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A Mixed-Methods Investigation of TEFL Graduate Students' Perspectives of Qualitative Research: Challenges and Solutions in the Spotlight

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Abstract

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Keywords

qualitative research, TEFL graduate students, challenge, solution, data analysis, data interpretation, data collection

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A Mixed-Methods Investigation of TEFL Graduate Students’ Perspectives of Qualitative Research: Challenges and Solutions in the Spotlight

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This study explored the challenges of conducting qualitative research encountered by Iranian Teaching English as a Foreign Language (TEFL) graduate students and their solutions for them. To delve into the issue, 20 TEFL graduate students who had passed a research methodology course were selected based on their availability from among the participants of the study who were selected based on purposive sampling from various universities. The participants thus selected sat a semi-structured interview based on the results of which, a researcher-made five-point Likert-scale questionnaire was developed and validated. Next, one hundred TEFL graduate students who had passed the research methodology course were selected based on purposive sampling from different universities across the country to respond to the questionnaire developed as mentioned above. The results of descriptive statistics revealed that the most important aspect of qualitative research from the students’ viewpoint was data analysis; likewise, the most challenging part was data analysis. Moreover, the participants described how educational systems’ overemphasis on quantitative research frameworks left little space or time for learning sophisticated qualitative research approaches. Finally, the majority of the participants deemed the introduction and presentation of an independent course on qualitative research methodology in the M.A. and Ph.D. programs in TEFL highly necessary.

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Introduction

Overview

Conducting qualitative research (QR) is a demanding, time-consuming, and complex task (Wang, 2013). As Liamputtong and Ezzy (2005) argue, the nature of QR is exploratory and based on an interpretive model; hence, it provides the researchers with information in a realm wherein there is little knowledge. QR has gained status and attention in many scholarly research arenas as a dependable form of inquiry (Elliot et al., 1999; Rennie, 1999). McLeod (2001) notes this movement has been most evident in education, social sciences, and healthcare inquiry since QR provides opportunities to understand social interaction dimensions that are not addressed in the traditional research methods. According to Goussinsky et al. (2011), QR is significant as a worldview not only as an intrinsic part of the human services vocation, but also from the research viewpoint since it stresses the complexity of human experience and the sociocultural context wherein humans operate. It is thus essential for students to know how to conduct QR and internalize its prerequisite tenets (Goussinsky et al., 2011). Such tenets

include, among many other factors, acquaintance with such QR data analysis approaches as Grounded Theory, low generalizability or external validity of QR, researcher subjectivity, etc.

However, as Watt (2007) argues, becoming a qualitative researcher is, in fact, an endless process. According to Connolly (1998), the objective of QR is to gain insight into specific social, educational, and domestic procedures and practices which exist within a particular context. One of the features of QR is thus to define “how people negotiate meaning” (Bogdan & Biklen, 2003, p. 6). Therefore, qualitative researchers seek to extract meaning from their data in an attempt to obtain deep insights into the phenomena, study the phenomena in their natural settings and try to interpret them with regard to the meanings people attach to them (Lincoln & Denzin, 2000).

QR is of paramount importance in Applied Linguistics and many other scholarly fields. It is, thus, essential to determine the challenges researchers face when conducting QR. According to Medway (2002), the genre of QR is fuzzy and a “fuzzy genre” might have “many modes of realizations” (p. 14). That is, since QR is rather new and appeared as an independent approach to research only in the late 1960s and 1970s, its genre is “not-well-defined” (Belcher & Hirvela, 2005, p. 187). Recently, because of the paradigm shift occurring in research inquiry, graduate students need to conduct at least one piece of QR during their whole program in Applied Linguistics to get acquainted with the tenets of the concept practically. However, little research seems to have been conducted dealing with the challenges the graduate students of Teaching English as a Foreign Language (TEFL), as a sub-branch of Applied Linguistics, confront while conducting QR. Therefore, the present study was an attempt to investigate the challenges lying in the way of conducting QR by graduate students of TEFL.

What is Qualitative Research?

QR is often conducted to answer the questions of “why” and “how” (Ring et al., 2011) and is based on a constructivist or descriptivist paradigm positing there are various constructed realities which are context-bound, time- and culture-specific, and can be investigated by exploring people’s experiences and by probing what is happening in social situations (Johnson & Onwuegbuzie, 2004; Morgan, 2007). QR highlights exploring and understanding “... the meaning individuals or groups ascribe to a social or human problem” (Creswell, 2014, p. 4). Although QR can also be deductive and abductive in nature (Saldaña, 2014), it is usually described as inductive, which posits that reality is a social construct, that variables are complex and not easily measurable, that there is a priority of topic and that the data gathered would include an emic perspective (Rovai et al., 2014).

Denzin and Lincoln (2005) argue, “qualitative research is difficult to define clearly” and “qualitative research is many things to many people” (p. 10). Echoing this, Ahmed and Ahmed (2014), also assert that because QR is process dependent and the process is rather diverse, it is difficult to define QR precisely. Similarly, Mackey and Gass (2005) maintain QR is based on descriptive data that do not use heavy statistical procedures and analyses. They add, the main characteristics of QR include rich description, small sample size, emic perspective (i.e., it invokes the participants’ perspective and inner thoughts and feelings about a phenomenon), natural and holistic representation and cyclical and open-ended processes (Mackey & Gass, 2005).

The sources on QR methods give almost nothing on the challenges the researchers, especially the novice ones, face while conducting QR for the first time (Baxter & Jack, 2008; Peredaryenko & Krauss, 2013; Xu & Storr, 2012). Due to the verbal nature, diversity, and complexity of QR, even the researchers who view themselves as proficient writers, regard conducting QR demanding (Belcher & Hirvela, 2005; Mehra, 2002; Meloy, 1994). In addition,

what makes QR even more complex is the fuzziness or vagueness of its genre (Belcher & Hirvela, 2005) as mentioned earlier.

Empirical Studies on Qualitative Research

Various studies have been conducted on QR in such disciplines as social sciences and healthcare. For one, Meloy (1994) conducted a study with twenty different dissertation writers focusing on the narrative experiences of novice qualitative researchers. The findings of the study showed that due to the tremendous diversity of approaches and experiences which existed on QR, there was no standard and specified format for analyzing and presenting the data. This lack of standard format supports the vague genre of qualitative inquiry (Medway, 2002) which could result in suspicion and unrest for students who face it for the first time. However, lack of a standard format for data analysis is one of the main challenges that students may confront while conducting QR. In another study, Li and Searle (2007), explored the students' experiences of conducting qualitative data analysis. They indicated the main challenges of data analysis included, "failure to distinguish researcher and actor categories, overinterpretation of evidence, and knowing where to start coding" (p. 1442). Li and Searle showed data analysis in QR was vague for inexperienced researchers. However, although, they investigated data analysis challenges faced by students, they did not provide any recommendations on how to obviate the challenges that inexperienced researchers faced in conducting the whole procedure of QR.

In another study, Wang (2013) investigated the challenges students faced when they first encountered the QR paradigm. By conducting interviews with students, class observations, think-aloud protocols, and students' written artifacts, Wang revealed the main problems novice researchers faced in conducting QR included understanding the qualitative research paradigm, particularly the notions of subjectivity and validity, determining how to conduct a rule-governed data analysis, becoming acquainted with the ways of presenting qualitative results, and additionally, enhancing their knowledge of the given discipline. Finally, he concluded the participants felt uncomfortable in the interpretation of meaning and they were mainly concerned about the subjectivity of their interpretations. Understanding the role of themselves in interpreting the data and data analysis as well as lack of knowledge about the given topic were other challenges faced by novice researchers.

According to Cooper, Chenail, and Fleming (2012), QR learning seems to involve considerable anxiety and emotional confusion on the part of researchers especially when learning how to carry out data analysis (Li & Searle, 2007; Raddon et al., 2009; Richards, 2011) and the feeling of excitement when they get real research experience (Hein, 2004; Keen, 1996). In a study conducted by Cooper, Fleisher, and Cotton (2012), the participants maintained that learning QR included experiencing a variety of positive and negative feelings. Many participants felt confusion and anxiety when they were exposed to new methodologies and terminology. While unfamiliarity with the basic concepts within qualitative inquiry caused confusion, the lengthy process of data analysis appeared to lead to disappointment or the feeling of being overwhelmed. Furthermore, Stahlke (2018) argues QR researchers themselves also encounter such ethical risks as the emotional impact of research on sensitive topics although ethics on QR have conventionally highlighted participant risk. Stahlke investigated unanticipated ethical challenges during her research on nursing work. These challenges included listening and replying to incompatible participant statements, listening to painful narrations, dealing with the high expectations of research participants regarding the goals and results of the research, and the possibility of the researchers confronting occupational marginalization due to the socio-political nature of the research, all of which show the researchers' ethical distress and unrest in conducting QR. Moreover, some studies (e.g.,

Dearnley, 2005; Hoskins & White, 2013; Johnson & Clarke, 2003) concluded the data collection challenges of QR comprised, among other things, resistance of the participants to cooperate, confusion over whether to dress formally or informally for an interview, lack of enough experience for conducting interviews, and feeling of seclusion from other researchers and peers during the data collection procedure. Furthermore, Nyika (2018) argued the most challenging aspect of conducting QR in his doctoral journey was data collection which included participant recruitment, scheduling of research activities, subjects' reluctance to participate due to their busy schedule, and contacting with school principals as gatekeepers. By the same token, Mannheimer et al. (2019) described the challenges of qualitative data sharing including adoption of a large pool of data, copyright concerns, and jeopardy of decontextualization in QR that academic libraries and data repositories cannot specifically address. Accordingly, while academic libraries and data repositories are not able to provide straightforward solutions to the challenges mentioned, they can link researchers to other related specialists to investigate these challenges more deeply and to help them address the challenges of ethical and legal qualitative data sharing.

Khankeh et al. (2015) conducted a study inquiring about the practical challenges of conducting QR in the field of Health. The results of their study showed novice researchers had problems in legitimizing their methodology of selection and sometimes experienced some degree of methodological elimination. That is, they did not have any clear and vivid understanding of the process of inquiry in terms of the data collection procedure, data analysis, and even a suitable sampling plan, which should be identified based on the methodological principles. Hence, their primary concern was to find a proper design to conduct QR, and an appropriate methodology to answer the research questions. Inadequate methodological knowledge, contradiction between research question and methodology, and lack of attention to the principles of qualitative methodology were among the major challenges found by Khankeh et al. (2015). Furthermore, they reported that the main concern of inexperienced researchers was to find the rationale and a suitable design to do QR and the appropriate methodology to answer the questions.

Thummapol et al. (2019) stated that the methodological challenges of conducting QR are greatly prevalent in terms of the vulnerability of the researcher, for which many inexperienced researchers are not well trained and prepared, an issue which places major emotional demands on the researchers. In healthcare research, vulnerable people, for instance, may include those who are “. . . susceptible to being harmed, wronged, exploited, mistreated, discriminated against or taken advantage of...” (Ganguli-Mitra & Biller-Andorno, 2011, p. 239). These people are more prone to social exclusion, discrimination, and deprivation from services and resources (Ebert et al., 2011; Wilkinson & Marmot, 2003). The study of Thummapol et al., in fact, presented the reflections of the fieldwork experience of a doctoral researcher, especially with regard to the methodological problems faced in conducting research with vulnerable women in rural areas of northern Thailand. The challenges included selecting a field site, recruiting and making trust, retaining confidentiality and privacy, etc.

Likewise, Chenail and George (2009) asserted one of the main challenges for inexperienced qualitative researchers was how to bring the various parts of a QR paper into a coherent whole. They concluded that the individual sections of a QR paper such as literature review, method, results, discussion, and conclusion needed to be built in a logical manner though many QR papers lack the adjustment of these sections into a coherent form (Chenail & George, 2009). Similarly, Marshall and Rossman (1995) found that qualitative researchers faced at least three challenges in conducting QR which included developing a “thorough, concise, and elegant conceptual framework” (p. 5), planning a “systematic and manageable yet flexible” design (p. 5), and the capability to incorporate these into a “coherent document that

convinces the proposal reader...that the study should be done, can be done, and will be done” (p. 6).

Significance of the Study

The extensive review of the related literature in the field on the topic showed that the studies on the challenges of QR have been conducted either almost exclusively by researchers with their own students or have focused on a single part of QR. Based on the extensive review of the related literature, we found no study investigating challenges of TEFL graduate students in conducting QR. Therefore, to fill this gap in the literature, the study aimed at investigating the challenges faced by Iranian TEFL graduate students in conducting QR. Since many TEFL graduate students in the world in general and in Iran in particular seem to avoid conducting QR, the conduct of the present study was deemed essential, legitimized and justified. The study is also significant in that it presents some practical solutions to obviate the challenges lying in the way of conducting QR, drawing upon the voices of TEFL graduate students. The outcome of the study can thus provide some recommendations or solutions to foreign language education policy makers and educational systems in order to obviate the challenges found.

Research Questions

The following research questions are formulated in the present study:

1. What are Iranian TEFL graduate students' research preferences?
2. What are the reasons for the possible lack of sufficient knowledge of Iranian TEFL graduate students in conducting QR?
3. What are the most important aspects of QR from Iranian TEFL graduate students' points of view?
4. What are the most challenging parts of QR faced by Iranian TEFL graduate students?
5. What can be done to obviate the challenges faced by Iranian TEFL graduate students in conducting QR?

Method

Context

The first author of the study is a professor of Applied Linguistic who has been teaching the research methodology course at both undergraduate (i.e., B.A. level) for nearly 20 years and at graduate (both M.A. and Ph.D. levels) for 10 years now. The second author is a Ph.D. candidate in TEFL, as a sub-branch of Applied Linguistics, who took and passed the (research methodology) course with the first author who is also her dissertation supervisor. In partial fulfilment of the requirements of the course (i.e., research methodology), the second author needed to conduct a study as a term project which motivated her and paved the way for the conduct of the present study. Based on our own experience, we knew that the majority of the research studies conducted by Iranian graduate students of TEFL, especially M.A. students were quantitative in nature, a trend which also seems to apply, more or less, to Applied Linguistics research conducted throughout the world although we know that the trend has more recently changed in favor of mixed methods research. Thus, to probe this (i.e., why Iranian graduate students of TEFL did not show enough interest in qualitative research and what the possible challenges and solutions were in this respect), we conducted the current study to find

answers to a problem we observed in our immediate environment. Due to the practical nature of the topic and its relevance to mixed-methods research (MMR), the analysis acted as a pilot study for and was developed to the second author's dissertation on the investigation of the challenges of conducting MMR in addition. In these two related projects, we thus aimed at finding the challenges and offering some solutions in an attempt to obviate the problems in conducting the two important research trends or designs (QR and MMR) in the field of Applied Linguistics and TEFL.

2.2. Research Design

The current study followed a mixed-methods approach that enjoys the advantages of both quantitative and qualitative methods. The combination and triangulation of both quantitative and qualitative data create an in-depth understanding of a phenomenon, present a comprehensive image of the problem, and enhance readers' understanding of the issue under investigation (Creswell & Plano Clark, 2007; Mingers, 2001). The type of mixed methods design adopted in the present study was a sequential exploratory one. In this type of design, the researcher begins with a phase of qualitative data collection and analysis which then ends in a quantitative data collection and analysis phase. Hence, the qualitative phase receives priority in this type of design. The results of the two phases (i.e., qualitative and quantitative) are then incorporated during the interpretation stage (Creswell et al., 2003). Morgan (2007) maintains that this design is the right one to choose and use when assessing the components of an emergent theory emanating from the qualitative phase that is then adopted to generalize qualitative results to different samples. In sum, researchers using this design start with qualitative data, and then, expand it to a second quantitative phase and based on the results of the former (i.e., the qualitative phase), identify variables and develop instruments in order to conduct the quantitative phase.

Participants

The participants for the qualitative phase included 20 (out of 100) graduate (i.e., M.A. and Ph.D.) students majoring in TEFL selected based on convenience sampling. The participants for the quantitative phase of the study incorporated 100 graduate students (i.e., 83 M.A. students and 17 Ph.D. candidates) from different universities across the country. The selection of the participants was based on purposive and convenience sampling, and the criterion for selection was for the participants to have passed the research methodology course which is entitled as "Qualitative and Quantitative Research in Language Education" in the M.A. program and "Research in Language Education" in the Ph.D. program on TEFL, prepared and designed by the Iranian Ministry of Science, Research and Technology (MSRT). This course is, in fact, one of the main and essential courses in the curriculum of Iranian universities for graduate students of TEFL who all need to pass it as a prerequisite course before compiling their theses and dissertations. Before gathering the data, all the participants were asked whether they had passed the course based on their self-report. Fifty-seven participants were male and forty-three of them were female. In part, the reason behind selecting the participants from the population of graduate students was to work with a sample of student participants who already had some practical experience in conducting research. The informed consent of the participants for both qualitative (i.e., interview) and quantitative (i.e., questionnaire survey) phases of the study was obtained before the study began. They were also assured of their anonymity and the confidentiality of the data by completing a consent form which also included statements protecting their safety and privacy.

Instrumentation

Semi-Structured Interview

Since we found no specific measure in the literature for exploring the participants' viewpoints on QR, we conducted an individually-based in-person semi-structured interview containing general questions to obtain their personal points of view regarding QR. We conducted the interview with 20 participants who were selected based on their availability from among the participants of the study to gain some deeper insights into the issue (of qualitative research) and to pave the ground for constructing the items of the questionnaire. To do so, the researchers used the recurring themes and the common patterns of the participants' responses to interview questions as the bases for the items of the questionnaire. In order to validate the semi-structured interview, two experts in the field, holding Ph.D.s. in Applied Linguistics with an interest in qualitative inquiry, viewed and commented on it, and we made the necessary adjustments in the wording and content of the questions based on their views and comments.

Structured Questionnaire

A researcher-made questionnaire consisting of 30 five-point Likert-scale items was adopted to gain the viewpoints of the participants on QR. The items of the questionnaire were extracted based on an extensive literature review on the topic and the results of the semi-structured interview. The researchers postulated that the QR questionnaire survey consisted of five underlying dimensions (or factors): research preferences, sources of possible lack of sufficient knowledge in conducting QR, the main aspects of QR, the challenging parts of QR and finally the solutions to obviate the challenges thought to impede the conduct of QR. To discover these structures or dimensions with the present sample, the items of the questionnaire were subjected to a principal component factor analysis with 100 participants of the study. First, the results of KMO Measure of Sampling Adequacy and the Bartlett's Test of Sphericity are presented in Table 1.

Table 1
Results of KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.65
Bartlett's Test of Sphericity	Approx. Chi-Square	778.80
	Df	190
	Sig.	.000

After running factor analysis (Appendix A), 10 items of the questionnaire, the loadings of which were below 0.4 were eliminated and the final version of the questionnaire was left with 20 items, the loadings of which were strong enough (above 0.4) with regard to the five components mentioned earlier. The results of factor analysis are presented in Appendix A. Cronbach's Alpha reliability analysis was utilized for the estimation of the internal consistency of the questionnaire, the results of which showed a reliability index of 0.74 that is deemed acceptable. It is worth mentioning here that in order to ensure the content validity of the

questionnaire, the questionnaire was viewed by two experts in the field before being subjected to factor analysis, according to the views of whom, some adjustments were made.

Qualitative and Quantitative Data Collection Procedure

The semi-structured interviews were conducted with 20 of the participants selected as described earlier within a week. Each interview typically took 15 to 20 minutes. The second researcher asked five questions to elicit the necessary data from the participants whose answers to interview questions were audio recorded. Before conducting the interview sessions, the participants were informed about the purpose of the study and their informed consent was obtained.

To gain the ideas and responses of many more participants objectively and to triangulate the data, a researcher-made questionnaire was also constructed as mentioned earlier. The whole process of questionnaire administration took a week, and each questionnaire took, on average, 25 minutes to be completed by the participants. The participants were fully informed of the purpose of the study and were assured their answers to both the questionnaire and the interview questions would be kept confidential and would be used only for the purposes of the present study. Moreover, for the sake of anonymity and research ethics, we did not use the real names of the participants in reporting the results. The administration and collection of the questionnaire were done both via e-mail and face-to-face meetings.

Data Analysis

For analyzing the qualitative data, the audio-recorded interviews were transcribed and subjected to content analysis, that is, the recurring themes and the common patterns of the responses were identified, coded, and finally “quantitized” (Dörnyei, 2007, p. 269) and subjected to frequency analysis. Tashakkori and Teddlie (1998) regard “quantitizing” data as a key operation in mixed methods data analysis. The term refers to transforming qualitative data into numeric codes that can be further processed statistically (Dörnyei, 2007). Thus, particularly outstanding qualitative themes are numerically displayed either in scores or scales (Dörnyei, 2007). In the current study, the researchers represented the qualitative themes in numbers by citing how many times the given theme was mentioned in the participants’ responses (i.e., frequency analysis). Before quantitizing, in the coding phase, the texts (i.e., the transcribed interviews) were read several times to obtain the total meaning of the data, and the relevant themes and patterns in the texts were highlighted and labeled (Dörnyei, 2007). Dörnyei (2007) states coding makes the particular and lengthy pieces of information pliable and manageable (i.e., simplifies the data), so that they can be easily identified, modified, and grouped.

The study adopted the methodological triangulation in order to minimize the weaknesses of a single-approach research design and to maximize both the internal and external validity of research (Dörnyei, 2007). Therefore, for triangulation purposes, after gathering the quantitative data (i.e., the participants’ responses to the questionnaire items), we calculated descriptive statistics (e.g., mean, standard deviation, frequency, percentage, etc.), and ran inferential statistics (e.g., one-sample *t*-test) through SPSS (Statistical Package for Social Sciences) version 23.0.

Results

Results of the Qualitative Phase (i.e., Interview Results)

As mentioned earlier, a semi-structured interview consisting of five questions, was conducted with 20 participants whose responses to which were audio-recorded, transcribed, coded, and subjected to frequency analysis. The results are presented in Table 2.

Table 2

The Results of Semi-Structured Interview with TEFL Graduate Students

Questions	Response	Frequency	Percent
1. If you want to conduct a research study, which one do you prefer? Qualitative, quantitative or mixed-methods?	Qualitative	3	15
	Quantitative	3	15
	Mixed-methods	14	70
2. Who do you think is to blame for lack of sufficient knowledge on qualitative research? (Educational system, professors, students, textbooks, etc.).	None of them	1	5
	Educational system	11	55
	Professors	1	5
	Students	1	5
	Textbooks	0	0
3. What aspect or part of qualitative research is more <i>important</i> ?	Data analysis	6	30
	Data interpretation	6	30
	Data collection	3	15
	Validity of the results	1	5
	Theoretical framework	1	5
	All aspects	3	15
4. What aspect or part of qualitative research is more <i>challenging</i> ?	Data analysis	9	45
	Data interpretation	6	30
	Data collection	2	10
	Validity	1	5
	Reliability	1	5
5. Should qualitative research be incorporated in M.A. and Ph.D. programs in TEFL as a separate course?	Yes	13	65
	No	5	25
	Not sure	2	10

The common patterns and the recurring themes of the participants' responses are displayed in Table 2. As Table 2 shows, in response to the first question of the interview, 70 percent of the participants preferred mixed-methods approach to research. They believed that by conducting mixed-methods research, the research problems were investigated thoroughly from different perspectives and the results were more valid and dependable. In support of belief, one of the participants remarked, "I prefer conducting a mixed approach where both [i.e., quantitative and qualitative approaches] are applied. Because the combination of both offers a more comprehensive understanding of the problem, and the researcher feels more confident in analyzing and discussing the results." Another one stated, "Absolutely mixed methods! Investigating [a given phenomenon] from different angles results in in-depth and comprehensive results."

Regarding the second interview question, 55 percent of the participants blamed the educational system for lack of sufficient knowledge of QR. They pointed out that the educational facilities were not sufficient for conducting QR and the research methodology course was not enough to equip them to conduct QR. Moreover, they added the focus of the educational system was mainly on the quantitative approach. One of the interviewees, for instance, maintained, "Certainly, the educational system is to blame because in Iran many systems do not provide the necessary facilities for conducting qualitative research; furthermore, it doesn't focus on qualitative and quantitative approaches separately and in detail."

Concerning the third question of the interview, 30 percent of the participants equally viewed data analysis and data interpretation as the most important aspects of QR. As one of the participants remarked, "Data analysis is the most important aspect because the ultimate result of the study depends on the data analysis. So, it must be done with great care." Another one noted, "Actually, the most important aspect is data analysis because it is the heart of the qualitative approach and since qualitative research does not deal with statistics, accurate data analysis is of significant importance." They believed that data analysis and data interpretation were interwoven in such a way that they enjoyed the same importance. As one of them said, "You couldn't have comprehensive interpretation without a good data analysis and also a precise interpretation without complete data analysis is impossible."

With regard to the fourth interview question, 45 percent of the participants viewed data analysis as the most challenging part of QR. Advocating this, one of the participants stated, "Data analysis makes the research more challenging for [a] researcher because he himself [or she herself] should make a decision correctly based on the observation and without any statistics and also how and where to start coding with the bulk of obtained data which is confusing and disappointing at first glance." Another one remarked, "The ability to discover a pattern in many tiny pieces of data is demanding and challenging for me in conducting qualitative research because I really don't know how to start coding the data practically which I have only learned theoretically." And another one noted, "I don't know how to do [the] grounded theory although I'm familiar with its stages theoretically. Actually, in our research methodology course, the focus is mainly on the theoretical aspects of analyzing the data and most of the time, [the] professors skip working on analyzing the data because of the shortage of time. So, the students do not get familiar [with] how to analyze the data practically which in my view, is the Achilles' heel of our research methodology courses." These views and statements sufficiently show data analysis is one of the most challenging parts of QR.

Finally, 65 percent of the participants agreed that QR should be incorporated in M.A. and Ph.D. programs in TEFL as a separate course of inquiry in order to obviate the challenges of conducting QR which were addressed by the last interview question. One of the interviewees, for instance, stated, "Due to the importance and complexity of qualitative research in TEFL, it should be taught as a separate course although this course needs an intellectual professor." Another one remarked, "Because the domain of qualitative research is

so vast, therefore, it requires practical experiences.” They believed that a set of applied courses on QR for graduate students should be provided to enable them to conduct QR practically.

Results of the Quantitative Phase (i.e., Questionnaire Results)

Results of the First Research Question

First of all, a normality test (i.e., Kolmogorov-Smirnov^a test) was run to make sure that the distribution of the data was normal. Table 3 illustrates the results of Kolmogorov-Smirnov^a test. As displayed in Table 3, all sets of scores were normally distributed ($p > .05$).

Table 3

Results of Kolmogorov-Smirnov^a Normality Test

Item No.	Kolmogorov-Smirnov ^a		
	Statistic	df	Sig.
1	.17	100	.08
2	.22	100	.15
3	.30	100	.19
4	.22	100	.20*
5	.27	100	.10
6	.25	100	.15
7	.26	100	.20*
8	.28	100	.09
9	.25	100	.07
10	.23	100	.14
11	.23	100	.20*
12	.25	100	.20*
13	.20	100	.18
14	.25	100	.99
15	.22	100	.14
16	.27	100	.20*
17	.23	100	.06
18	.18	100	.20*
19	.16	100	.12
20	.26	100	.17

Note. This is a lower bound of the true significance.

The first research question of the study addressed Iranian TEFL graduate students' research preferences. In order to answer the first research question objectively, first, descriptive

statistics for the participants' responses to the questionnaire items were calculated. Table 4 shows the results of descriptive statistics of items 1, 2, and 3 (i.e., the first factor).

Table 4
Descriptive Statistics for the First Factor

Item No.	Item Title	Mean	Std. Deviation	SD P	D P	U P	A P	SA P
1	Quan	2.95	1.15	2.0	12.0	20.0	48.0	18.0
2	Qual	2.91	.87	2.0	25.0	27.0	36.0	10.0
3	Mixed	4.39	.82	2.0	5.0	16.0	44.0	33.0

Note. SD=strongly disagree, D=disagree, U=undecided, A=agree, SA=strongly agree, P=percentage

As indicated in Table 4, 66 percent of the participants agreed and strongly agreed with item 1 (i.e., they preferred quantitative research). Forty six percent of the participants agreed and strongly agreed with item 2 (i.e., they preferred qualitative research). Finally, 77 percent of the participants agreed and strongly agreed with item 3 (i.e., they preferred a mixed-methods one). Table 4 also indicates the mean and SD values for the first three items of the scale representing the subscale of research preference. As shown, the mean and SD values for Items 1, 2 and 3 are 2.95 and 1.15, 2.91 and .87, and 4.39 and .92, respectively.

One-sample *t*-test was then run and value 3 was set as the test value since mean values above 3 indicated preference or positive attitude of the respondents towards each proposition, while mean values lower than 3 indicated lack of preference or negative attitude of the respondents towards each proposition. Considering the nature of the items, only if the difference was significant and positive, the responses to the item would indicate the agreement of the respondents to the proposition posed by the related item. Table 5 shows the results of One-sample *t*-test for the first factor.

Table 5
Results of One-Sample t-Test for the First Factor

Item No.	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
1	-.43	99	.66	-.05	-.27	.17
2	-1.02	99	.30	-.09	-.26	.08
3	16.79	99	.00	1.39	1.22	1.55

The results presented in Table 5 reveal a significant probability value with a positive mean difference ($t(99) = 16.79$, $p = .000$, mean difference = 1.39) for Item 3 only, indicating the tendency of the participants for conducting mixed-methods research which corroborates our interview findings in this respect reported earlier.

Results of the Second Research Question

In order to answer the second research question which explored the sources of possible lack of sufficient knowledge of Iranian TEFL graduate students in conducting QR, descriptive statistics of the participants' responses to the questionnaire items were calculated. Then, like the procedure taken for the first research question, a One-sample *t*-test was run and value 3 was set as the test value. First, Table 6 shows the results of descriptive statistics of items 4, 5, 6, 7, and 8 (i.e., the second factor).

Table 6
Descriptive Statistics for the Second Factor

Item No.	Item title	Mean	Std. Deviation	SD P	D P	U P	A P	SA P
4	All educational elements	3.13	1.13	8.0	25.0	22.0	36.0	9.0
5	Educational system	3.94	1.10	15.0	12.0	36.0	17.0	20.0
6	professors	2.42	.79	6.0	44.0	34.0	15.0	1.0
7	students	2.44	.94	14.0	38.0	23.0	20.0	5.0
8	textbooks	2.63	.91	5.0	37.0	27.0	25.0	6.0

As Table 6 indicates, 45 percent of the participants agreed and strongly agreed with item 4 (i.e., all the educational elements including educational system, professors, students, and textbooks were to blame). Thirty seven percent agreed and strongly agreed with item 5 (i.e., the educational system was to blame). Sixteen percent of the participants agreed and strongly agreed with item 6 (i.e., they thought the fault lay with professors). Twenty five percent of the participants agreed and strongly agreed with item 7 (i.e., they blamed the students themselves for lack of sufficient knowledge of QR). Finally, 31 percent of the participants agreed and strongly agreed with item 8 (i.e., the textbooks were to blame). Table 6 also indicates the mean and SD values for items 4 to 8 of the questionnaire representing the sources of lack of knowledge of QR. As shown, Item 5 received the highest mean value ($M = 3.94$, $SD = 1.10$), while Item 6 had the lowest mean value ($M = 2.42$, $SD, 0.79$). Table 7 shows the results of One-sample *t*-test for the second factor.

The results in Table 7 reveal a significant probability value with a positive mean difference ($t(99) = 8.48$, $p=.000$, mean difference = 0.94) for Item 5, indicating the tendency of the participants to blame the educational system for the lack of sufficient knowledge of QR which supports our qualitative (i.e., interview) results in this regard.

Table 7
Results of One-Sample T-Test for the Second Factor

Item No.	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
4	1.14	99	.25	.13	-.09	.35
5	8.48	99	.00	.94	.72	1.15
6	-7.30	99	.00	-.58	-.73	-.42
7	-5.91	99	.00	-.56	-.74	-.37
8	-4.03	99	.00	-.37	-.55	-.18

Results of the Third Research Question

In order to answer the third research question which sought to find the most important aspect of QR from Iranian TEFL graduate students' points of view, first, the descriptive statistics for the participants' responses to items 9, 10, and 13 of the questionnaire survey (i.e., the third factor) were calculated which are presented in Table 8.

Table 8
Descriptive Statistics for the Third Factor

Item No.	Item title	Mean	Std. Deviation	SD P	D P	U P	A P	SA P
9	Data analysis	3.80	1.10	2.0	15.0	15.0	37.0	31.0
10	Data interpretation	3.03	1.11	2.0	4.0	19.0	58.0	17.0
13	All aspects	2.58	1.12	0.0	22.0	36.0	34.0	8.0

As Table 8 indicates, 68 percent of the participants agreed and strongly agreed with item 9 (i.e., the most important aspect of QR was data analysis). Seventy five percent of the participants agreed and strongly agreed with item 10 (i.e., considered data interpretation as the most important aspect of QR). Finally, 42 percent agreed and strongly agreed with item 13 (i.e., regarded all aspects of QR as being important). Table 8 also indicates the mean and SD values for items 9, 10, and 13 (i.e., the factor representing the important aspects of QR). As shown, Item 9 received the highest mean value ($M = 3.80$, $SD = 1.10$), while Item 13 had the lowest mean value ($M = 2.58$, $SD, 1.12$). The results of One-sample *t*-test are now presented in Table 9.

Table 9
Results of One-Sample T-Test for the Third Factor

Item No.	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
9	7.26	99	.00	.80	.58	1.01
10	.26	99	.78	.03	-.19	.25
13	-3.74	99	.00	-.42	-.64	-.19

As the results in Table 9 indicate, a significant probability value with a positive mean difference ($t(99) = 7.26$, $p = .000$, mean difference = 0.80) was observed for Item 9, indicating the tendency of the participants to consider data analysis as the most important aspect of QR which, at least, partially corroborates our qualitative findings in this respect as shown by the participants' responses to the third interview question wherein they considered both data analysis and data interpretation as being equally important in conducting QR.

Results of the Fourth Research Question

In order to answer the fourth research question which explored the most challenging part of QR from Iranian TEFL graduate students' points of view, first, descriptive statistics for the participants' responses to items 14, 15, 16, 17, 18, and 19 of the questionnaire (i.e., the fourth factor) are summarized in Table 10.

Table 10
Descriptive Statistics for the Fourth Factor

Item No.	Item title	Mean	Std. Deviation	SD	D	U	A	SA
				P	P	P	P	P
14	Data collection	2.96	2.34	4.0	20.0	23.0	45.0	8.0
15	Data coding	2.99	1.18	4.0	13.0	24.0	39.0	20.0
16	Data analysis	4.30	.81	7.0	17.0	43.0	24.0	9.0
17	Data interpretation	2.83	1.42	4.0	19.0	54.0	18.0	5.0
18	Reliability estimation	2.92	1.04	1.0	14.0	25.0	51.0	9.0
19	Validity estimation	3.09	1.23	3.0	10.0	23.0	40.0	24.0

As Table 10 indicates, 53 percent of the participants agreed and strongly agreed with item 14 (i.e., the most challenging aspect of conducting QR was data collection). Fifty nine percent

agreed and strongly agreed with item 15 (i.e., data coding). Thirty-three percent of them agreed and strongly agreed with item 16 (i.e., data analysis). Twenty-three percent of the participants agreed and strongly agreed with item 17 (i.e., data interpretation). Sixty percent of the participants agreed and strongly agreed with item 18 (i.e., reliability estimation). Finally, 64 percent of the participants agreed and strongly agreed with item 19 (i.e., validity estimation). Table 10 also indicates the mean and SD values for items 14 to 19 of the fourth factor or sub-scale (i.e., the challenging parts of QR). As shown, Item 16 received the highest mean value ($M = 4.30$, $SD = 0.81$), while Item 17 gained the lowest mean value ($M = 2.83$, $SD, 1.42$). Table 11 shows the results of One-sample t -test for the fourth factor.

Table 11
Results of One-Sample t -Test for the Fourth Factor

Item No.	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
14	-.17	99	.86	-.04	-.50	.42
15	-.08	99	.93	-.01	-.24	.22
16	16.04	99	.00	1.30	1.13	1.46
17	-1.19	99	.23	-.17	-.45	.11
18	-.76	99	.44	-.08	-.28	.12
19	.72	99	.47	.09	-.15	.33

As shown in Table 11, a significant probability value with a positive mean difference ($t(99) = 16.04$, $p = .000$, mean difference = 1.30) was observed for Item 16, indicating the tendency of the participants to consider data analysis as the most challenging part of conducting QR which fully supports our interview findings in this respect as shown by the interviewees' responses to the fourth interview question.

Results of the Fifth Research Question

In order to answer the fifth research question which sought solutions to obviate the challenges of conducting QR, first, descriptive statistics for the participants' responses to items 11, 12, and 20 of the questionnaire (i.e., the fifth factor) are summarized in Table 12.

As Table 12 indicates, 57 percent of the participants disagreed and strongly disagreed with item 11 (i.e., the current research course at the M.A. and Ph.D. level is enough to familiarize students with QR). Sixty three percent agreed and strongly agreed with item 12 (i.e., that QR needed to be incorporated as a mandatory independent course in graduate studies curricula). Finally, 60 percent agreed and strongly agreed with item 20 (i.e., at least one QR study must be conducted by graduate students). Table 12 also shows the mean and SD values for items 11, 12, and 20 (i.e., the factor or sub-scale of adequacy of focus on QR at the M.A. and Ph.D. levels). As shown, Item 12 received the highest mean value ($M = 4.09$, $SD = .88$), while item 11 had the lowest mean value ($M = 2.51$, $SD, 1.20$). Table 13 shows the results of One-sample t -test for the fifth factor.

Table 12
Descriptive Statistics for the Fifth Factor

Item No.	Item title	Mean	Std. Deviation	SD	D	U	A	SA
				P	P	P	P	P
11	The current research course is enough.	2.51	1.20	23.0	34.0	17.0	21.0	5.0
12	QR needed to be incorporated in the syllabus.	4.09	.88	1.0	13.0	23.0	37.0	26.0
20	Conducting one QR must become obligatory.	4.08	.92	4.0	13.0	23.0	45.0	15.0

Table 13
Results of One-Sample t-Test for the Fifth Factor

Item No.	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
11	-4.07	99	.00	-.49	-.72	-.25
12	12.26	99	.00	1.09	.91	1.26
20	11.63	99	.00	1.08	.89	1.26

Discussion

The study explored the challenges faced by Iranian TEFL graduate students in conducting QR and their suggested solutions on how to obviate them. To do so, 20 participants were interviewed in the qualitative phase and 100 participants were asked to complete a questionnaire in the quantitative phase (i.e., questionnaire survey). The results of the interviews, corroborated by the questionnaire findings, indicated the participants mainly tended to conduct mixed-methods research, most of the participants blamed the educational system

for their lack of sufficient knowledge in conducting QR, and data analysis was the most important aspect as well as the most challenging part of QR. The participants also tended to have the QR as an independent research methodology course and deemed it essential to be obliged to conduct at least one QR study during their graduate studies program in order to practically observe and obviate the challenges in conducting QR.

The first research question explored the views of TEFL graduate students concerning research method/paradigm preferences. The results of both questionnaire survey and interview revealed the participants mainly tended to conduct mixed-methods research because they believed, in this approach, the research problems could be investigated from different perspectives. According to the findings of the study, it can be concluded that in mixed-methods approach, some dimensions of a certain topic can be better clarified by quantitative scrutiny while some other dimensions of the same study can be illuminated through qualitative exploration more profoundly. This stance of the participants seems to stand to reason because the goal of mixed-methods research is to reach the findings that might be more dependable and provide a more complete explanation and a more comprehensive picture of the research problem at hand that either approach alone could not provide, a line of reasoning also supported by the interview participants' comments in this respect as cited earlier.

In line with this finding, Onwuegbuzie and Leech (2005) note that, as the researchers attempt to address complex research questions that arise, mixing qualitative and quantitative research enables them to be more pliable and holistic in their survey. In addition, this approach helps researchers develop a conceptual framework and accredit quantitative results by linking them to the data elicited from the qualitative exploration (Madey, 1982). According to Atai et al. (2018), TEFL graduate students' preference is now mixed-methods approach for both solving problems and publishing papers. As professors and TEFL graduate students of Applied Linguistics typically deal with human beings in their studies, mixed and qualitative methods can be highly beneficial for investigating the problems at hand (Atai et al., 2018). However, the dominant methodology in the Iranian academic context is a positivistic-based, scientism-oriented quantitative philosophy (Atai et al., 2018; Zokaei, 2008). Consequently, according to these findings and our results in this study, the educational system in Iran needs to focus more on QR in research methodology courses at graduate studies level, thereby training graduate students sufficiently in QR in order to prepare them to conduct their preferred research approach (i.e., mixed methods research), the prerequisite for which is an emphasis on and sufficient training in both qualitative and quantitative trends.

The second research question explored sources of possible lack of sufficient knowledge in conducting QR. The findings of the questionnaire survey showed most of the participants blamed the nation's educational system for this problem, which is also supported by the results of the interview in this respect. Our findings here can be corroborated by the results of Atai et al. (2018) who blame the overemphasis upon the positivistic methodological perspective on Iranian Applied Linguistics journals' desire for objectivity, which results in the bulk of the reviewers' comments addressing the quantitative part of the mixed-methods studies published in these journals, an assertion also supported by the observations of the first author of the study who is the editor-in-chief of a local Applied Linguistics journal. Moreover, due to this overemphasis on positivistic-based quantitative approach, the required facilities for conducting QR are not adequately provided by the educational system, an argument partially supported by the findings of Lotfabadi (2008) who asserts that one of the major problems for conducting research is shortage of facilities provided by the Iranian educational system.

Thus, it seems the graduate studies educational system in Iran, especially the curriculum, is to blame, because it merely concentrates on the theoretical aspects of research and does not require students to go through the systematic steps of conducting research practically. Another reason is the overemphasis of the system on quantitative research

paradigm, which has, in effect, left no room to focus on QR as mentioned above. That is, due to the dominance of the quantitative approach in the educational system, QR is often ignored in academic settings. Therefore, according to Sallee and Flood (2012), policymakers and stakeholders frequently employ quantitative research. The educational system also lacks criticality and creativity (Atai & Mazlum, 2013; Riazi, 2005; Soodmand Afshar & Movassagh, 2016) which might lead to students' demotivation and consequently a tendency to copy others' scientific products and reject domestic talents, a line of reasoning also corroborated by Yousefi (2014), who found that the most serious challenges of the educational system in Iran included, among other factors, lack of attention to creativity, "lack of coordination among educational and research policy,...and lack of coordination among different structures of research in education and lack of effective research strategy" (p. 229). It can thus be concluded that the educational system in Iran is the main source of lack of sufficient knowledge in conducting QR.

The third research question explored what the most "important" aspects of QR were from Iranian TEFL graduate students' points of view. The majority of the participants gave priority to the data analysis dimension of qualitative inquiry, both in the interview and in the questionnaire survey. Thus, it might be postulated that data analysis is the most important aspect and the cornerstone of qualitative inquiry upon which the results of the study and consequently, the discussions and implications are built. As Glesne and Peshkin (1992) state, data analysis entails organizing what has been collected so that the concept of what is learned can be made and conveyed. Data analysis occurs all over the research process; a research study is shaped and transformed as the research project goes forward, and the data is gradually converted into findings (Miles & Huberman, 1994).

Regarding the fourth research question, the results of the study indicated that the most "challenging" part of qualitative inquiry was data analysis. The findings of this study are in accordance with those of Medway (2002) who concluded lack of a standard format for data analysis was one of the serious challenges that students confronted while conducting QR, one of the major reasons for which might lie in the lack of rigorous predetermined formula for analyzing the data (Meloy, 1994) that could consequently make conducting QR challenging for especially novice researchers. The results of the present study are further in line with the findings of Li and Searle (2007), who argue data analysis is challenging because of overelaboration of evidence and lack of sufficient knowledge of where and how to start coding, which might reveal the fact that data analysis is a demanding task to undertake and comprises complex steps for coding the data. In fact, qualitative researchers often confront the challenge of condensing large amounts of qualitative data into few lines of text that should be demonstrative, descriptive, and indicative to make their results comprehensible to the readers (Black, 2006). This perception of challenge is supported by the remarks of the interview participants of the study who stated that QR data analysis started with large amounts of data, making sense of which was very demanding and posed a real challenge for them. Moreover, being able to get a general picture of the data in small details and remaining patient are among the main challenges during the QR data analysis process especially for inexperienced researchers.

It seems that lack of familiarity with the coding procedures in qualitative data analysis and the rather long duration of the process are among the reasons which make data analysis the most challenging part of qualitative inquiry. As Cooper, Fleisher, and Cotton (2012) conclude, the lengthy process of data analysis in QR seems to bring about disappointment, a feeling of exhaustion, and burnout. The results of the present study are, however, in contrast with those of Nyika (2018), Dearnley (2005), Hoskins and White (2013), and Johnson and Clarke (2003) who maintain that data collection is the main challenge in conducting QR. Moreover, the results of the study stand in contrast with those of Khankeh et al. (2015) who found presenting the

rationale behind and a suitable design for conducting QR and introducing an appropriate methodology to answer the research questions were the most challenging parts in conducting qualitative inquiry. Our results also contrast those of Wang (2013) who concluded data interpretation was the major challenge for researchers; although, he noted that analyzing the data was another challenge in qualitative inquiry which partially supports our findings in this respect.

Mannheimer et al. (2019) maintain three qualitative data sharing challenges in QR including existence of large pool of qualitative data, copyright concerns, and jeopardy of decontextualization are problematic for researchers which contradict our findings. Similarly, Stahlke (2018) argues researchers' encountering unexpected ethical challenges are among the major problems of conducting QR which are different from the challenges we found in our study most possibly due to the focus of our study being different as directed by the questions of the interview and questionnaire.

It could thus be noted that since data analysis includes coding the data, adopting such qualitative analytic methods as the grounded-theory approach inductive content analysis, it becomes demanding for students and novice researchers. Moreover, the cyclical data coding in QR is very time-consuming and requires technical expertise. Overall, it seems most of the QR procedures are difficult for novice researchers as mentioned earlier which can be manifested through the comments of one of the interviewees who stated, "who dares conduct such a research?!" According to Cooper, Chenail, and Fleming (2012), QR learning seems to create considerable anxiety and emotional confusion for learners and novice researchers. Data interpretation, for instance, is also another challenging aspect or step in conducting QR "because it needs power of reasoning and critical thinking," which most graduate students might not sufficiently possess as remarked by the interview participants.

Wang (2013) claimed understanding the roles of themselves as researchers in interpreting the data was one of the major challenges for novice researchers. Since there is usually no numerical support for QR, it becomes difficult to justify and interpret the results of the study without involving the researchers' personal opinions and subjective interpretations. Supporting this claim, Black (2006) maintains, "how can words fully express the meaning inherent in our observations, personal interviews, and pictures when so much of it is subtle, hidden and contextually bound?" (p. 319). Therefore, it seems justifying the possible reasons for one's results without the contextual support of quantitative analysis and numerical values and also developing a cogent discussion throughout the study are demanding which might eventually lead to confusion, disappointment, and detachment.

The last research question dealt with the recommendations on how to obviate the challenges of conducting QR. The results showed that the participants recommend QR be incorporated in M.A. and Ph.D. curricula and syllabi in TEFL as an independent course of study and that conducting at least one qualitative study become obligatory for M.A. and Ph.D. students of TEFL. Furthermore, they noted that the skilled and qualified professors should teach QR to provide the students with the required knowledge and expertise to conduct qualitative inquiries. However, it seems that every university professor in Iran has his/her own syllabus for research methodology course and that most of them do not sufficiently deal with QR. It could thus be argued that a serious paradigm shift should occur in the educational system moving beyond scientific positivistic quantitative-oriented views of research to more post-positivistic constructivists' views where qualitative inquiry is valued and paid due attention.

Regarding the importance of QR and the tendency of graduate students to conduct mixed-methods research, the results of the study suggest that the educational system, the curricula, and the syllabi incorporate QR as an independent course of study for M.A. and Ph.D. students and that conducting at least one QR study become obligatory for them since they might choose this line of inquiry for their theses and dissertations. Kelly and Kaczynski (2007)

suggest both quantitative and qualitative research methodology courses be incorporated equally into the educational system, something which seems to be currently lacking in the system most probably because in the educational system of Iran, as mentioned earlier, the positivistic view of research focusing on quantitative approach is dominant (Atai et al., 2018). The significance of this recommendation lies in the fact that, based on Hill (2007), the qualitative researcher should have insight and intuition based on experiment, the ability to perceive phenomena without judgment, to investigate events from different perspectives, to recognize patterns, to experience ambiguity, and to have acceptable writing skills, tolerance, and expertise. In order to grasp the nature of QR, students need to experience both its implementation and learn about its nature (Hazzan & Nutov, 2014).

Therefore, to sum up, the present study seems to have some implications with respect to the educational system. Firstly, the educational system should rectify itself in terms of research methodology course, do its best to minimize and obviate the challenges and barriers lying in the way of conducting QR as found in the present study, go through some general and specific changes to satisfy students' needs, and equip them with necessary skills to conduct QR. Moreover, the findings of the study might imply graduate studies instructors focus more on the most important and challenging aspects of QR as found in the present study and encourage students to conduct at least one QR study in order to become acquainted with such a valuable research design and to experience an in-depth analysis of the phenomena. Furthermore, such a familiarity would help students choose their desirable research paradigm more conveniently for their theses and dissertations. However, further research is needed for a deeper investigation of the importance of every aspect of QR in more detail to obviate the barriers faced by novice researchers. Moreover, further research needs to explore the novice researchers' attitudes and difficulties in approaching data analysis as the most important and challenging aspect of QR as found in the present study. Finally, more research will need to investigate the barriers to incorporating the recommended changes to educational system to include QR more robustly and seriously in the program and also explore the reasons for the educational system's resistance against adding QR as a separate course of study.

This study, like all other studies suffers some limitations. The first limitation was exploring the challenges of conducting QR in a specific context (i.e., the Iranian TEFL educational context). Further research can be conducted to investigate the issue and replicate the study in other contexts and other fields of study to make the results more generalizable. The second limitation was the method of selection of the participants of the present study who were mainly selected based on convenience sampling and their availability. For further research, the issue can be investigated employing a larger sample of TEFL graduate students or students from other fields of humanities and social sciences selected randomly. The third limitation was the study did not focus on the other aspects of the QR for practicality considerations; hence, the number of aspects worked on was limited. Other aspects or challenges of conducting QR (e.g., ethical considerations, subjectivity in interpretation, etc.) might also be explored by future studies. Another limitation was the data collection instruments. Other instruments, such as observations, think-aloud protocols and focus group discussions can be adopted by further studies to obtain more comprehensive and in-depth findings. Finally, the issue can also be investigated from the professors and policy makers' viewpoint to see whether any discrepancies could be found.

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Appendix A

The Results of Factor Analysis

Table 1

Factor Loadings for the Rotated Factors

Item	Item title	Factor loadings					Communalities
		1	2	3	4	5	
1	I prefer quantitative research	.47				.40	.82
2	I prefer qualitative research			.85			.82
3	I prefer a mixed-methods one	.61	-.43				.71
4	All the educational elements including educational system, professors, students, and textbooks are to blame	-.41		.51			.74
5	The educational system is to blame	.46					.62
6	Professors are to blame			.70	-.42		.70
7	Students themselves are blamed for lack of sufficient knowledge of QR	-.59		.56			.68
8	The textbooks are to blame		.60				.71
9	The most important aspect of QR is data analysis	.57					.57
10	Data interpretation is the most important aspect of QR	.42	-.52				.71
11	The current research course at M.A. and Ph.D. level is enough to familiarize students with QR	-.56				.44	.66
12	QR need to be incorporated as a mandatory independent course in graduate studies curricula	.65					.69
13	All aspects of QR are important			.45	.59		.70
14	The most challenging aspect of conducting QR is data collection	.52	.41			.51	.74
15	The most challenging aspect of conducting QR is data coding	.73					.78

16	The most challenging aspect of conducting QR is data analysis	.71					.74
17	The most challenging aspect of conducting QR is data interpretation	.61					.52
18	The most challenging aspect of conducting QR is reliability estimation					-.52	.84
19	The most challenging aspect of conducting QR is validity estimation	.57	.41				.77
20	At least one QR must be conducted by graduate students	.48	-.52				.65
Eigenvalues		4.96	2.20	1.78	1.58	1.37	
% Of variance		24.83	11.03	8.91	7.92	6.84	

Note. Loadings < .40 are omitted.

Extraction Method: Principal Component Analysis

Determining the appropriateness of factor analysis and the number of components for extraction.

As shown in Table 1, the five-component solution explained a total of 59.14% of the variance, with Component 1 contributing 24.83%, Component 2 contributing 11.03%, Component 3 contributing 8.91%, Component 4 contributing 7.92%, and Component 5 contributing 6.44%. The Factor loadings of each item show a number of strong loadings and all variables substantially loading on to five components.

Appendix B

Semi-Structured Interview Questions

1. If you want to conduct a research study, which one do you prefer? Qualitative, quantitative or mixed-methods? Why?
2. Who do you think is to blame for lack of sufficient knowledge on qualitative research? (Educational system, professors, students, or textbooks, etc.).
3. What aspect or part of qualitative research is more important?
4. What aspect or part of qualitative research is more challenging?
5. Should qualitative research be incorporated in MA or PhD in TEFL as a separate course?

Appendix C

Qualitative Research Survey

Name..... Age..... Female Male

Please answer the following questions based on your experience in conducting research.

1. I prefer to conduct quantitative research.

Strongly disagree Disagree Undecided Agree Strongly agree

2. I prefer to conduct qualitative research.

Strongly disagree Disagree Undecided Agree Strongly agree

3. In conducting research, I prefer a mixed method one.

Strongly disagree Disagree Undecided Agree Strongly agree

4. All of the educational elements including the educational system, (e.g., professors, students, and textbooks) are to blame for lack of sufficient knowledge on qualitative research.

Strongly disagree Disagree Undecided Agree Strongly agree

5. Educational system of the country is the main reason for lack of sufficient knowledge on qualitative research.

Strongly disagree Disagree Undecided Agree Strongly agree

6. Professors are the main reason for lack of sufficient knowledge on qualitative research.

Strongly disagree Disagree Undecided Agree Strongly agree

7. Students are the main reason for lack of sufficient knowledge on qualitative research.

Strongly disagree Disagree Undecided Agree Strongly agree

8. Textbooks are the main reason for lack of sufficient knowledge on qualitative research.

Strongly disagree Disagree Undecided Agree Strongly agree

9. The most important aspect of qualitative research is data analysis.

Strongly disagree Disagree Undecided Agree Strongly agree

10. The most important aspect of qualitative research is data interpretation.

Strongly disagree Disagree Undecided Agree Strongly agree

11. The research course in M.A. or Ph.D. level is enough to familiarize students with how to conduct qualitative research.

Strongly disagree Disagree Undecided Agree Strongly agree

12. The qualitative research can be incorporated in M.A. or Ph.D. curriculum and syllabus in TEFL as an independent course.

Strongly disagree Disagree Undecided Agree Strongly agree

13. All aspects of qualitative research enjoy the same importance.

Strongly disagree Disagree Undecided Agree Strongly agree

14. The most challenging aspect of qualitative research is data collection.

Strongly disagree Disagree Undecided Agree Strongly agree

15. The most challenging part of qualitative research is data coding for me.

Strongly disagree Disagree Undecided Agree Strongly agree

16. The most challenging aspect of qualitative research is data analysis.

Strongly disagree Disagree Undecided Agree Strongly agree

17. The most challenging aspect of qualitative research is data interpretation.

Strongly disagree Disagree Undecided Agree Strongly agree

18. Determining reliability of the research instruments is the most challenging part of qualitative research.

Strongly disagree Disagree Undecided Agree Strongly agree

19. Determining validity of the research instruments is the most challenging part of qualitative research.

Strongly disagree Disagree Undecided Agree Strongly agree

20. Conducting at least one qualitative study must become obligatory for M.A. students of TEFL in Iran.

Strongly disagree Disagree Undecided Agree Strongly agree

Thank you for your cooperation!

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