 | 29 | 12.45 | 48 | 21.15 |
| Design | Experimental Study | 87 | 22.89 | 54 | 20.69 | 30 | 11.67 |
| | Descriptive Study | 52 | 13.68 | 37 | 14.18 | 40 | 15.56 |
| | Not Mentioned | 97 | 25.53 | 51 | 19.54 | 41 | 15.95 |
| Instrument | Open Ended Questions/Surveys | 26 | 3.52 | 17 | 3.55 | 17 | 3.74 |
| | Video/Audio recordings | 15 | 2.03 | 14 | 2.92 | 18 | 3.96 |
| | Field / Observation Notes | 8 | 1.08 | 11 | 2.3 | 12 | 2.64 |
| Data Analysis | ANOVA | 70 | 7.11 | 74 | 9.41 | 70 | 9.56 |
| | Paired Samples T-test | 68 | 14.14 | 41 | 9.76 | 23 | 6.74 |
| | Kruskal-Wallis H Test | 29 | 6.03 | 27 | 6.43 | 25 | 7.33 |
| | Regression | 16 | 3.33 | 20 | 4.76 | 17 | 4.99 |
| Sampling Method | Convenience | 115 | 31.51 | 101 | 42.62 | 93 | 40.09 |
| | Purposive | 44 | 12.05 | 35 | 14.77 | 42 | 18.1 |
| | Random | 31 | 8.49 | 19 | 8.02 | 11 | 4.74 |
| Sample Group | Prep School/University EFL Learners | 120 | 29.63 | 83 | 31.09 | 72 | 27.48 |
| | Prep School EFL Instructors | 49 | 12.1 | 43 | 16.1 | 43 | 16.41 |
| | K-12 EFL Teachers | 50 | 12.35 | 39 | 14.61 | 43 | 16.41 |
| | Pre-Service EFL Teachers/ELT Students | 45 | 11.11 | 26 | 9.74 | 19 | 7.25 |
| | Materials/Books/Corpora/ Documents | 27 | 6.67 | 11 | 4.12 | 25 | 9.54 |
| | High School EFL Learners | 34 | 8.4 | 18 | 6.74 | 13 | 4.96 |
| | Middle School EFL Learners | 35 | 8.64 | 19 | 7.12 | 9 | 3.44 |
| Sample Size | Prep School/University EFL Learners | 16906 | 43.26 | 11794 | 38.07 | 8683 | 37.85 |
| | K-12 EFL Teachers | 5010 | 12.82 | 5679 | 18.33 | 5407 | 23.57 |
| | Pre-Service EFL Teachers/ELT Students | 5319 | 13.61 | 2969 | 9.58 | 1981 | 8.64 |
| | Prep School EFL Instructors | 1825 | 4.67 | 3911 | 12.63 | 3143 | 13.7 |
| | Middle School EFL Learners | 3679 | 9.41 | 1521 | 4.91 | 909 | 3.96 |
| Analysis Software | SPSS | 260 | 71.04 | 186 | 74.1 | 152 | 59.61 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Microsoft Excel | 10 | 2.73 | 9 | 3.59 | 11 | 4.31 |
| NVivo | 10 | 2.73 | 6 | 2.39 | 8 | 3.14 |
| MAXQDA | 6 | 1.64 | 4 | 1.59 | 11 | 4.31 |

Table 3 demonstrated that the usage of the qualitative method implemented in master's theses increased while pandemic (2019 = 14.45% > 2020 = 12.45% > 2021 = 21.15%). In master's theses the implementation of experimental study design tended to decrease (2019 = 22.89% > 2020 = 20.69% > 2021 = 11.67%) while the usage of descriptive study design increased while pandemic period (2019 = 13.68% > 2020 = 14.18% > 2021 = 15.56%); the rate of those who do not mention design in their master's theses decreased over the years (2019 = 19.54% > 2020 = 15.95% > 2021 = 25.53%). In master's theses, the implementation trend in video/audio recordings (2019 = 2.03% > 2020 = 2.92% > 2021 = 3.96%), field/observation notes (2019 = 1.08% > 2020 = 2.3% > 2021 = 2.64%) and open-ended questions/surveys (2019 = 3.52% > 2020 = 3.55% > 2021 = 3.74%) was upward while pandemic.

The usage trend in ANOVA (2019 = 7.11% > 2020 = 9.41% > 2021 = 9.56%), Kruskal-Wallis H test (2019 = 6.03% > 2020 = 6.43% > 2021 = 7.33%) and regression analysis (2019 = 3.33% > 2020 = 4.76% > 2021 = 4.99%) was upward; nevertheless, paired samples T-test implementation trend (2019 = 14.14% > 2020 = 9.76% > 2021 = 6.74%) was downward during the pandemic. The usage trend of the convenience sampling method (2019 = 31.51% > 2020 = 42.62& > 2021 = 40.09%) and purposive sampling method (2019 = 12.05% > 2020 = 14.77% > 2021 = 18.1%) was upward in the master's theses while random sampling method implementation trend (2019 = 8.49% > 2020 = 8.02% > 2021 = 4.74%) was downward. Master's students' trend in sample group choice was upward in prep school EFL instructors (2019 = 12.15% > 2020 = 16.1% > 2021 = 16.41%), K-12 EFL teachers (2019 = 12.35% > 2020 = 14.61% > 2021 = 16.41%), materials/books/corpora/documents (2019 = 6.67% > 2020 = 4.12% > 2021 = 9.54%) whereas it was downward in high school EFL learners (2019 = 8.4% > 2020 = 6.74% > 2021 = 4.96%), middle school EFL learners (2019 = 8.64% > 2020 = 7.12 > 2021 = 3.44), prep school/university EFL learners (2019 = 29.63% > 2020 = 31.09% > 2021 = 27.48%) and pre-service EFL teachers (2019 = 11.11% > 2020 = 9.74% > 2021 = 7.25%). In master's theses, K-12 EFL teachers (2019 = 12.82% > 2020 = 18.33% > 2021 = 23.57%) and prep school EFL instructors (2019 = 4.67% > 2020 = 12.63% > 2021 = 13.7%) selected as samples increased over the years whereas the numbers of prep school/university EFL learners (2019 = 43.26% > 2020 = 38.07% > 2021 = 37.85%), pre-service EFL teachers/ELT students (2019 = 13.61% > 2020 = 9.58% > 2021 = 8.64%), and middle school EFL learners decreased (2019 = 9.41% > 2020 = 4.91% > 2021 = 3.96%).

The trend in the usage of SPSS (2019 = 71.04% > 2020 = 74.1% > 2021 = 59.61%) in master's theses was downward while Microsoft Excel (2019 = 2.73% > 2020 = 3.59% > 2021 = 4.31%), NVivo (2019 = 2.73% > 2020 = 2.39% > 2021 = 3.14%) and MAXQDA (2019 = 1.64% > 2020 = 1.59% > 2021 = 4.31%) was upward.

Table 4. *Percentages of methodological elements having linear or significant fluctuations in doctoral dissertations*

| | | 2019 Ph.D. | | 2020 Ph.D. | | 2021 Ph.D. | |
|---|---|---|---|---|---|---|---|
| | | *f* | % | *f* | % | *f* | % |
| Method | Mixed | 30 | 63.83 | 28 | 58.33 | 17 | 51.52 |
| | Quantitative | 8 | 17.02 | 2 | 4.17 | 4 | 12.12 |
| | Qualitative | 6 | 12.77 | 15 | 31.25 | 8 | 24.24 |
| Design | Case Study | 6 | 11.54 | 9 | 15 | 6 | 15.79 |
| | Action Research Study | 1 | 1.92 | 1 | 1.67 | 4 | 10.53 |
| | Not Mentioned | 7 | 13.46 | 7 | 11.67 | 1 | 2.63 |
| Instrument | Scales/Surveys | 32 | 26.89 | 29 | 18.01 | 19 | 18.63 |
| | Checklists/Rubrics/Tables | 11 | 9.24 | 11 | 6.83 | 5 | 4.9 |
| | Video / Audio recordings | 2 | 1.68 | 6 | 3.73 | 6 | 5.88 |
| Data Analysis | Content/Thematic Content/ Document/Discourse Analysis | 27 | 55.1 | 35 | 43.75 | 21 | 43.75 |
| | Descriptive Analysis | 1 | 2.04 | 5 | 6.25 | 5 | 10.42 |
| | Grounded Theory Analysis | 0 | 0 | 4 | 5 | 4 | 8.33 |
| | Inductive Qualitative Analysis | 3 | 6.12 | 4 | 5 | 1 | 2.08 |
| | Independent Samples T-test | 6 | 6.32 | 10 | 12.05 | 13 | 20.31 |
| Sampling Method | Random | 2 | 3.77 | 3 | 5.66 | 3 | 8.11 |
| Sample Group | Pre-Service EFL Teachers/ELT Students | 17 | 26.98 | 9 | 14.52 | 8 | 18.6 |
| | Prep School EFL Instructors | 6 | 9.52 | 15 | 24.19 | 9 | 20.93 |
| | K-12 EFL Teachers | 8 | 12.7 | 5 | 8.06 | 5 | 11.63 |
| | Materials/Books/Corpora/Documents | 6 | 9.52 | 3 | 4.84 | 2 | 4.65 |
| | ELT Teacher Trainers | 4 | 6.35 | 2 | 3.23 | 1 | 2.33 |
| Sample Size | Pre-Service EFL Teachers/ELT Students | 3985 | 38.45 | 654 | 2.03 | 695 | 11.18 |
| | K-12 EFL Teachers | 1325 | 12.78 | 773 | 2.4 | 221 | 3.55 |
| | Prep School EFL Instructors | 819 | 7.9 | 587 | 1.82 | 1715 | 27.59 |
| Analysis Software | SPSS | 34 | 56.67 | 31 | 52.54 | 19 | 47.5 |
| | NVivo | 7 | 11.67 | 6 | 10.17 | 4 | 10 |
| | MAXQDA | 3 | 5 | 4 | 6.78 | 3 | 7.5 |

Table 3 demonstrated that the mixed method (2019 = 63.83% > 2020 = 58.33% > 2021= 51.52%) and quantitative method (2019 = 17.02% > 2020 = 4.17% > 2021 = 12.12%) implementation trend decreased whereas qualitative method usage (2019 = 12.77%) > 2020 = 31.25% > 2021 = 24.24%) increased in doctoral dissertations during the pandemic. In doctoral dissertations case study design (2019 = 11.54% > 2020 = 15% > 2021 = 15.79%) and action research design (2019 = 1.92% > 2020 = 1.67% > 2021 = 10.53%) implementation trend was upward; the rate of those who do not mention design in their doctoral dissertations decreased over the years (2019 = 13.46% > 2020 = 11.67% > 2021 = 2.63%). In doctoral dissertations, the usage of scales/surveys (2019 = 26.89% > 2020 = 18.01% > 2021) = 18.63%) and checklists/rubrics/table (2019 = 9.24% > 2020 = 6.83% > 2021 = 4.9%) as data collection tools was in downward trend while video/audio recordings implementation trend (2019 = 1.68% > 2020 = 3.73% > 2021= 5.88%) was upward.

The trend in using the descriptive analysis (2019 = 2.04% > 2020 = 6.25% > 2021 = 10.42%) and grounded theory analysis (2019 = 0% >2020 = 4% > 2021 = 8.33%) methods by doctorate students were upward while the implementation of content/thematic content/ document/ discourse analysis (2019 = 55.1% > 2020 = 43.75% > 2021 = 43.75) and inductive qualitative analysis (2019 = 6.12% > 2020 = 5% > 2021 = 2.08%) was downward, the implementation trend of independent samples t-test in doctoral dissertations was upward while pandemic in comparison with pre-pandemic (2019 = 6.32% > 2020 = 12.05% > 2021 = 20.31%).

The usage trend of random sampling in doctoral dissertations this trend was upward while pandemic (2019 = 3.77% > 2020 = 5.66% > 2021 = 8.11%). Doctorate researchers' trend in sample group choice in their dissertations was upward in prep school EFL instructors (2019 = 9.52% > 2020 = 24.19% > 2021 = 20.93%) whereas it was downward in choosing pre-service EFL teachers/ELT students (2019 = 26.98% > 2020 = 14.52% > 2021 =18.6%), K-12 EFL teachers (2019 = 12.7% > 2020 = 8.06% > 11.63%), materials/books/corpora/documents (2019 = 9.52% > 2020 = 4.84% > 2021 = 4.65%) and ELT teacher trainers as a research sample (2019 = 6.35% > 2020 = 3.23 > 2021 = 2.33%). In doctoral dissertations, the numbers of pre-service EFL teachers/ELT students (2019 = 38.45% > 2020 = 2.03% > 2021 = 11.18%), K-12 EFL teachers (2019 = 12.78% > 2020 = 2.4% > 2021 = 3.55%) as research samples decreased during the pandemic while and prep school EFL instructors increased (2019 = 7.9% > 2020 = 1.82% > 2021 = 27.59%).

In doctoral dissertations the implementation trend of SPSS (2019 = 56.67% > 2020 = 52.54% > 2021 = 47.5%) and NVivo (2019 = 11.67% > 2020 = 10.17% > 2021 = 10%) was downward while MAXQDA (2019 = 5% > 2020 = 6.78% > 2021 = 7.5%) was upward; (2) SPSS in master's theses was used more significantly than in doctoral dissertations; (3) in doctoral dissertations the usage of NVivo and MAXQDA was more than that of master's theses.

Table 5. *Mean scores of instruments, data analysis methods, sample size in master's theses and doctoral dissertations*

| | | 2019 | 2020 | 2021 | TOTAL |
|---|---|---|---|---|---|
| | | *M* | *M* | *M* | *M* |
| Instruments | MA | 2.12 | 2.07 | 2.00 | 2.07 |
| | Ph.D. | 2.53 | 3.35 | 3.09 | 2.98 |
| Data analysis methods | MA | 2.82 | 3.40 | 3.22 | 3.10 |
| | Ph.D. | 3.72 | 4.12 | 4.06 | 3.96 |
| Samples size | MA | 89.23 | 134.10 | 101.04 | 115.38 |
| | Ph.D. | 220.51 | 670.81 | 188.39 | 381.09 |

Table 5 demonstrated that regarding the mean scores of instrumentations in master's theses, the usage of instruments decreased in master's theses (2019 = 2.12 > 2020 = 2.07 > 2021 =2.00); the means scores showed that the number of tools used in doctoral theses was higher than master's theses (Ph.D. = 2.98 > MA = 2.07); (2) the diversity of data analysis methods in master's theses increased while pandemic compared to pre-pandemic (2019 = 2.82 > 2020 = 3.40 > 2021 = 3.22); the number of different data analysis methods used in doctoral dissertations increased while pandemic compared to pre-pandemic (2019 = 3.72 > 2020 = 4.12 > 2021 = 4.06); the average number of participants recruited in doctoral dissertations was more than three times the average number of participants recruited in master's theses (Ph.D. = 381.09 > MA = 115.38).

**Discussion**

The findings of this study were discussed in the axis of each research question; each title represents each research question. They were also discussed regarding the hypotheses of the researchers of this study and regarding studies in the literature.

***The descriptive statistics of master's theses and doctoral dissertations in 2019, 2020 and 2021***

According to the findings for the frequencies and percentages of master's theses and doctoral dissertations in ELT, the overall number of master's theses and doctoral dissertations

published decreased while pandemic in comparison with pre-pandemic, despite the increase in doctoral dissertations in 2020. This was a finding consistent with Yorulmaz and Aydoğdu's (2021) study as they found the number of master's theses and doctoral dissertations decreased drastically in research universities in Türkiye during the pandemic. As mentioned in the problem statement of this study, researchers conducting their master's theses and doctoral dissertations had to deal with Covid-19 which was an unknown phenomenon for everyone. Some researchers may have experienced psychological or physiological problems, which was a matter of lowering the motivation of researchers in carrying out their studies. CoHE gave undergraduate and postgraduate students extra freeze right for their registration during the pandemic period, this could be another reason for the downward trend in writing their theses.

### *Research method*

The results related to research methods revealed that the adoption trend of the qualitative method approach in master's theses and doctoral dissertations increased while pandemic. Another significant finding was that in doctoral dissertations mixed and quantitative method implementation trend decreased. This may have led by the sampling choice of researchers because sampling in qualitative research does not require large numbers of participants, as the important phenomena in qualitative research focusing on affluent and diverse judgments of individuals. Besides, the representation of the sample group is one of the most important elements of quantitative research. (Dörnyei, 2007; Creswell & Creswell, 2018). On the other hand, although the scope of this study was not to reveal which method was mostly used during the pandemic, the findings revealed that the quantitative method was the most adopted method while pandemic. These findings were consistent with those of Yavuz et al. (2021) and Mishra et al. (2021) whose findings showed that the quantitative research method was mostly adopted method for the studies during the pandemic, but they did not reveal an upward or downward trend in using methods.

### *Research design*

The findings related to research design showed that the selection of descriptive study in master's theses and case study design and action research design in doctoral dissertations increased while pandemic. In addition, experimental study design selection in master's decreased while pandemic. That kind of fluctuation in research design adoption by years also indicates the increase in qualitative research designs, which shows the consistency in the findings of this current study related to research methods. These findings showed that the designs involving methods and techniques required to carry out studies in physical environment were interrupted. As DeMatthews et al. (2020) also stated in their review article, the Covid-19 pandemic did not let researchers conduct their studies requiring ongoing education such as ethnographic studies, case studies, longitudinal studies, and alike.

Another finding apart from the main purpose of this study demonstrated that the rate of those who did not mention research design in their master's theses and doctoral dissertations decreased over the years. Indicating that kind of methodological elements in studies increases comprehensibility by readers and reflects the quality of the study. The fact that the rate of studies referring to research design in doctoral dissertations was higher than master's theses showed the quality of doctoral dissertations in comparison to master's theses. Bourke & Holbrook (2013) also revealed doctoral dissertations had more quality than master's theses in terms of effective application of approach/methodology. The approach and methodology's overall effectiveness of application includes the overall design of a study. That is, the prerequisite of an effective application of a paradigm or a design reflects having enough

knowledge about them.

## Data collection tool

The average number of instrument usage per master's thesis decreased during the pandemic. This might have been led by such factors caused by the pandemic as anxiety of researchers' finishing their theses, lower frequency of supervision, other psychological or physiological issues, etc. Another finding revealed that in both the master's theses and doctoral dissertations the implementation trends of researchers in video/audio recordings as data collection tools was upward. This indicated that the upward of instrument usage trend was mostly observed in studies adopted the qualitative research method. Because the data collection tools used in qualitative studies should be expected, naturally, tools that can collect qualitative data, this also demonstrates the consistency of one of the previous findings discussed above "Discussion on how master theses and doctoral dissertations differed regarding research method" which was during the pandemic the rate of qualitative research increased in term of the trend in adopting research method.

Another significant finding, apart from the scope of this study, was that instrument usage per study was higher in doctoral dissertations than in master's theses. Although Karadağ (2011) revealed that there were major deficiencies in instrumentation in doctoral dissertations published in Türkiye, the multitude of usage of instrument per dissertation reflects the depth of doctoral studies against master's theses. This also shows the overall quality and profundity of doctoral dissertations as revealed in the study of Bourke and Holbrook (2013).

## Data analysis methods / calculations

According to the findings related to data analysis methods/calculations, multitude of data analysis methods in each master's thesis and doctoral dissertation increased while pandemic compared to pre-pandemic. This finding showed that despite the decrease in the number of theses and dissertations while pandemic, researchers made more in-depth analyses and calculations while working on their theses. This probably stemmed from the fact that researchers found a more available optimum context for their research. Furthermore, in their research Sarah et al. (2021) argued that despite its difficulties, the pandemic affected the personal, work, and research lives of researchers positively in terms of enabling a balanced context among them. Another finding revealed that the implementation of parametric tests in doctoral dissertations increased while pandemic. In previous studies, the usage of parametric tests was also found as the most used test type in master's theses and doctoral dissertations because of those kinds of tests' high reliabilities (Tavsancil et al., 2010; Yılmaz et al., 2015). This finding on parametric and non-parametric was the proof of in-depth analysis again, which was the upward usage trend in ANOVA, Kruskal-Wallis H test, and regression analysis in master's theses. Although paired samples t-test implementation trend in master's theses decreased by years, the increase in the use of ANOVA, Kruskal-Wallis H test, and regression analysis tests does not change the fact of increasing in-depth analysis in theses. Lastly, in doctoral dissertations, the upward usage rate of the descriptive analysis, grounded theory analysis methods, and independent samples t-test increased, which was another finding supporting the idea of in-depth analysis increase during the pandemic. This may have been because the pandemic had a positive effect on researchers' optimum context for research to some extent (Sarah et al., 2021).

### *Sampling method*

The findings related to the sampling method showed that convenience and purposive sampling methods' implementation increased in master's theses and random sampling implementation method decreased in master's; however, its implementation in doctoral dissertations increased. These findings indicated that researchers did not prefer using non-probability sampling methods in their studies while pandemic. That is, researchers selected their samples regarding the conjuncture including the pandemic. Researchers choose the convenience sampling method in their studies as they want to select the sample considering such factors as the purpose of their studies, physical distance, accessibility, availability in time, etc. (Dörnyei, 2007). Another result apart from the main purpose of this study regarding the sampling method, a great number of postgraduate students did not mention about sampling method they adopted in their master's theses and doctoral dissertations. Also, Maravelakis (2019) stated in his research that in many research sampling was not paid enough attention by researchers. Sholtz (2021) stated in her research that the reason why researchers did not mention about sampling method in their study might have been because journals did not require to mention sampling. In a similar vein, the fact that master's and doctoral students did not mention sampling method may have been because their supervisors did not make them refer to the sampling method in their theses and dissertations. However, researchers are suggested to state the sampling method in their studies, to make their methodological aspect clearer for readers (Creswell and Creswell, 2018).

### *Sample group*

Overall findings related to the sample group recruited in master's theses revealed that prep school EFL instructors, K-12 EFL teachers, materials/books/corpora/documents recruitment as sample group increased while high school EFL learners, middle school EFL learners, prep school/university EFL learners and pre-service EFL teachers' recruitment as sample group decreased. Besides, in doctoral dissertations, the trend of sample choice was upward in prep school EFL instructors, but it was downward in pre-service EFL teachers/ELT students, K-12 EFL teachers, materials/books/corpora/documents, and ELT teacher trainers as research sample. The trend in the choice of sample group matched up with that of the convenience sampling method, which was the most used method in the studies (Hultsch et al., 2002; Etikan et al., 2016; Zhao, 2020). Dörnyei (2007) stated that by convenience sampling method researchers recruit their target population regarding their closeness, availability, timesaving in reaching, etc. That is, the pandemic, due to the restrictions and distance education, made the researcher recruit the most accessible and convenient sample group and made them drop the less accessible and convenient one.

Another finding apart from the main purpose of this study revealed that postgraduate researchers mostly selected their samples from prep school/university EFL learners. This may have been because postgraduate students mostly consisted of English Teachers in prep or K-12 schools, and they were taught in the faculty of education, they recruited the most convenient sample group for them. The selection of university students as a sample group is also consistent with the finding related to the sample group in Yavuz et al.'s (2021) study in which they found that university students were mostly selected as research samples during the pandemic.

### *Sample size*

Findings related to the sample size revealed that in master's theses, the numbers of K-12 EFL teachers and prep school EFL instructors as a sample increased whereas the numbers

of prep school/university EFL learners, pre-service EFL teachers/ELT students, and middle school EFL learners decreased during the pandemic. In addition, in doctoral dissertations, the numbers of pre-service EFL teachers/ELT students, and K-12 EFL teachers decreased whereas prep school EFL instructors as research samples increased during the pandemic. That is, the rate of more convenient sample groups to the researchers increased whereas the less convenient ones decreased, which was consistent with conditions of the pandemic such as challenges in reaching sample groups, sample groups member's psychological and physiologic problems, etc. (DeMatthews et al., 2020; Alghamdi, 2021). Because distance education and the restrictions made the numbers of K-12 EFL teachers and prep school EFL instructors more available compared to middle school EFL learners and pre-service EFL teachers/ELT students. Although there was a contrast between master's and doctoral theses in the tendency of K-12 EFL teachers to be selected as sample groups, the fluctuation in master's theses was taken into consideration in the discussion section because its total number in master's theses was much more than that of doctoral dissertations.

Another finding apart from the comparison of pre and while pandemic in terms of sample size was that the average number of participants recruited per doctoral dissertation was more than approximately three times the average number of participants recruited per master thesis. This indicates that doctorate researchers worked with more participants; that is, they collected, coded analyzed, and interpreted more data than master's degree researchers. Doctoral dissertations appeared to have more quality in various aspects again compared to master's theses (Durak et al., 2016; Li & Zang, 2021; Wu & Paltrigde, 2021) What's more, Pallant (2016) suggests that researchers need to recruit more participants because of unexpected situations like participants' dropping out, unwillingness to complete the research tasks, etc. Doctoral students seemed, probably, to regard this advice.

*Data analysis software*

The findings related to data analysis software revealed that both in master's theses and doctoral dissertations, the implementation of SPSS decreased while that of MAXQDA increased during the pandemic. Besides, NVivo usage increased in master's theses during the pandemic. Nevertheless, another significant finding apart from the main aim of this study showed that in master's theses, SPSS was used more than in doctoral dissertations. Also, in doctoral dissertations, the usage of NVivo and MAXQDA was more than that of master's theses. This finding implied that doctorate students, in the most general sense, used more different ways to analyze the data they collected. This may have been because they had more time to conduct their dissertations and it was expected to make more in-depth and comprehensive research compared to master's degree students. Because the dissertation period cannot be less than three semesters for doctorate degree while it is two semesters for master's degree and doctoral dissertations are strongly suggested to be more qualified than master's theses as mentioned. Moreover, because doctorate students gain self-confidence depending on their academic experience (Taymaz, 2021), this may lead them to be more open to learn new techniques and makes them feel free in using different software.

**Conclusion**

The effect of the pandemic on researchers' tendencies in their master's theses and doctoral dissertations was analyzed in almost all methodological aspects as design, data collection instrument, data analysis method/calculation, sampling method, and sample size. It was also noted that numerous sub-criteria exhibited linear upward or downward tendencies. In the light of the findings of the study, the main results are summarized as follows:

- Researchers' tendencies in using the qualitative method approach in master's theses and doctoral dissertations increased,
- Researchers' qualitative research design selection tendencies increased in master's theses and doctoral dissertations,
- Researchers' instrument usage tendencies in master's theses decreased in numbers,
- Researchers' data analysis method/calculation usage tendencies in master's theses increased in numbers and they tended to make more in-depth analyses in their studies,
- Researchers' tendencies in choosing sampling methods in their master's theses and doctoral dissertations were in the direction of the non-probability sampling method,
- Researchers' tendencies in choosing more accessible and convenient sample groups (like prep school instructors) increased in both master's theses and doctoral dissertations,
- The number of more convenient sample groups per year increased, that of less convenient ones decreased,
- Researchers' tendencies in the implementation of data analysis software did not change, while pandemic in comparison to pre-pandemic.
- Based on the findings related to the methodological aspects, the number of master's theses and doctoral dissertations published decreased,

Apart from the main purpose of the present study several significant findings emerged that (1) some researchers did not mention design, method, sampling method, and data analysis software, especially the sampling method used in both master's theses and doctoral dissertations was not mentioned by a huge number of researchers, (2) in doctoral dissertations multiple data collection tool usage, different types of analysis software usage, and the sample sizes were higher than those of master's theses; in methodological aspect, doctoral dissertations were stronger than master's theses, (3) the most used, implemented, adopted or recruited sub-criteria were as followings:

- Research method                          : Mixed

- Research Design                          : Experimental

- Data Collection Tool                     : Scales / Surveys

- Data Analysis Method / Calculation       : Descriptive Statistics

- Sampling Method                          : Convenience

- Sample Group                             : Prep School/University EFL Learners

- Sample Size                              : Prep School/University EFL Learners

- Data Analysis Software                   : SPSS

To sum up, regarding the overall results of this study, the pandemic affected the researchers' tendencies mostly negatively and partly positively in the usage and implementation of methodological elements in their master's theses and doctoral dissertations (DeMatthews et al.,

2020; Yorulmaz & Aydoğdu, 2020; Alghamdi, 2021; Sarah et al., 2021; Topal et al., 2021; Yavuz et al., 2021).

Based on the findings, because the Covid-19 pandemic had some negative effects on research, researchers should consider possible unexpected conditions while planning their research. Thus, it is strongly suggested to researchers that there should be B or B and C plans such as determining an alternative sample group, having an alternative or adaptable data collection instrument according to the conditions, etc. Professors are suggested to make *supportive meetings* with their supervisees to keep their motivation high in such kind of demotivating circumstances to diminish the devastating psychologic effects of unexpected situations. Beyond the results regarding the main purpose of the study, supervisors are also strongly recommended to make their master's degree students carry out a mini (for instance sampling fifty theses) but systematic research (by using a checklist) on theses or dissertations randomly selected from the archive of CoHE National Thesis Center. In this way, the novice researchers will gain profound understandings of which aspects should be given prominence and which should not in their master's theses.

Further researchers can involve such other aspects in their studies as topic, setting, the convenience of reliability issues, etc. in addition to the main and sub-criterion analyzed in this study. They can also explore the methodological tendencies of researchers by conducting questionnaire(s) or interview(s). Moreover, they can involve journal papers to make a comparison with postgraduate theses and dissertations. They can also extend the scope of this study as pre, while, and post-pandemic by involving the post-period of the pandemic in their further research. Researcher's trends in their methodological choices may not be reflected precisely by examining different authors' pre and while pandemic studies. Examining methodological trends in studies conducted by the same authors before and during the pandemic may yield more scientific results than the current study.

## Acknowledgments

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**Appendix 1.** Publication numbers of the theses and dissertations in CoHE's Thesis Center database

The List of the Sample

| 2019 MA | | | | | | | | 2019 PhD | 2020 MA | | | | | 2020 PhD | 2021 MA | | | | 2021 PhD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
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| 555074 | 572783 | 569022 | 572783 | 581171 | 571040 | 600495 | | 589289 | 637876 | 632813 | 628830 | | | 656732 | 671512 | 676252 | 690693 | 665479 | | |
| 565356 | 572346 | 560254 | 572346 | 585423 | 601757 | 543291 | | | 635898 | 635565 | 628686 | | | 642520 | 672053 | 671566 | 692795 | 695197 | | |

**Appendix 2.** Main and sub-criteria checklist for data collection and analysis

| Criteria | | Sub-criteria | | |
|---|---|---|---|---|
| **Research method** | 1 Mixed | | 3 Qualitative | |
| | 2 Quantitative | | 4 Not Mentioned | |
| **Design** | 1 Experimental study | | 11 Action research study | |
| | 2 Descriptive study | | 12 Phenomenological study | |
| | 3 Case study | | 13 Embedded mixed method | |
| | 4 Explanatory sequential mixed method | | 14 Content / Document analysis | |
| | 5 Survey-based | | 15 Ethnography study | |
| | 6 Concurrent mixed method | | 16 Grounded theory study | |
| | 7 Correlational study | | 17 Meta analysis | |
| | 8 Corpus-based | | 18 Other | |
| | 9 Exploratory sequential mixed method | | 19 Not Mentioned | |
| | 10 Conversation analysis | | | |
| **Data collection instrument** | 1 Scales / Surveys | | 8 Field / Observation Notes | |
| | 2 Interviews | | 9 Journals | |
| | 3 Test / Task results | | 10 Diaries | |
| | 4 Checklists / Rubrics / Tables | | 11 Portfolios | |
| | 5 Open Ended Questions / Surveys | | 12 Smart watch | |
| | 6 Video / Audio recordings | | 13 Other documents | |
| | 7 Reflection Papers | | | |
| **Data analysis** | 1 Independent Samples T-test | | 13 Content/Thematic Content/ Document/Discourse | |
| | 2 Paired Samples T-test | | 14 Axial/Open Coding/Categorizing/Theming | |
| | 3 ANOVA | | 15 Descriptive Analysis | |
| | 4 ANCOVA | | 16 Inductive Qualitative Analysis | |
| | 5 Mann Whitney U-Test | | 17 Constant Comparative Method | |
| | 6 Kruskall Wallis H-Test | | 18 Grounded Theory Analysis | |
| | 7 Wilcoxon Signed Rank Test | | 19 Interpretative Phenomenological Analysis | |
| | 8 Chi-Square | | 20 Collective Case Study Analysis | |
| | 9 Friedman | | 21 Multilayered Analytic Method | |
| | 10 Correlation | | 22 Contrastive Rhetoric Analysis | |
| | 11 Regression | | 23 Acoustic Analysis Technique | |
| | 12 Factor | | | |
| **Sampling method** | 1 Convenience | | 6 Quota | |
| | 2 Purposive | | 7 Maximal Variation | |
| | 3 Random | | 8 Cluster | |
| | 4 Snowball | | 9 Saturation | |
| | 5 Criterion | | 10 Not Mentioned | |
| **Sample group and size** | 1 Prep School/University EFL Learners | | 10 ESP EMI Learners/Students | |
| | 2 Prep School EFL Instructors | | 11 ESP EMI Instructors/Professors | |
| | 3 K-12 EFL Teachers | | 12 School Administrators | |
| | 4 Pre Service EFL Teachers/ELT Students | | 13 ELT Postgraduate Students | |
| | 5 Materials/Books/Corpora/Documents | | 14 Other English Language Department Students | |
| | 6 High School EFL Learners | | 15 Private Course Instructors/Teachers | |
| | 7 Middle School EFL Learners | | 16 Mixed K-12 Learners | |
| | 8 Primary School EFL/Young Learners | | 17 Other EFL Learners | |
| | 9 ELT Techer Trainers | | 18 Other Samples | |
| **Data analysis software** | 1 SPSS | | 8 AntConc | |
| | 2 NVivo | | 9 Atlas.Ti | |
| | 3 MAXQDA | | 10 Stata | |
| | 4 Microsoft Excel | | 11 Log Likelihood | |
| | 5 AMOS | | 12 Others | |
| | 6 Keywords in Context (KWIC) | | 13 NotMentioned | |
| | 7 Lisrel | | | |