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Shahid Chamran University of Ahvaz

Research Paper

Research Approach Preferences of Iranian Faculty Members and Ph.D. Candidates of TEFL: What Does the MSRT Curriculum of TEFL Ph.D. Program Suggest?

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Abstract

This study explores the research approach preferences of Teaching English as a Foreign Language (TEFL) faculty members and Ph.D. candidates, and the role of TEFL Research Methodology course instructors and the Ministry of Science, Research and Technology (MSRT) curriculum of Ph.D. level in Iran in this respect. Based on purposive sampling and availability, 10 faculty members and 25 Ph.D. candidates were selected and sat a semi-structured interview. Based on the results of the interview, a researcher-made questionnaire was developed and validated. Next, 53 faculty members and 98 Ph.D. candidates were selected based on purposive sampling and their availability to respond. Findings revealed that mixed-methods research (MMR) was the most preferred research approach of both groups of participants. Despite the overall preference for MMR studies, the results showed that the MSRT curriculum and the instructors of the Research Methodology course did not focus on MMR adequately. Furthermore, the participants believed that Research Methodology course at the Ph.D. level did not equip the addresses well enough to be able to conduct accurate and appropriate MMR studies. Findings could imply that MSRT curriculum developers and Research Methodology course instructors need to pay more attention to the research approach preference (i.e., MMR) of the end-users (i.e., PhD candidates).

Keywords: Ph.D. Candidates; Research Approach Preference; Research Methodology Course; MSRT Curriculum; TEFL.

1. Introduction

1.1. Background to the Study

A wave of mixed-methods research (MMR) in social sciences began in the 1980s (Maxwell, 2016) and its growth in the following two decades reached a turning point at which the *Journal of Mixed Methods Research* was started in 2007 which is still published today as a leading journal (JCR IF: 5.746) on the topic (Fetters & Molina-Azorin, 2017). MMR has increasingly been welcomed in applied linguistics and language education due to its suitability for investigating research problems in detail (Hashemi, 2012; Hashemi & Babaii, 2013; Riazi & Candlin, 2014). The popularization of MMR and its proliferation in the past decade has led to an enhancement in the number of publications in Applied Linguistics (Amini Farsani, Babaii, Beikmohammadi, & Babaii Farsani 2021). MMR has emerged as an important method for researchers alongside the quantitative and qualitative methods (Creswell & Garrett, 2008). It has been accepted as a methodology in its own right in social research (Greene, 2008) and in recent years, it has also been affirmed and supported in Applied Linguistics (Dornyei, 2007; Hashemi, 2012). For doing projects in academic contexts, faculty members and Ph.D. candidates are often required to conduct MMR due to its significant status in various disciplines, and in Applied Linguistics in particular (Creswell & Plano Clark, 2018). Hence, the present exploratory sequential mixed methods study is an attempt to investigate the research preferences of TEFL Ph.D. candidates and faculty members in the Iranian academic context. Since knowing about these researchers' research preferences can help the educational system to pay more attention to their preferred research method, it might provide more suitable conditions for them to conduct their

studies. Additionally, this study aims at investigating the extent to which TEFL faculty members and MSRT curriculum focus on MMR.

1.2. Studies on Research Approach Preferences

Few studies, if any, have been conducted to investigate the research approach preferences of researchers. To the researchers' knowledge and investigation, there seems to be a dearth of research that directly investigates the research approach preferences of both TEFL Ph.D. candidates and faculty members in the field of Applied Linguistics. There are some studies which investigated the most-used research method in theses and journal papers, which might show the tendency of researchers toward the given approach. Hence, some of the studies in this section investigated the most prevalent and frequently used research method in Applied Linguistics. MMR is a relatively recent method in Applied Linguistics. It is becoming more popular; however, most post-graduate students in the English as a Foreign Language (EFL) context are not yet adequately aware of it. Thus, the present study focused on investigating the research approach preferences of EFL researchers.

In one study, Borrego, Douglas, and Amelink (2009) investigated engineering education researchers' preferences for research methods. After offering the definitions and aims of different research methods (qualitative, quantitative, and mixed methods), they provided the experimental results from a momentous international conference on engineering education research. Instead of presenting, the other participants assigned to the group, read each paper and discussed it for 45 minutes to an hour. The results showed that the participants expressed disappointment toward qualitative methods and indicated a strong preference for quantitative methods. Borrego et al. (2009) focused on only engineering education researchers in their study; however, there might be differences in the research approach preferences of researchers of various fields.

Likewise, Soodmand Afshar and Hafez (2021), in a mixed methods study, investigated the challenges of conducting qualitative research from the viewpoints of 100 TEFL post-graduate students and their recommendations for obviating those challenges. We employed MMR and conducted a semi-structured interview and adopted a researcher-made five-point Likert-scale questionnaire to explore the issue. Besides clarifying qualitative research challenges, one of the research questions of the study addressed post-graduate students' research method preferences. Accordingly, the majority of the post-graduate students preferred to conduct MMR for their projects, theses, and dissertations. The participants believed that the goal of MMR is to achieve findings that are more dependable and render a more complete description and general illustration of the phenomenon at hand that either method alone could not provide. However, it should be noted that the main focus of the Authors' (2021) study was on investigating the challenges of conducting qualitative research only.

Lei and Liu (2019) and Zhang (2020) explored the research approach trends in Applied Linguistics and second language acquisition (SLA), respectively. By confirming the importance attributed to methodological issues through bibliometric analysis, their findings revealed MMR as being among the most frequently used method in the field.

Furthermore, Amini Farsani et al. (2021) examined 4000 articles in 18 leading applied linguistics journals from 2009 to 2018 to investigate their methodological orientations. The findings indicated that quantitative studies received the greatest emphasis (n = 1701, 43%) followed by MMR studies (n = 1034, 26%). The least prevalent research orientation was qualitative (n = 993, 25%). Their study shows that MMR studies have received considerable attention in the last decade. However, they examined the most-used research approaches as adopted in journal articles, and they did not investigate the researchers' research approach preferences directly.

Similarly, Jang, Wagner, and Park (2014) examined 32 studies in 15 journals on language testing and assessment between 2007 and 2013. Their results showed that the number of MMR studies increased over the years. Additionally, the findings revealed that the most frequently mentioned purposes of mixing were complementarity and triangulation.

Riazi, Shi, and Haggerty (2018) in their study examined the prevalence rate of methodological orientations in all issues of the Journals of Second Language Writing (JSLW) between 1992 and 2016. They found that qualitative was the most prevalent approach (106, 39%), followed by eclectic MMR (85, 31.3%), and quantitative (76, 27.9%). The innovative and principled MMR approaches were used occasionally (5, 1.8%). However, they found that there was an increase in the prevalence of MMR (4.6%).

Investigating the literature review indicates that scant research has been performed on the research preferences of TEFL researchers. More particularly, there are few if any studies investigating research approach preferences of TEFL post-graduate students and faculty members in the higher education context of Iran. Moreover, most of the previous studies have examined the most frequently used research approach in the journals only, an analysis which *might* show the tendency of the researchers toward that research approach in the journals. Therefore, to fill the perceived gap, this study aims to examine TEFL faculty members' and Ph.D. candidates' research approach preferences. It also aims to examine TEFL faculty members' focus on MMR in the Research Methodology course and the extent of focus on this method of inquiry in the MSRT curriculum.

Drawing upon the *parsimonious* criteria for evaluating the quality of MMR studies (Bryman, 2014; Amini Farsani, 2017), Creamer (2018) proposed a framework consisting of four sets of mutually exclusive criteria of MMR studies: "(a) transparency about the reasons for using mixed-methods, (b) the amount of mixing across the four phases of the research process, (c) interpretive comprehensiveness, and (d) methodological foundations" (p. 151). The first set of Creamer's criteria as a theoretical framework led us throughout the present study. That is, whenever we talk about MMR in the current study, we mean a study which meets the Creamer's (2018) four sets of criteria as mentioned above.

1.3. Statement of the Problem and Significance of the Study

No one can deny the significant role of research in human life, especially in humanities and social sciences. The education systems of all countries must provide the appropriate conditions for conducting research. In a higher education system, faculty members and Ph.D. candidates are the most important researchers; therefore, they should be educated adequately to conduct different research approaches. In addition, they will also benefit if the higher education system knows their research approach preferences since the educational system could then provide the proper conditions for them to conduct their studies. Furthermore, the system might rectify its obsolete and traditional views regarding research approaches and pave the way for the researchers to conduct their studies.

Due to the popularity of MMR in social sciences, and especially in Applied Linguistics, it is essential that MMR be taught and emphasized. Thus, education systems should not emphasize only the positivistic or constructivist paradigms, and should instead consider researchers' needs and preferences when performing academic research. As TEFL graduate students and instructors generally investigate human beings in their studies, the qualitative and MMR approaches can be more advantageous for exploring the problems at hand (Atai, Karimi, & Asadnia, 2018). However, the prevailing methodology in the Iranian higher education context is a positivism-, scientism-oriented quantitative philosophy (Zokaei, 2008; Atai et al., 2018). According to our observations and previous studies (e.g., Soodmand Afshar & Hafez, 2021), most Iranian post-graduate students often have problems conducting qualitative and MMR although, as we have already noticed, there are few universities in Iran that offer an independent MMR course to post-graduate students. Therefore, the present study aims first to investigate TEFL faculty members' and Ph.D. candidates' research approach preferences. Second, it aims to investigate the extent to which the MSRT curriculum and instructors of the Research Methodology course focus on MMR. An exploratory sequential MMR design was thus employed to qualitatively explore the perspectives of the participants and then to develop a context specific quantitative instrument (i.e., questionnaire survey) based on the viewpoints of the participants to generalize the results of the qualitative phase of the study to a larger sample. To address the issue, the following research questions were thus formulated.

1.4. Research Questions

1. What are the Iranian TEFL Ph.D. candidates' and faculty members' research preferences? Why/why not?
2. Is the Research Methodology Course at Ph.D. program enough to deal with conducting MMR? Why/why not?
3. To what extent TEFL do faculty members teaching Research Methodology courses focus on MMR? Why/why not?
4. To what extent does the MSRT curriculum of the Research Methodology focus on MMR? Why/why not?

2. Method

2.1. Research Design

The current study used a sequential exploratory MMR design. The combination of both quantitative and qualitative data creates a profound understanding of a phenomenon, provides a clear picture of the research problem, and increases readers' comprehension of the issue under investigation (Creswell & Plano Clark, 2018). In this study, semi-structured interviews allowed participants to provide us with rich details on their preferences regarding research approaches and the extent to which the MSRT curriculum and faculty members focused on MMR from their viewpoints. The survey enabled the researchers to consider a larger sample of participants and generalize the results of the qualitative phase.

2.2. Participants

2.2.1. Participants of the Qualitative Phase

The participants in the qualitative phase included 25 (out of 98 in the quantitative phase) Ph.D. candidates majoring in TEFL and 10 (out of 53 in the quantitative phase) TEFL faculty members from different universities across the country. They were selected through purposive sampling and their availability. Since the participants of the study were faculty members and Ph.D. candidates, therefore, they had the threshold knowledge of MMR and enough experience in conducting different research methods.

2.2.2. Participants of the Quantitative Phase

The quantitative phase included 151 participants that comprised 98 Ph.D. candidates and 53 faculty members from different universities across Iran. They were selected based on purposive sampling, and their availability. Partly, the reason in support of selecting the participants from among both the faculty members and Ph.D. candidates was to work with a sample that had a sufficient amount of practical experience in doing research. Moreover, they were also familiar with at least the theoretical aspects of different research approaches. The Ph.D. candidates and the faculty members were aged 28-40 and 42-58 respectively.

Before the study began, the oral informed consent of the participants for both qualitative (i.e., interview) and quantitative (i.e., questionnaire survey) phases of the research was gained. Their anonymity and the confidentiality of their data were also assured by completing a consent form which also contained statements preserving their safety and privacy.

2.3. Instrumentation

2.3.1. Semi-Structured Interview

Based on an extended literature review, a major deficiency of past research was a lack of a specific measure to directly explore the participants' viewpoints about TEFL researchers' research approach preferences. Therefore, an individual in-person, semi-structured interview was conducted with 10 TEFL faculty members and 25 Ph.D. candidates to obtain their personal viewpoints in this respect. Based on the richness and depth of the data provided by the participants, it was concluded that the sample of the qualitative phase was sufficient. The researchers conducted interviews to both acquire some greater insights into the issue and to construct the items of the questionnaire. They used the repeated themes and common patterns uncovered in the qualitative data analysis as the foundation of the questionnaire items. It is worth noting that although the semi-structured interview contained 11 questions, the current study focused only on four questions to explore the issue under investigation for the sake of space limitation and focus of the study (Appendix A). The results of other questions were reported in another study. The validity of the semi-structured interview was ascertained by the judgment of two experts in the field, both holding a Ph.D. in TEFL with an interest in and a record of conducting and publishing mixed-methods studies. According to the views of these experts, adjustments were made to the interview questions.

2.3.2. Questionnaire Survey

A researcher-made questionnaire consisting of 44 five-point Likert-scale items was applied to assess the perspectives of the participants on MMR. The questionnaire items were elicited based on an extended literature review

on the issue and the results of the semi-structured interview. In the current study, items 1, 3, 4, and 5 of the questionnaire were constructed based on the repeated themes and common patterns of the responses in the four questions of the interviews. The results of the rest of the items were reported in another study. The following excerpts might better indicate how the procedure went through for constructing e.g., item 1 of the questionnaire (i.e., I prefer to conduct mixed-methods research) from the interviews:

Reza's interview:

...so *mixed-methods approach* is my *priority* to conduct research…

Monir's interview:

…First, I think about *choosing mixed-methods research* to conduct a study, then…

Ahmad's interview:

Definitely, I *choose mixed-methods approach* for doing my projects because…

Then, each item was viewed by at least three experts in the field and based on their comments, adjustments were made. The researchers proposed that the MMR survey consist of five underlying dimensions or factors: research preferences, the adequacy of emphasis on MMR, challenges of MMR, sources of possible lack of knowledge in conducting MMR, and finally solutions for obviating the challenges of MMR. It is worth noting that from these five, the current study focuses on only two factors: research preferences and the adequacy of emphasis on MMR. To detect these structures with the existing sample, the survey questions were subjected to principal component analysis (PCA) with 151 participants of the study. First, the results of Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy revealed a value of .73 which is an acceptable value, and Barlett's Test of Sphericity was estimated to be significant (=0.00).

After running factor analysis, the loadings of 14 items of the questionnaire were below 0.4 (Tabachnick & Fidell, 2007), which were thus deleted and the final version of the questionnaire remained with 30 items whose loadings were strong enough (above 0.4) regarding the aforementioned five components. Appendix B presents the results of factor analysis. Also, the results of Cronbach's Alpha reliability analysis showed the questionnaire enjoyed a good and acceptable internal consistency index ($\alpha = 0.73$).

2.4. Qualitative and Quantitative Data Collection Procedure

Semi-structured interviews were conducted face-to-face, by telephone, or through social media like WhatsApp, within a period of two months. Due to the COVID pandemic, we had to stop face-to-face interviews and use interactive telephone calls instead. The participants would not accept video calls, so in order to observe the rights of the participants, to take their preferences into account, and to comply with the ethics of research, we used voice calls instead of video calls. These interviews were guided by the research questions; however, they were semi-structured to encourage the disclosure of new themes and ideas. The researcher asked pre-determined questions to elicit the essential data from the participants. Each interview typically lasted for 15 to 20 minutes, in that interval the essential data were elicited and the participants had nothing more to add. The respondents' answers to the interview questions were digitally audio-recorded. Before conducting the interviews, the participants were notified of the goal of the study, were informed of the recording of their voices, were asked for their preferred time and place of interview, and their informed consent was obtained.

Next, a questionnaire made by the researchers as mentioned earlier was used to collect the quantitative data. The whole procedure of questionnaire administration took a month, and each questionnaire was completed, on average, in 25 minutes. Before distributing the questionnaire, the researchers were assured of the consent of the participants taking part in the study. Moreover, the participants were fully assured about the confidentiality of both qualitative and quantitative data. Also, we did not use the real names of the participants and used pseudo-names instead for the sake of anonymity and research ethics. The administration and collection of the questionnaire were done via e-mail correspondence.

2.5. Data Analysis

The qualitative phase of the study was guided by the basic principles of data analysis in grounded theory (Charmaz, 2006). To analyze the qualitative data, the recorded interviews were fully transcribed and then the grounded-theory approach inductive content analysis was employed by moving from initial coding, to focused coding, and finally

to axial coding (Charmaz, 2006). Some examples that might shed light on the issue of data analysis are stated here. Considering the second research question of the study (investigating the adequacy of the Research Methodology course at Ph.D. level for conducting MMR), for instance, some codes were ultimately obtained in the axial coding phase. Here are the two codes obtained from Ph.D. candidates' reasons for believing that the course is inadequate: "there should be a separate course on MMR" and "the course focuses on theoretical aspects only". These codes were extracted as main categories from the interview data based on the grounded-theory approach inductive content analysis. The following steps were taken for identifying and extracting the aforementioned codes to better clarify the issue:

Mohammad's interview:

> …the course is *not enough* because each method has its own theoretical and practical aspects that should be covered completely. I think there should be *at least two courses for the three approaches*. In one course *only the theoretical aspects are emphasized* not the practical ones…

Yousef's interview"

> …I think it's better to have *a separate course for the three approaches;* then they can be taught completely. And professors are in rush to *cover only the theories of the approaches* in the Research Methodology course…

The italicized excerpts above are the sub-themes or sub-categories that were selected and highlighted in the initial coding phase. In the above excerpts, the recurring patterns or the sub-themes leading to the final codes of "there should be a separate course on MMR" and "the course focuses on theoretical aspects only" included, *at least two courses for the three approaches…, …only the theoretical aspects are emphasized…, …a separate course for the three approaches…,* and *…cover only the theories of the approaches…* Next, in the focused coding phase, the relevant sub-themes were determined. They were finally summarized and integrated under the umbrella codes of "there should be a separate course on MMR" and "the course focuses on theoretical aspects only" in the axial coding phase. That is, the main codes or categories were identified to label the previous-level codes more clearly. Then, the categorized codes were finally "quantitized" (Dornyei, 2007, p. 269) and subjected to frequency analysis. The term means converting qualitative data into numerical codes that can be further processed statistically (Dörnyei, 2007). In the present study, the researchers demonstrated the qualitative codes in numbers by displaying how many times the given code was cited in the participants' responses (i.e., frequency analysis). Hence, the results can better be compared with quantitization.

For gathering the quantitative data, first, the researcher-made questionnaire was viewed by three experts in the field of Applied Linguistics who checked its content validity. Then, after gathering the quantitative data (i.e., participants' answers to the questionnaire items), the researchers subjected it to PCA with Varimax rotation as mentioned earlier. Descriptive statistics (frequency, percentage, etc.) and inferential statistics (non-parametric tests) were calculated through SPSS version 26.0 to answer the questions.

Furthermore, both the MSRT curriculum of the Research Methodology course for Ph.D. students of TEFL and the syllabi of the Research Methodology course prepared and designed by faculty members for Ph.D. candidates were collected and were then subjected to content analysis. The common patterns and the repeated themes of the contents of the curriculum and the syllabi were identified and then coded and finally subjected to frequency analysis.

3. Results

3.1. Qualitative Results (i.e., Interview Results)

The first research question of the study (i.e., second question of the interview) focused on the TEFL Ph.D. candidates' and faculty members' research approach preferences. The second research question (i.e., sixth question of the interview) explored the adequacy of the Research Methodology course at Ph.D. level. The third research question (i.e., fourth question of the interview) investigated the extent to which TEFL faculty members teaching Research Methodology courses focused on MMR. The Fourth research question (i.e., fifth question of the interview) focused on the extent to which the MSRT curriculum of the Research Methodology course focused on MMR. The following main categories were extracted by analyzing the participants' interviews which are displayed in Table 1.

Table 1. *The Results of Semi-structured Interview With TEFL Faculty Members and Ph.D. Candidates*

Questions	Main Categories	Faculty Members		Ph.D. Candidates	
		F	*P*	*F*	*P*
2. If you want to conduct research, which one would you prefer? Qualitative, quantitative or mixed-methods? Why?/why not?	Mixed-methods research	6	60	17	68
	Reason:				
	- Comprehensiveness of MMR	3	30	8	32
	- Strength of MMR	1	10	6	24
	- Reliability and validity of MMR findings	1	10	3	12
	- Flexibility of MMR	1	10	4	16
	- Data richness	-	-	3	12
	It depends on the research area	2	20	-	-
	Qualitative research	1	10	4	16
	Quantitative research	1	10	2	8
4. In your opinion, how much do the TEFL faculty members teaching the Research Methodology course focus on mixed-methods research?	Not enough	7	70	19	76
	Reason:				
	- Dominance of positivism	3	30	5	20
	- Lack of trained and experienced professors	2	20	6	24
	- Lack of time	2	20	-	-
	- Focus on theoretical rather than practical side of the issue	-	-	8	32
	No idea	2	20	3	12
	Enough attention is paid	1	10	3	12
5. How much does the MSRT curriculum of the Research Methodology focus on mixed-methods research?	Not as much as it deserves	7	70	13	52
	Nothing	2	20	4	16
	Enough attention is paid	1	10	2	8
	No idea	-	-	6	24
6. In your opinion, is one Research Methodology course at Ph.D. level enough to deal with conducting mixed-methods research? Why? Why not?	No	7	70	16	64
	Reason:				
	- There should be a separate course on MMR	3	30	3	12
	- Not having practical experience of MMR	2	20	-	-
	- Dominance of positivism	2	20	-	-
	- The course focuses on theoretical aspects only	-	-	9	36
	Yes	3	30	7	28
	It depends on professors' syllabi for Ph.D. students	-	-	2	8

Note, F= Frequency; P= Percentage.

As shown in Table 1, in response to the first research question of the study, the professors' research preferences were *MMR* (60%), *it depends on the research area* (20%), *qualitative research* (10%) and *quantitative research* (10%). Ph.D. candidates' research preferences were *MMR* (68%), *qualitative research* (16%), *quantitative research* (8%) and *it depends on the research area* (8%). TEFL faculty members and Ph.D. candidates were thus approximately of the same opinion and most of them pointed out that they preferred mixed-methods approach. They believed that MMR provided a more comprehensive and clearer picture of research problems and the results were more valid and reliable than single approaches. One of the faculty members, for instance, stated,

> [Excerpt 1]: *"Despite all the challenges of conducting MMR that I experienced, I prefer MMR because I achieved the comprehensive results in this approach and MMR results are [more] valid and reliable to me".*

Also, one of the Ph.D. candidates remarked,

> [Excerpt 2]: *"I prefer MMR because it investigates research problems from different angles, so it renders more valid and reliable results. And due to the supplementary use of both qualitative and quantitative methods, their weaknesses are neutralized and their strengths complement each other".*

Considering the second research question of the study, as shown in Table 1, from the viewpoints of 70% of the faculty members, a single Research Methodology Course at Ph.D. level was *not enough* to deal with conducting MMR although 30% of them stated that it was *enough*. From the viewpoints of 64% of the Ph.D. candidates, the Research

Methodology course at Ph.D. level was *not enough* to deal with conducting MMR though 28% of them stated that it was *enough*. A final 8% believed that *it depends on professors' syllabi for Ph.D. students*. Both TEFL faculty members and Ph.D. candidates were thus approximately of the same opinion and most of them pointed out that the Research Methodology Course at Ph.D. level was not enough to familiarize the addresses with conducting MMR. Supporting this, one of the faculty members remarked,

> [Excerpt 3]: *"Either one of these three methods by themselves can be the subject matter of the course. However, at least two courses are required for Ph.D. level, not a single course".*

One of the Ph.D. candidates said,

> [Excerpt 4]: *"It's not enough because Ph.D. students need to do MMR practically not just study the theories. Therefore, the course is not enough to get familiar with all aspects of MMR".*

Another one remarked,

> [Excerpt 5]: *"Of course not. Incomplete theoretical explanations about mixed studies without even elaborating on one authentic article cannot be considered sufficient. In my opinion, MMR is a time-consuming task and since it has different types and aspects there should be a separate course for it".*

Regarding the third research question of the study, as indicated in Table 1, TEFL faculty members' viewpoints on MMR in the Research Methodology Course were that *not enough* (70%) attention had been paid to MMR, 20% had *no idea* and 10% of them stated that *enough* attention had been paid to MMR. From Ph.D. candidates' viewpoints, TEFL faculty members' concentration on MMR in the Research Methodology course were *not enough* (76%), 12% of them had *no idea* and 12% stated that *enough* attention had been paid to MMR. TEFL faculty members and Ph.D. candidates were thus approximately of the same opinion and most of them pointed out that the professors did not focus on MMR sufficiently in their syllabi. Echoing this, one of the faculty members stated,

> [Excerpt 6]: *"Due to the dominance of positivism in the Iranian higher education context, most of the professors prefer to teach and introduce quantitative method designs in their research classes".*

Similarly, one of the Ph.D. candidates said,

> [Excerpt 7]: *"They don't emphasize it very much. I think it's because of their tendencies toward single approaches, so they are not experienced enough to focus on MMR".*

Responding the fourth research question of the study, the focus of the MSRT curriculum of the Research Methodology Course on MMR was *not as much as it deserves* (70%), *nothing* (20%) and *enough* (10%) from the faculty members' perspectives. From the Ph.D. candidates' perspectives, the focus of MSRT curriculum of Research Methodology Course on MMR was *not as much as it deserves* (52%), *no idea* (24%), *nothing* (16%) and *enough* (8%). TEFL faculty members and Ph.D. candidates were thus roughly of the same opinion and most of them stated that in the MSRT curriculum, there was no prominent and sufficient focus on MMR that it deserved. Supporting this, one of the faculty members remarked,

> [Excerpt 8]: *"The MSRT curriculum neither focuses on MMR nor on qualitative research; the focus is more on the quantitative approach".*

One of the Ph.D. candidates said,

> [Excerpt 9]: *"[The] MSRT curriculum doesn't focus that much on MMR because it just focuses on qualitative and quantitative methods".*

3.2. Content Analysis of Research Methodology Course Syllabi and the MSRT Curriculum (Second and Third Research Questions)

As mentioned in the methodology section, the Research Methodology syllabi designed and prepared by the faculty members were subjected to content analysis. We collected and analyzed the syllabi of the 15 faculty members teaching the Research Methodology course, the results of which are displayed in Table 2. Also, an intra-coder reliability estimation was adopted to check the reliability of the mentioned results which showed a rather high correlation.

Table 2. *Content Analysis of Research Methodology Course Syllabi*

Name	Patterns	Focused Almost Always		Focused Often		Focused Moderately		Focused to Some Extent		Focused Not at All	
		F	*P*	*F*	*P*	*F*	*P*	*F*	*P*	*F*	*P*
Research	Quantitative	11	73.33	3	20	1	6.66	-	-	-	-
Methodology	Qualitative	-	-	12	80	3	20	-	-	-	-
Course	Mixed-Methods	1	6.66	3	13.33	4	26.66	5	33.33	3	20

Note, F=Frequency, P=Percentage

As Table 2 shows, 93.33% of the TEFL faculty members focused almost always on the quantitative approach in their syllabi, 80% of them focused often on the qualitative approach while only about 7% of them focused almost always on MMR. Accordingly, the focus on MMR in the professors' syllabi was much lower than that of the other two approaches.

In addition, we analyzed the content of the MSRT curriculum to determine to what extent the MSRT curriculum of TEFL focused on MMR in the educational system.

As seen in Figures 1 and 2 below, the Research Methodology course is one of the technical obligatory courses in the educational system; however, the Qualitative and MMR courses are among the optional courses in the MSRT curriculum. Accordingly, the departments might choose not to offer this course in their Ph.D. program which, most often, they do not.

۱) دروس تخصصی دورهٔ دکتری آموزش زبان انگلیسی

ردیف	کد درس	نام درس	تعداد واحد	ساعت		
				نظری	عملی	جمع
۱		تحقیق در آموزش زبان **Research in Language Education**	۲	۳۲		۳۲
۲		سنجش زبان **Language Assessment**	۲	۳۲		۳۲
۳		مطالعات یادگیری زبان دوم **SLA Studies**	۲	۳۲		۳۲
۴		نقد و بررسی مسائل آموزش زبان **Critique of Issues in Language Teaching**	۲	۳۲		۳۲

Figure 1. Technical Obligatory Courses at Ph.D. Level, Taken From the MSRT Curriculum on TEFL (p. 8)

۲) دروس اختیاری دورهٔ دکتری آموزش زبان انگلیسی

ردیف	کد درس	نام درس	تعداد واحد	ساعت		
				نظری	عملی	جمع
۱		منظورشناسی زبان دوم Interlanguage Pragmatics	۲	۳۲		۳۲
۲		جامعه شناسی زبان Sociolinguistics	۲	۳۲		۳۲
۳		روان‌شناسی زبان Psycholinguistics	۲	۳۲		۳۲
۴		روش های تحقیق کیفی و مختلط Qualitative and Mixed Research Methods	۲	۳۲		۳۲

Figure 2. Optional Courses at Ph.D. Level, Taken From the MSRT Curriculum on TEFL (p. 9)

تحقیق در آموزش زبان

Research in Language Education

تعداد واحد: ۲ تعداد ساعات: ۳۲

نوع واحد: نظری نوع درس: تخصصی

(الف) هدف

آشنایی با اصول تحقیق کمی و کیفی و کاربردهای آن در پژوهش‌های مربوط به آموزش زبان

(ب) سرفصل

۱. اصول تحقیق در آموزش زبان

۲. مبانی روش تحقیق کمی و کیفی

۳. روش‌های گردآوری داده ها در روش تحقیق کمی و کیفی

۴. تحقیق مقطعی و طولی

۵. روش‌های تحلیل و تفسیر داده‌ها در تحقیق کمی و کیفی از جمله تحلیل عاملی، رگرسیون، تحلیل مسیر، تحلیل مصاحبه

۶. بررسی انتقادی روش تحقیق کمی و کیفی در پژوهش‌های آموزش زبان

۷. اخلاق در تحقیق

Figure 3. Introduction of the Purpose and Lesson Titles of the Research Methodology Course, Taken From the MSRT Curriculum on the TEFL Ph.D. Program (p. 14)

As seen in Figure 3, which is the introduction of the purpose and topics of the Research Methodology course (Technical course), the purpose of the course is to make students familiar with the principles and applications of both quantitative and qualitative methods. Based on this aim, the focus of the topics is mainly on the quantitative and qualitative research approaches. Accordingly, there is no focus on MMR in the curriculum.

3.3. Quantitative Results (i.e., Questionnaire Results)

3.3.1. Results of the First Research Question (Research Preferences Factor)

A normality test (i.e., Kolmogorov-Smirnov test) was run to decide on the type of inferential statistics (parametric or non-parametric) to be used. The results of Kolmogorov-Smirnov test indicated that the sets of scores were not normally distributed ($p < .05$). Therefore, non-parametric statistics were applied.

To answer the first research question objectively, the descriptive statistics related to the participants' responses to item 1 of the MMR survey (i.e., I prefer to conduct mixed-methods research) are presented in Table 3.

Table 3. *Descriptive Statistics of the TEFL Faculty Members' and Ph.D. Candidates' Responses to the First Item of the MMR Survey*

Item No.	Item Title		Faculty Members			Ph.D. candidates		
			Frequency	*Valid Percent*	*Cumulative Percent*	*Frequency*	*Valid Percent*	*Cumulative Percent*
1	I prefer to conduct MMR	SD	-	-	-	-	-	-
		D	-	-	-	1	1.0	1.0
		U	2	3.8	3.8	4	4.1	5.1
		A	30	56.6	60.4	35	35.7	40.8
		SA	21	39.6	100.0	58	59.2	100.0
		Total	53	100.0		98	100.0	

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

As seen in Table 3, 56.6% of the faculty members preferred to conduct MMR. Surprisingly, 39.6% of them strongly confirmed their preference, while 3.8% were undecided. In addition, 59.2% of the TEFL Ph.D. candidates strongly preferred and 35.7% preferred to conduct MMR while 4.1% were undecided, and only 1% disagreed.

As indicated in Table 3, 96.2% of the faculty members and 94.9% of the Ph.D. candidates strongly agreed and agreed with item 1. Table 4 displays the results of the Mann-Whitney U test for item 1.

Table 4. *Mann-Whitney U test Statistics on Item 1 (the first factor)*

Item No.	Median		Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
	Faculty Members	*Ph.D. Candidates*				
1	4.0	5.0	2130.00	3561.00	-2.06	0.03

As shown in Table 4 the results of the Mann-Whitney U Test revealed a significant difference in the research approach preference of the faculty members (Md = 4.00, n =53) and the Ph.D. candidates (Md = 5.00, n = 98), U = 2130.00, z = –2.06, p = .0.03

3.3.2. Results of the Second and Third Research Questions (the Adequacy of Emphasis on MMR Factor)

To answer the second, third, and fourth research questions objectively, the descriptive statistics related to the participants' responses to items 3, 4, and 5 of the MMR survey are displayed in Table 5.

As indicated in Table 5, 43.4, 43.4, and 52.8% of the faculty members and 25.5, 42.9, and 41.8% of the Ph.D. candidates *strongly disagreed* and *disagreed* with items 3, 4, and 5 respectively. Accordingly, only 25.5% of Ph.D. candidates disagreed and 23.5% were undecided that professors focused on MMR adequately (item 3). Table 6 shows the results of Mann-Whitney U tests for items 3, 4, and 5 of the MMR survey.

As shown in Table 6, Mann-Whitney U Tests results revealed a significant difference between the viewpoints of TEFL faculty members and TEFL Ph.D. candidates on whether professors focused adequately on MMR, as stated in item 3 ($p = 0.00$). However, there were no statistically significant differences between the two groups on Items 4 and 5 ($p > .05$).

Table 5. *Descriptive Statistics of the TEFL Faculty Members' and Ph.D. Candidates' Responses to the Third and Fourth Items of the MMR Survey*

Item No.	Item Title		Faculty Members			Ph.D. Candidates		
			Frequency	*Valid Percent*	*Cumulative Percent*	*Frequency*	*Valid Percent*	*Cumulative Percent*
3	Professors focus on MMR adequately	SD	9	17	17.0	8	8.2	8.2
		D	14	26.4	43.4	17	17.3	25.5
		U	10	18.9	62.3	23	23.5	49.0
		A	17	32.1	94.3	27	27.6	76.5
		SA	3	5.7	100.0	23	23.5	100.0
		Total	53	100.0		98	100.0	
4	MSRT curriculum focuses on MMR adequately	SD	11	20.8	20.8	18	18.4	18.4
		D	12	22.6	43.4	24	24.5	42.9
		U	11	20.8	64.2	39	39.8	82.7
		A	16	30.2	94.3	13	13.3	95.9
		SA	3	5.7	100.0	4	4.1	100.0
		Total	53	100.0		98	100.0	
5	The Research Methodology course at Ph.D. program is enough to deal with conducting MMR	SD	8	15.1	15.1	20	20.4	20.4
		D	20	37.7	52.8	21	21.4	41.8
		U	4	7.5	60.4	38	38.8	80.6
		A	16	30.2	90.6	15	15.3	95.9
		SA	5	9.4	100.0	4	4.1	100.0
		Total	53	100.0		98	100.0	

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

Table 6. *Mann-Whitney U test Statistics on Items 3 and 4*

Item No.	Median		Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
	Faculty Members	*Ph.D. Candidates*				
3	3.0	4.0	1937.0	3368.0	-2.64	0.00
4	3.0	3.0	2370.5	7221.5	-0.91	0.36
5	2.0	3.0	2400.0	7251.0	-0.79	0.42

4. Discussion

The present sequential exploratory mixed methods study explores the research approach preferences of Iranian TEFL faculty members and Ph.D. candidates and the extent to which TEFL faculty members and the MSRT curriculum focus on MMR.

The first research question examined the views of the participants concerning their research approach preferences. Our quantitative findings (i.e., questionnaire survey results) supported the results obtained from the qualitative phase (i.e., interview). Based on the results, most participants in both groups preferred MMR for their studies. However, the selection of a research method (qualitative, quantitative, and mixed-methods) depends mainly on the nature of the research problem (Creswell, 2003) as also mentioned by some of the faculty members in the interview (Table 1). Generally speaking, they believed that MMR provides an exhaustive picture of a phenomenon and, due to the flexibility and richness of this method of inquiry, the results are more valid and reliable than their mono method counterparts. This is corroborated by the remarks of the interviewees (see e.g., Excerpt 1). The participants also maintained that by conducting MMR, a researcher can investigate the problem more deeply and strengthen the research by eliminating the shortcomings of the other methods which is supported by the interview participants (see e.g., Excerpt 2). The results of the study are in line with those of Authors (2021) who found that post-graduate students preferred MMR for their studies. In addition, according to Lei and Liu (2019), Zhang (2020), and Jang et al. (2014), who found that the most frequently used approach was MMR and that its use had increased over time, it might be argued that (applied linguistics) researchers increasingly prefer to use MMR in their studies. Furthermore, the findings of the study are supported by the results of

Amini Farsani et al. (2021) and Riazi et al. (2018) who found that there was an increase in the percentage of studies using MMR and that it has received considerable attention in the last decade. Thus, it can be concluded that the tendency is toward MMR and the researchers preferred this research approach for conducting their studies. However, the findings of the current study are in contrast with those of Borrego et al. (2009) who found that the quantitative method was the researchers' preferred method.

It can be concluded from our findings that the supplementary use of both quantitative and qualitative methods neutralizes their weaknesses and combines their strengths. One of the faculty members, for instance, stated,

> *I prefer MMR because a well-designed and principled MMR is much more robust and combines the strengths of both qualitative and quantitative methods and avoids their weaknesses.*

In MMR, according to Authors (2021), certain dimensions of a problem can be better identified by quantitative scrutiny while others can be illustrated more deeply with the qualitative method. Researchers investigate complicated research questions by conducting MMR, combining qualitative and quantitative methods which enables them to render comprehensive findings in their surveys (Onwuegbuzie & Leech, 2005). For instance, one of the Ph.D. candidates remarked,

> *I prefer to perform MMR studies because I think we cannot cover all aspects of research problems with single methods. We can understand the whole picture of every event better if we use MMR.*

Atai et al. (2018) assert that TEFL post-graduate students' preference is now MMR for both investigating problems and publishing papers, and they should focus on their research interests purposefully and systematically. MMR can be highly effective for investigating Applied Linguistics problems since they typically deal with human beings (Atai et al., 2018).

However, the prevailing methodology in the Iranian higher education context is a positivistic, scientism-oriented quantitative philosophy (Zokaei, 2008; Atai et al., 2018). The quantitative method is the most used methodological practice (Liu & Brown 2015; Plonsky & Gass 2011; Plonsky & Gonulal, 2015), which results in less attention to the qualitative and MMR studies. Since research is becoming more common in higher education in Iran (Arani, Kakia, & Malek, 2018), overemphasizing the quantitative method prevents the researchers from performing MMR to gain profound knowledge of the research problem. Based on the results of the current study, it could be stated that the present context of research in Iran, or the traditional view of research, prevents post-graduate students from choosing MMR despite their preference for it. Hence, the education system should pave the way for researchers to choose their preferred research approach by supporting them and emphasizing MMR more in the academic contexts. This would make it more convenient for researchers to select MMR as a comprehensive and valuable method to perform their studies. Currently, professors and Ph.D. students often publish papers in the positivistic context to fulfill their course objectives and receive promotion; plenty of low-quality studies are conducted and published in predatory journals which are of little use to the academic society. That is, researchers encounter 'publish or perish syndrome. According to Arani et al. (2018, p.321), in the Iranian higher education context, "many research projects are repetitive, devoid of any practical benefit to society, and stored in the corner of universities and research centers", which means that they do not meet the needs of academic society.

The second research question explored the adequacy of the Research Methodology course at Ph.D. level. The findings of both the interview and the questionnaire survey showed that most participants in both groups believed that the Research Methodology course is inadequate for conducting MMR at Ph.D. level. They stated that there should be a separate course on MMR (see e.g., Excerpt 3). Also, some of the Ph.D. candidates in the interview said that focusing only on theoretical aspects of MMR is not adequate to equip students to conduct it. Consequently, it seems that a separate course on MMR is the number one priority for TEFL post-graduate students. They want the professors to involve them in the issue, and show them how MMR is practically conducted. For instance, the professors could analyze good pieces of MMR published in accredited nationally and internationally renowned Applied Linguistics journals to acquaint the students with the principles of conducting MMR. This is mentioned by some of the participants (see e.g., Excerpts 4 & 5). Moreover, due to the dominance of positivism in the Iranian higher education system and the positivistic background of the professors, MMR is not seriously considered. Supporting this, one of the faculty members remarked,

> *The professors have positivistic backgrounds and don't have the required knowledge to teach and introduce mixed designs. So, the Research Methodology courses at post-graduate level focus mostly on quantitative methods.*

Regarding the significance of MMR and the tendency of the participants of the current study to conduct this method of inquiry, the results of the study recommend that the higher education system, the curricula, and the syllabi consider MMR as an independent course of study for post-graduate students, and that performing at least one MMR study become compulsory for them. It could thus be argued that in the Iranian higher education system, a momentous paradigm shift ought to occur which moves the system towards the philosophy of pragmatism, in which MMR is acknowledged and paid due attention.

The third research question dealt with the extent to which TEFL faculty members focus on MMR in the Research Methodology course. The results of the questionnaire survey and interviews revealed that most participants, especially faculty members, believed that not enough attention has been paid to MMR in the course. They remarked that the dominance of positivism in the academic context and a lack of trained and experienced professors were the main reasons that faculty members did not focus on MMR as much as it deserved. This line of reasoning is echoed by some of the interviewees (see e.g., Excerpts 6 & 7). It could be concluded that due to the positivistic context of the educational system, most of the faculty members focus on single methods, especially the quantitative method, and prefer to teach it in their classes. According to Atai et al. (2018), the Research Methodology course at Ph.D. level focuses only on theoretical aspects and cannot prepare the students practically to perform their studies. The education system in Iran, particularly the curriculum, concentrates merely on the research theoretical aspects and does not require students to go through the principled steps of doing research practically (Authors, 2021). In addition, focusing on MMR needs skilled and well-trained professors; however, it seems that most professors are not experienced in teaching MMR; hence, post-graduate students are obliged to follow their professors' tastes instead of using MMR as they would prefer. Echoing this, one of the Ph.D. candidates stated,

> *Most of them don't emphasize MMR sufficiently because I think they aren't very well-informed on the subject and only some of them have detailed information regarding MMR.*

Creswell (2003, p. 620) referred to these professors as the "first generation of faculty" who were not sufficiently trained in the MMR process.

Furthermore, according to the content analysis results of the faculty members' Research Methodology syllabi, which support the findings obtained from the questionnaire survey and interviews, it can be concluded that most of them focus on single methods, especially the quantitative method, and little emphasis is allocated to MMR despite its being the preferred approach of most. The overemphasis of the educational system on the quantitative research paradigm, has, in reality, caused no emphasis on MMR. That is, due to the dominance of positivism in the educational system of Iran (Zokaei, 2008; Atai et al., 2018), the emphasis on MMR is not as much as it deserves it. Therefore, faculty members do not pay attention to this method of inquiry sufficiently. For instance, one of the faculty members remarked,

> *There is not enough focus because most of the professors are either qualitatively-oriented or quantitatively-oriented and do not have enough knowledge of MMR.*

Consequently, according to these results and our findings in the present study, the education system in Iran requires to focus more on MMR in the Research Methodology courses at post-graduate studies level, thereby training knowledgeable professors who can teach MMR, to provide the appropriate conditions for researchers to conduct it, as they would prefer.

The fourth and last research question sought to investigate the extent to which the MSRT curriculum focused on MMR. Based on the findings obtained from both the questionnaire survey and interviews, most participants in both groups believed that the MSRT curriculum did not focus on MMR adequately. This is mentioned by some of the interviewees (see e.g., Excerpts 8 & 9). As one faculty member said, the focus was *"less than 10% to be optimistic"*.

We also analyzed the content of the MSRT curriculum on TEFL. This analysis supported the viewpoints of the faculty members and Ph.D. candidates in both the interview and questionnaire survey. According to the findings, the curriculum has three methods in one syllabus for the Research Methodology course and there is no prominent and sufficient focus on MMR as it deserves. Due to the dominance of positivism in the educational system, it can be concluded that the MSRT curriculum neither focuses on MMR nor on qualitative research; the focus is mainly on the quantitative method. As one of the interviewees stated,

The prominent approach in the education system is quantitative, so it can be said that the MSRT curriculum doesn't focus on MMR very much.

As the results of the content analysis showed, the Qualitative and MMR courses are among the optional courses which the universities might choose not to offer in their Ph.D. syllabi. If they choose not to offer it, it becomes the duty of professors to focus, at least theoretically, on all the three methods (in the technical Research Methodology course) and to prepare the students for conducting MMR. Therefore, professors should do their best to compensate for this lack of focus on qualitative and mixed methods approaches by including them in the Research Methodology course syllabi. That is, the professors should keep the curriculum up to date. Consequently, to improve the status of MMR in the Iranian higher education context, the MSRT curriculum needs to seriously consider MMR and focus on this method of inquiry as much as it deserves taking into account the research preferences of faculty members and Ph.D. candidates.

5. Conclusion and Implications

The findings of the current study indicated that TEFL faculty members and Ph.D. candidates preferred to conduct MMR due to its flexibility, data richness, reliability, validity, strength, and comprehensiveness. However, the results showed that despite their MMR preference, the MSRT curriculum and the professors teaching the Research Methodology course focused inadequately on MMR. Furthermore, the current Research Methodology course at Ph.D. level did not prepare students to conduct MMR.

Therefore, the current study might have some implications for the education system. Firstly, the higher education system should change and rectify its attitude toward research methods: it should move towards MMR and focus both theoretically and practically on this research method because it is the preferred approach of professors and Ph.D. candidates. In this respect, the education system should encourage researchers to conduct MMR and notify them of the disadvantages of the purely positivistic approach which hinders researchers from gaining in-depth knowledge of the issues under investigation. Secondly, the MSRT curriculum should prepare a Research Methodology course which focuses on the three research approaches adequately and equally. In this case, the MSRT curriculum can allocate a separate technical course on MMR that meets researchers' preferences for MMR. Thirdly, the education system should train well-informed and knowledgeable professors to teach MMR and prepare doctoral students theoretically and practically to conduct and publish MMR studies. Finally, researchers and doctoral students should be financially supported by the education system to conduct MMR.

The current study, like many others, might suffer some limitations. The first was exploring the research preferences of the faculty members and Ph.D. candidates in the specific context of Iranian TEFL education. Further research could be done to examine the issue and repeat the study in other fields and disciplines, as well as in other contexts, to make the findings more generalizable. The second limitation was the selection method of the participants, which was mainly convenience sampling and based on their availability. Larger samples of randomly-selected participants from other fields of social sciences could be included to explore the issue more deeply. A third limitation was the instruments for data collection: other instruments like focus group discussions could be used in future studies to gain more in-depth and comprehensive findings. Finally, the issue could also be examined from the viewpoints of policymakers to find possible inconsistencies between policymakers and other participants' beliefs.

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Appendix A

Semi-structured Interview Questions

1. Among various approaches to research (i.e., quantitative, qualitative, mixed-methods), which one is the most challenging to design and conduct?
2. If you want to conduct research, which one would you prefer? Qualitative, quantitative or mixed-methods? Why?
3. How familiar are you with how to conduct mixed-methods research? Elaborate please.
4. In your opinion, how much do the TEFL faculty members teaching Research Methodology course focus on mixed-methods research?
5. How much does the MSRT curriculum of the Research Methodology focus on mixed-methods research?
6. In your opinion, is a Research Methodology course at Ph.D. level enough to deal with conducting mixed-methods research? Why? Why not?
7. What are the challenges of conducting mixed-methods research?
8. What is the most important aspect of mixed-methods research?
9. Who do you think is to blame for lack of sufficient knowledge on mixed-methods research? (Education system, professors, students or textbooks, etc.). Why? Elaborate.
10. What can be done to obviate the challenges impeding the conduction of mixed-methods research?
11. Please, add any other comments not mentioned above.

Appendix B

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 to conduct MMR		-.19	.17	-.13		.54
2	Among the various approaches to research MMR is the most challenging approach to conduct					.49	.56
3	TEFL faculty members focus on MMR adequately in Research Methodology courses		-.10	.43	-.67		.67
4	MSRT curriculum of the Research Methodology focuses on MMR adequately	.12		.89			.82
5	The Research Methodology course at Ph.D. program is enough to deal with conducting MMR	.14		.85			.77
6	The most challenging aspect of MMR is the difficulty of finding a good and representative sample	.18	.30	.41	.16	.19	.49
7	The most challenging aspect of MMR is lack of time	.16	.62	-.11	.15	.12	.66
8	The most challenging aspect of MMR is that it requires more effort and financial resources	.11	.21		.27	.64	.67
9	The most challenging aspect of MMR is being familiar with both quantitative and qualitative approaches completely	.17	.65		.15		.60
10	The most challenging aspect of MMR is how to choose an appropriate research design		.77		-.10		.62
11	The most challenging aspect of MMR is data collection procedures	.12	.72	.11	.15		.64
12	The most challenging aspect of MMR is data analysis		.67	.31		.10	.68
13	The most challenging aspect of MMR is data interpretation		.64		.10		.56
14	The most challenging aspect of MMR is data integration	-.28	.49	.39		-.32	.65
15	The most challenging aspect of MMR is facing inconsistent or unexpected findings	-.20		.51	.21	.18	.61
16	The most challenging aspect of MMR is journals publication issues	-.15	.30	.41	.16	.19	.53

17	The most challenging aspect of MMR is the psychological problems	.16	.62	-.11	.15	.12	.66
18	The most challenging aspect of MMR is the dominance of positivism in the academic context		.21	.60			.55
19	The most challenging aspect of MMR is determining the reliability and validity of the research instruments			.52	-.12		.63
20	All of the educational elements including the educational system, (e.g., professors, students, and textbooks) are to blame for lack of sufficient knowledge on MMR	.49	.18	-.30	.12		.49
21	Educational system of the country is to blame for lack of sufficient knowledge on MMR	.79		-.13			.68
22	Professors are to blame for lack of sufficient knowledge on MMR	.65		.22	-.11		.55
23	Post-graduate students of TEFL themselves are to blame for lack of sufficient knowledge on MMR	.34	-.15	.42		.42	.59
24	Textbooks are the main reason for lack of sufficient knowledge on MMR by Iranian post-graduate students of TEFL	.32	-.22	.54	.11		.67
25	One solution to obviate the challenges impeding conduct of MMR by Iranian post-graduate students of TEFL is allocating a separate course to it in the program	.80		-.19			.69
26	One solution to obviate the challenges impeding conduct of MMR is to be financially supported	.74		-.21	.13		.63
27	One solution to obviate the challenges impeding conduct of MMR is encouraging the post-graduate students of TEFL to conduct MMR	.49	-.10	-.31	.13		.54
28	One solution to obviate the challenges impeding conduct of MMR is holding regular workshops for post-graduate students of TEFL	.80			.11		.68
29	One solution to obviate the challenges impeding conduct of MMR is changing the views of educational system	.76					.60
30	One solution to obviate the challenges impeding conduct of MMR is training the adoption of knowledgeable professors to teach mixed-methods	.49	.27	-.39			.62
	Eigenvalues	5.16	3.84	2.35	1.95	1.79	
	% Of variance	17.22	12.80	7.84	6.50	5.97	

Note. Loadings<.40 are omitted.

Extraction Method: Principal Component Analysis

Principal components analysis ascertained the presence of five components with eigenvalues exceeding 1, explaining 17.22%, 12.80%, 7.84%, 6.50% and 5.97% of the variance respectively. The Factor loadings of each item show a number of strong loadings and all variables significantly loading on to five components.

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