

An Examination of Needs Analysis Research in the Language Education Process

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ABSTRACT

The aim of this study is to analyze research methods, data collection tools, and data analysis methods of the needs assessment studies conducted in the language education and teaching process. In this study, the general screening model, which is based on an examination of research on needs analysis, was used. The data collected in accordance with the general screening model were examined by the content analysis method based on the examination of the documents. The methods of these studies, data collection tools, and data analysis methods were reviewed. In accordance with the results from the review process, the frequency of use, efficiency, and functionality of the research method, data collection tool and data analysis methods used were evaluated. Next, during the needs assessment process, the importance and priority of students' and teachers' needs were discussed. The results of these discussions have been included at the end of the research. In the light of the findings of the research and the results, suggestions were made regarding the importance of teacher and student needs factors in the process of identifying and analyzing language education needs. The classification made shows that researchers generally concentrate on four models which are mixed, survey, descriptive and experimental models. As for the data collection tools, it is understood that different data collection tools are used in the sample studies to determine the needs.

Key words: Needs Analysis, Language Education-instruction, Analysis, Language Education-instruction, Method

INTRODUCTION

The term "need" may refer to an obligation, demand, and necessity (Martins, 2017, p. 58). The term "needs analysis", which has become widespread in ESP (English for Specific Purposes) and EAP (English for Academic Purposes) courses, is also called "needs assessment". The purpose of the needs analysis is to identify the target language teaching/learning needs in order to design an effective curriculum. In assessing the special needs of students, we encounter the term "need analysis", which had different connotations in the past than it does currently. The needs analysis was carried out in the early stages of ESP (1960s and early 1970s) to evaluate students' communication needs and the techniques of achieving specific teaching objectives. Nowadays, the tasks of needs analysis vary considerably since the needs analysis aims to gather information about students' needs (Otilia, 2015). Tarone and Yule (1989) reported four levels of needs analysis according to learners' learning needs, which are the global, rhetorical, grammatical-rhetorical and grammatical levels. Global needs analysis tries to determine which target conditions the target language will need in order to realize the learning process effectively. Thus, it determines the target needs of students in relation to the language. Rhetoric and grammatical-rhetorical needs analyses

are related to each other as the grammatical-rhetorical needs analysis tries to determine which linguistic forms are used to realize the structure of knowledge at the rhetorical level. Grammatical needs analysis is related to the frequency in which grammatical forms are used in certain communicative situations (Çelik, 2003).

Needs analysis in the language education process develops within the scope of certain objectives depending on the purpose of the research. Objectives of the needs analysis in the educational process are as follows: information on the aims of students to follow a learning program on the basis of information gathered through various sources, analysis of the current situation in order to provide information on the effectiveness of the program, which is carried out according to the current and future needs of the students, information on preferred learning or learning styles, information on the preferences of learners for specific skills and preferences for learning these skills, factors determining the role relationship between teachers and students; and information related to preferences for teaching-learning activities (Dudley-Evans and John, 1998, p. 125).

A needs analysis to be conducted based on these purposes and an evaluation process resulting from such a needs analysis consist of different stages which are closely related to one another. The six key steps required to carry out a needs as-

assessment are listed as follows: determining goals, determining the boundaries of the universe in which the needs analysis is to be conducted, determining the limits of the test case (test), choosing the data collection tool, collecting evidence, evaluating the data, and criticizing the study in terms of its effectiveness (Schutz and Derwing 1981, cited in Jeczelewski, 2016, p. 13). Duddley-Evans and John (2009) classify needs analysis into five groups according to the functions of needs analysis: objective situation analysis and objective needs analysis covering the tasks and activities that learners will use to use English; linguistic analysis giving information about how language and skills are used, discourse analysis, genre analysis; analysis of instructional needs covering similar situations such as prior learning experiences, reasons for participating in the curriculum, expectations, etc. This means that subjective need factors that influence learning styles depend on the needs of the learners; appropriate case analysis to identify students' current skills and language use; meaning analysis to give information about how the lesson will be done or the environment to be studied.

Depending on the teaching process of ESP, Stern (1992) focuses on four kinds of ESP teaching objectives, which are proficiency, knowledge, affective and transfer goals. These objectives are described as follows: The provincial proficiency targets; four skills in reading, writing, listening and speaking. Knowledge objectives include the acquisition of linguistic and cultural information. Language knowledge consists of awareness of language analysis and systematic aspects. Affective targets are related to the development of positive emotions associated with the topic. Finally, transfer targets include the ability to make generalizations from a situation or at another time (cited in Otilia, 2015, p. 54-55). In the 1970s, the target situation analysis (TSA) focusing on "how much" and for "what". This approach dealt with determining requirements. Munby's (1978) analysis focuses entirely on needs analysis when the needs analysis is strong (West, 1998, cited in Mohammadi and Mousavi, 2013). Munby set up a "Communicative Needs Processor" (CNP) analysis to determine curriculum achievements. This analysis includes a large number of different questions to determine the profile of learners' language needs. Although Munby's model has shown various improvements and progress in needs analysis, it has also been criticized for some aspects. These criticisms are focused on aspects such as analysis' being complex and time-consuming, excluding learners' perceptions, neglecting socio-political conditions, bearing logistical and administrative constraints and drawing skills from social English (Jordan, 1997; West, 1994 cited in Mohammadi and Mousavi, 2013). These criticisms of Munby's approach brought up the questions of "how" and "what" to the agenda in the needs analysis. Thus, the question of "what needs to be kept in mind?" became important in order to determine language needs and to learn a language. In addition to this, the question of "how" gained importance in the language learning process. These questions led to various pedagogic needs analysis approaches. These analyses complement TSA (Target Situation Analysis); deficiency analysis, strategy analysis and means analysis (Jordan, 1997; West, 1994, 1998 cited in Mohammadi and Mousavi,

2013). The present situation analysis (PSA) was developed by Richterich and Chancerel (1980, cited in Mohammadi and Mousavi, 2013). This analysis is related to the concepts "means needs" and "ends needs" and focuses on what learners like to learn when learning the target language. With regard to these concepts, "means needs" help students to learn their language needs while "ends needs" are related to the current situation (learning needs). The "deficiency analysis", which is a combination of TSA (Target Situation Analysis) and PSA (Present Situation Analysis), is an approach based on the analysis of the current state of the learners as well as the current situation (e.g. Allwright, 1982; Robinson, 1991, cited in Mohammadi and Mousavi, 2013).

After the 1980s, needs analysis studies seemed to change direction according to learning styles. As a result of this trend, the "language audit analysis" approach emerged. This analysis covers large-scale research in a company, an organization or a country (Jordan, 1997; West, 1994). Therefore, in this analysis, it is thought that students' individual language needs should be followed up with more advanced analyses. As a result, the needs analysis has become a matter of language planning, and language inspections involve large-scale research in a company, an organization or a country (Jordan, 1997; West, 1994, cited in Mohammadi and Mousavi, 2013). Hutchinson and Waters (1987) addressed the needs in two main categories. These are called target needs (i.e. what the learner needs to do in the target situation) and learning needs (i.e. what the learner needs to do in order to learn). The target needs include the following content that the individual needs to learn about the language. For example, there are many ways to deal with the problem and wants to learn the language. These are closely related to concepts such as necessities, lacks, and wants. Dudley-Evans and John (1998) emphasized concepts such as present knowledge/required knowledge, objective/subjective needs, and perceived/felt needs. Hutchinson and Waters (1987) tried to identify the target situation analysis framework with the following questions: How will the language be used? What will the content areas be? With whom will the learner use the language? Where will the language be used? When will the language be used? Objective needs are related to the accumulation of knowledge about the learners' language learning skills. Linguistic difficulties and linguistic competencies that a learner experiences during the language learning process can be given as examples. Subjective needs point to learners' perceptions, attitudes, and expectations about language (Robinson, 1991; Brindley, 1989, cited in Martins, 2017). The main difference between objective/subjective and perceived/felt needs concerns the data collection processes of these needs. Moving from these differences Stufflebeam et al. (1985) described the four philosophies involved in the teaching of NAs in education: the philosophy of difference, it is the distance between students' language needs and their current linguistic competencies; democratic philosophy, these are the needs that are preferred by the majority of the stakeholders involved in the language education process; analytical philosophy, - when the learning characteristics and learning processes are taken into consideration, needs include the next stage; the philosophy of diagnosis, the rela-

tionship between diet and drugs, needs are essential elements of language performance; consequently they may be harmful if not developed (cited in Mohammadi and Mousavi, 2013).

Researchers explain the characteristics of these seven stages of processes as follows: (a) must be based primarily on the philosophy of culture and organization; (b) must be proactive rather than reactive; (c) use a method that has a distinctive feature that distinguishes learning needs from other needs not addressed by education; (d) directly or indirectly, interested in education and various organizational actors interested in participating in the teaching; (e) focus on the largely observable skills of leaders, managers, and professionals; (f) consider the various uses of sampling techniques and data analysis; and finally (g) to have a cost/benefit analysis at the end of the process (Wright and Geroy, 1992).

The following tools are often used to describe the needs of language teaching-learning: questionnaire, interview, observation, discussion, telephone interview, and their combinations. Among them, questionnaires are the most widely used tools. Especially, the needs analysis based on speaking was determined to be more effective. The features of a good speaking analysis are as follows: be easy to understand and fill in, be good for learners with little or no experience in assessing their own ability, be easy to use as a basis for an interview by an inexperienced interviewer, cover all important aspects, give all information needed to tailor a course, not require an interview (i.e. participants can do the needs analysis at home), be good for analyzing many people at the same time, be good for analyzing individuals, be easy to evaluate, be easy to compare different individual needs profiles (Kohoutova, 2006). In the following review, a detailed analysis of the use of these tools was carried out. In the light of the theoretical results presented by these studies, it is examined how this theoretical knowledge is used in sample studies. Thus, the theoretical framework of this study is to determine the use of these results in experimental research. In brief, the theoretical framework of this research focuses on how needs analysis is done in language education. These results are given in detail in the following sections.

Purpose, Scope and Research Question

The main purpose of this study is to identify methods, data collection tools, and data analysis methods used in the needs analysis in the needs assessment studies conducted in the language education and teaching process. In line with this purpose, the research consists of books, articles, and theses

published or issued between 2002 and 2017. The 74 studies collected in this context were examined according to the determined criteria. The result of the examination showed that 17 of them were not suitable for the purpose of the research. With the omission of these 17 studies, 57 studies were examined. Based on the research process, an answer to the basic research question has been sought. According to the data collected from the sample studies, we focused on the following research question. "How are the methods, data collection tools and data analysis methods used in research on the language education-teaching process?"

MATERIALS AND METHOD

The data were collected from the following databases: YÖK Thesis Database; Marmara University, Boğaziçi University, and Muş Alparslan University Library Database and Google Academic Databases [Wiley Online Library, Web of Knowledge (ISI), Proquest, PsycNet (APA)]. In order to collect the data, the following keywords were written on the relevant search engines: "learning needs, teaching needs, teaching needs assessment, training, teaching needs analysis and learning, teaching needs analysis, teaching needs evaluation, corporate training, and university, development, and education". The studies were reviewed by the author and three domain experts in accordance with the criteria provided in Table 1.

In the study, a general screening model based on the examination of the data taken from a sample or samples from a part of or the entire universe was used to reach general conclusions about the needs assessment studies conducted in the language education and teaching process (Karasar, 2013). At the same time, a content analysis based on the examination of documents related to a certain subject area was used in the research (Yıldırım and Şimşek, 2013). The methods, data collection tools and data analysis methods used in the sample studies were determined. The collected data according to the stages of the content analysis were analyzed according to the following steps: determining the keywords to search for, determination of categories, organization, and definition of data according to codes and categories, categorization and interpretation of findings reached.

RESULTS

The model of the needs analysis, data collection tools, and data analysis methods conducted in the field of language

Table 1. The criteria to review the sample studies

Subject of study	Explanation
Research purpose	The researchers' purposes in analyzing the needs are examined.
Research model	Research models used in the needs analysis process were examined.
Data collection tools	The data collection tools used to identify needs were examined in the research.
Data analysis method	Data analysis methods used to analyze collected data in research were examined.
The sample	The needs analysis was examined to determine groups' needs.
The words used in the research instead of the concept of need	The concepts used to identify and analyze needs were examined in the sample studies. These concepts were compared to the concepts used in the literature in the process of needs analysis.

education are examined in this part of the research. In this context, the sample studies are examined in three categories and in terms of the relations of these categories with one another. The first category covers the research models that researchers use to determine needs during the language education process. In this context, the model of each researcher was determined and these are chronologically (Appendix A). Then, the models used in the sample research are divided into categories.

This classification shows that researchers generally concentrate on four models which are mixed, survey, descriptive and experimental models. The frequency of use of these models in the sample research is shown in Figure groups (Figure 1). Among them, research based on experimental models seems to be quite few. At the same time, the mixed method is the second model that has been preferred less by researchers. Apart from these, the findings indicate that to determine the needs of the language, the sample research more often uses survey and descriptive models. These include more specific case studies. This finding suggests that research concentrates on the identification of current needs situations. A similar situation can be seen in surveys based on screening models. In the research, the needs of the language education-teaching process were determined by screening. These results support previous research findings (Ferreira and Abbad, 2013, pp. 86-87).

Figure 2 shows that different data collection tools are used in the sample studies to determine the needs. The reason why the data collection tools differ stems from the combination of several different data collection tools in one study. The figure groups (Figure 2) shows that different data collection tools are used. The utilization rates of these different data collection tools are quite different from one another since most of the surveys were used during the data collection

process. The reason for this is closely related to the research model used because the questionnaire was used mostly as data collection tools in descriptive and screening-based research (Ferreira and Abbad, 2013, pp. 86-87). It has been determined that these questionnaires used in the sample studies are mostly structured and semi-structured. Interview forms are the second most commonly used means in the sample research. Interview forms have been used in these studies because of the frequent use of interview techniques for gathering data, especially in the models based on screening. As a matter of fact, in the previous studies, it was determined that the questionnaire is the most commonly used tool in the needs analysis (Long, 2005, p. 39). On the other hand, observation forms, documents, scales, and tests were preferred less by researchers.

Another issue covered in this section is the analysis methods used to analyze data in the process of determining needs. When we look at data collection tools in Figure groups (Figure 3), it is seen that more than one analysis method is used in sample research. Researchers used SPSS, content, mix, frequency, and percentage, coding, and needs analysis to analyze their data. In terms of their frequency of use, it appears that the analysis based on the SPSS program constitutes a large majority. It has been determined that these analyses made in the SPSS program are mostly composed of descriptive analyzes. The reason for this is closely related to the research model and data collection tools used. At the same time, frequency and percentage analyses used in the second rank are also closely related to the model used. Therefore, in this section, we can make a general: It has been concluded that the research model, data collection tools and data analysis methods used in the research are compatible with each other. Therefore, the type and characteristics of the examinations made in all three charts (Figure groups) are

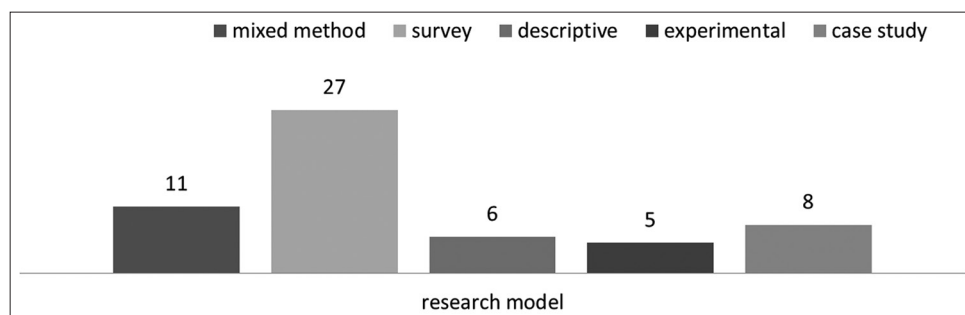


Figure 1. Research models

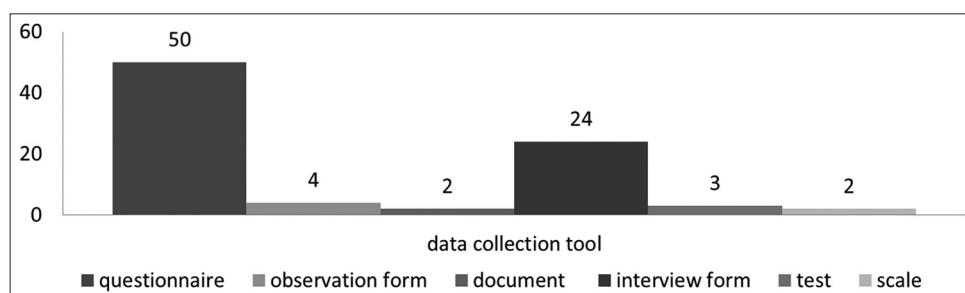


Figure 2. Data collecting tools

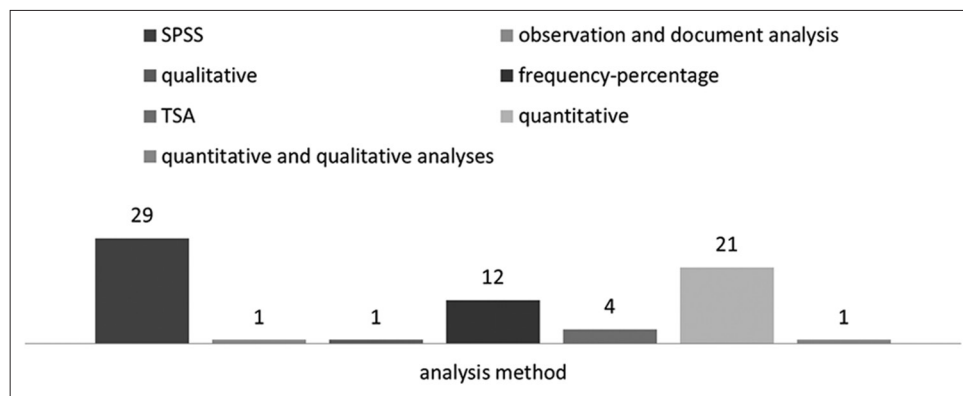


Figure 3. Data analysis methods

quite similar. However, their effectiveness, their adequacy, and functionality in the process of identifying and analyzing the needs of language education and teaching are also discussed in the discussion section.

When the results of this research are compared with Long's research, a different finding shows up (2005, pp. 31-32). This comparison shows that the data collection processes used in the process of determining the needs have varied over time. Long gives the data collection process of the research carried out between 1970-2002 as follows: "diaries, journals and logs; role-plays, simulations; content analysis; discourse analysis; analysis of discourse; register/rhetorical analysis; computer-aided corpus analysis; genre analysis; task-based, criterion-referenced performance tests, triangulated; non-expert intuitions; expert practitioner intuitions; unstructured interviews; structured interviews; interview schedules; surveys and questionnaires; language audits; ethnographic methods; participant observation; non-participant observation; classroom observation". As is seen, the data collection processes used in the years 1970-2002 are more different than they are in the sample studies. In other words, it can be suggested that the studies conducted between 1970-2002 involved more different processes than the studies conducted between 2002-2017. This suggests that the different methods used to collect the data in the language need analysis decreased over time since researchers mostly (between years 2002-2017) preferred to use survey and interview forms as data collection tools. At the same time, descriptive and screening coding and frequency analyses are the most frequently used analyzes. Appendix A provides more detailed information about this section.

DISCUSSION AND CONCLUSION

Chegeni and Chegeni (2013) listed the research processes of the needs analysis as "questionnaires, self-ratings, interviews, meetings, collecting learner language samples, task analysis, case studies and analysis of available information". It is difficult to deduce that this arrangement is adequate to determine the language needs. However, an examination of Figure groups indicates that some of these concepts are used in the sample studies. Survey and descriptive models are often used to identify needs in the sample studies. Although survey and descriptive models have been used extensively in

these studies, it is difficult to say whether they are sufficient and effective in determining the needs entirely. In this context, it has been determined that the mixed method, which is very effective in determining both qualitative and quantitative needs, is not sufficiently used in sample studies. This factor needs to be taken into account in the needs assessment studies. Thus, future studies should focus on research models in which both qualitative and quantitative methods are used together since the purpose of the research varies qualitatively or quantitatively according to the topic or scope of the research. Due to this variety, there is a need for model or models of research in which different research methods are used together in order to conduct appropriate and effective research.

In the sample studies, data collection tools with different features and functions were used. Their frequency or rate of use shows that there is a large distribution of variance since the majority of the data collection tools are comprised of questionnaires. The reason for this is, of course, closely related to the research model. But the tools used to identify the needs are a very important element in the language education process because these needs are determined by the data collection tools used. As it has been emphasized earlier, the aims of the research are qualitative or quantitative, depending on the research topic or scope. As a result of this difference, the needs of language education should be examined both qualitatively and quantitatively. For this reason, qualitative and quantitative data collection tools should be used together to determine needs. On the other hand, it has been observed that quantitative data collection tools are used more often to identify needs in the sample studies.

The results of the study can be summarized as follows: The classification made shows that researchers generally concentrate on four models which are mixed, survey, descriptive and experimental models. The result of the classification indicates that to determine the needs of the language, the sample research uses survey and descriptive models more often. This finding suggests that research concentrates on the identification of current needs situations. This result shows that research on needs analysis only focuses on specific models. However, it is necessary to take advantage of different models for the needs analysis in language education.

A similar result is seen in the frequency of data collection tools. A look at data collection tools shows that surveys were

mostly used during the data collection process. The reason for this is closely related to the research model used because the questionnaire was used mostly as data collection tools in the descriptive and screening-based research. Therefore, data collection tools should be enriched depending on the research models used in the needs analysis as this affects the analysis methods used for need analysis.

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APPENDIX

Appendix A. Method, data analysis model, and data collection tools in sample studies

Researcher, year	Study model	Data analysis method	Data collection tool
Bosher, S. & Smalkoski, K. (2002)	Experimental	Quantitative and qualitative analyses	Interviews, observation, questionnaire
Arik, S. (2002)	Experimental	Quantitative	Questionnaire
Çelik, S. (2003)	Survey	Quantitative	Questionnaire
Yutdhana, S. (2004)	Survey	Quantitative, SPSS	Questionnaire
Morita, M. (2004)	Case study	Categories and themes emerged mainly from the collected data, and preliminary hypotheses about the settings and participants were grounded in direct experience at the research site	Student self-reports, interviews, and classroom observations
Watanabe, Y. (2006)	Survey	Quantitative and a principal components analysis	Questionnaire
Huh, (2006)	Mixed-method	Quantitative and qualitative analyses	Semi-structured interviews and a questionnaire.
Kahraman, O. (2006)	Survey	Quantitative, SPSS	Questionnaire
Kohoutová, Ī. (2006)	Experimental	Quantitative and qualitative analyses	Questionnaires
Guiyu, D. & Yang, L. (2006)	Survey	Target Situation Analysis (TSA)	Questionnaires
Tavil, Z M. (2006)	mixed-method	SPSS, percentages, and frequency	Questionnaire and informal interviews
Kusumoto, Y. (2008)	Survey	SPSS, percentages, and frequency	Interviews, observations, and questionnaires.
Kayı, H. (2008)	Case study	percentages and frequency of responses	Questionnaire
Tsao, C. C.H., Wei, A. M.S. & Fang, A. S.H. (2008)	Survey	Quantitative, SPSS	A self-made questionnaire
Külekcı, G. (2009)	Survey	Frequency distribution and SPSS	Questionnaire
Eslami, Z. R. (2010)	Survey	Quantitative, SPSS	Questionnaire
İnceçay, G. & İnceçay, V. (2010)	Case study	Qualitative	Semi-structured interview
Chostelidou, D. (2010)	Mixed-method	Quantitative and qualitative analyses	Questionnaire, semi-structured interviews
Kaur and Khan, (2010)	Mixed-method	quantitative and qualitative analyses, frequency counts and percentages	Questionnaires for the students and semi-structured interviews
Akçadağ, T. (2010)	Survey	SPSS, percentages and frequency	Questionnaire
Moslemi, (2011)	Case study	Quantitative and qualitative analyses, SPSS	Interviews, questionnaires, and texts
Mehrdad, A. G. (2012)	Survey	frequency, SPSS	Questionnaire
Alfehaid, (2011)	Mixed-method	Quantitative and qualitative analyses, SPSS	Questionnaire, semi-structured interviews, documents and interview transcriptions
Baig, M. (2012)	Descriptive	Quantitative	Questionnaires, textbook.
Köstereliođlu, (2012)	Survey	SPSS, percentages and frequency	Questionnaire
Aydın, (2014)	Survey	SPSS, percentages and frequency	Questionnaires and interviews
Kim, H. H. (2013)	Survey	Quantitative, SPSS	Questionnaire
Al- Hamlan, S. A. (2013)	Mixed-method	Frequency and percentage of responses	Convenient sampling
Noom-ura, S. (2013)	Survey	Descriptive statistics of frequencies, percentage, quantitative	Closed-and open-ended questionnaires

(Contd...)

Appendix A. (Continued)

Researcher, year	Study model	Data analysis method	Data collection tool
Jie, C. (2013)	Case study	Target-situation analysis, deficiency analysis, strategy analysis	The tests of placement, observation of classes, questionnaires, structured interviews, and network based interviews
Ayas, Ö. & Kırkgöz, Y. (2013)	Survey	Quantitative and qualitative, SPSS	Questionnaires and interviews
Kazar, 2013	Case study	Quantitative and qualitative	Needs analysis questionnaire and a semi-structured interview
Harrison, J. J. & Vanbaelen, R. (2013)	Experimental	Quantitative and qualitative	Pre-tests and post-tests
Dehnad, A., Bagherzadeh, R., Bigdeli, S., Hatami, K., & Hosseini, A. F. (2013)	Mixed-method	Quantitative and qualitative, SPSS	Ethical and demographic forms, needs analysis questionnaires, and a form of semi-structured interview
Khansir, A. A. (2014)	Survey	Quantitative, SPSS	Background questionnaire; teachers' questionnaire
Kazar and Mede, (2014)	Mixed-method	Quantitative and qualitative, SPSS	The questionnaire, a semi-structured interview
Saber, Z. (2014)	Survey	Quantitative and qualitative, SPSS	Semi-structured and the questionnaire.
Zamanian, M. (2014)	Survey	Quantitative, SPSS	The students' and instructors' questionnaires
Angus, K. B. (2014)	Survey	Quantitative and qualitative	syllabi, questionnaires, and interviews
Kar, İ. (2014)	Descriptive	Frequency and percentage of responses	Questionnaire
Rashidi, N. & Kehtarfard, R. (2014)	Survey	Quantitative, SPSS	Questionnaires
Rostami, F. & Zafarghandi, A. M. (2014)	Case study	Quantitative , SPSS	Questionnaires
Chovancov×a, B. (2014)	Survey	The actual target situations	Questionnaire survey
Al-Hamlan, S. A. (2015)	A descriptive analytical approach	Quantitative and qualitative analyses, SPSS	The questionnaire, a semi-structured interview
Changpueng, P. & Pattanapichet, F. (2015)	Mixed-method	Quantitative and qualitative analyses, SPSS	Questionnaire and interview
Ulum, Ö. G. (2015)	Descriptive	Quantitative and qualitative analyses, SPSS	Questionnaire with open-ended questions
Chan, V. (2015)	Survey	Quantitative	Questionnaires
Pendidikan, S. (2015)	Experimental	Target situation analysis	Questionnaires
Gborsong, P. A., Afful, J. B. A., Coker, W., Akoto, O. Y., Twumasi, R., & Baiden, A. (2015)	Descriptive survey	Quantitative and qualitative paradigms	Reading proficiency test (pre- and post-test design) Interviews with staff and Students
Rose, P. V. & Sookraj, R. (2015)	Descriptive	Quantitative, SPSS	Questionnaires
Hajana, O. H. O. & Adam, A. M. A. (2015)	Mixed-method	Frequencies, percentage	Questionnaire
BinObaid, R. (2016)	Survey	SPSS quantitative	Questionnaire
Alebachew, S. (2016)	Mixed-method	Observation and document analysis, SPSS	Questionnaire, observation and document
Chen, I-J., Chang, Y.-H. & Chang, W.-H. (2016)	Survey	Quantitative	Questionnaire with Likert's 5 scales
Doruk, S. (2016)	Descriptive	Quantitative and qualitative , SPSS	Questionnaire and interview
Nazim, M. & Hazarika, Z. (2017)	Case study	Quantitative and qualitative	Likert's 5 scales, semi-structured interviews
Mohammed Ibrahim, A. S. E. (2017)	Survey	Quantitative and qualitative	Questionnaire and interview