



# The interplay of teacher motivation and learner motivation: A Q method study

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## Abstract

This study investigated the interplay of second language (L2) teacher motivation and L2 learner motivation. In total, sixty male foreign language learners, including thirty-five English, nine Arabic, eight French, and eight Russian language learners from a military university in Tehran, Iran were selected using nonprobability purposeful sampling. Q methodology was used as a method for the systematic study of subjectivity and an interview with the most representative participants of each factorial group was conducted to explore the learners' viewpoints toward the interplay of teacher motivation and learner motivation. Hybrid-type Q sampling was used to develop 60 statements related to the interplay of teacher motivation and learner motivation. Using PQMethod, a dedicated statistical program for Q methodology, the Q sorts were intercorrelated and factor-analyzed. Four factors were extracted and rotated by varimax rotation and hand adjustment. Factor arrays and qualitative analyses were used to identify and interpret four distinctive accounts of L2 motivation. The four factors suggested that the learners hold four different prototypical viewpoints regarding the interplay of teacher motivation and learner motivation: (a) Teachers' Role (b) Students' Role in Normal Contexts, (c) Student-Teacher Relationship, and (d) Students' Self-Determined Motivation in Adverse Contexts. The results, furthermore, suggested that different learner prototypes are motivated differently, so teachers should look for alternative motivational strategies that consider learners motivation in the context of learning.

**Keywords** Teacher motivation · Learner motivation · Language learning motivation · Q methodology

## Introduction

Motivation has always been one of the most important considerations in language learning with substantial impacts no one can deny. As one of the key determinants of second and foreign language learning achievement, motivation “provides the primary impetus to initiate L2 learning and later the driving force to sustain the long and often tedious learning process; indeed, all the other factors involved in SLA presuppose

motivation to some extent” (Dörnyei and Csizér 1998, p. 203). The study of L2 motivation has undergone many changes in scope, conceptual frameworks, and approaches, and has developed into a complicated field of study. Shifts of focus that have led to promising new conceptual themes and evolution of new motivational theories, in turn, enrich our understanding of the motivational basis of language learning. Since many factors, such as individual differences and cultural contexts, influence models of L2 motivation, potentially different conclusions might be drawn. Hence, studying the multifaceted nature of motivation, discovering the motives language learners experience and how they prioritize between competing motives, and extending knowledge of other motivational issues, would be fruitful in complementing prior research and significant in advancing second language acquisition research.

Researching motivation is not as straightforward as it seems; it can be encouraging and at the same time challenging. The challenges in researching motivation mostly arise from the nature of motivation. Motivation is not static; it is dynamic and situated. Ellis (2008) discussed the situated and dynamic aspects of propensity factors such as motivation, learning style, and anxiety, and stated that these

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factors “operate differently in different social contexts, and they fluctuate as a result of learner internal and external factors” (p.721). Unobservability, multifacetedness, and dynamicity of L2 motivation require variety of research methodologies, depending on the L2 learning context. Furthermore, the study of L2 motivation as an interdisciplinary field requires some basic knowledge in related fields such as psychology, language education, and linguistics. It requires some understanding of psychology because motivation primarily deals with language learners as human beings. Knowledge of language education and linguistics, in the sense that it focuses on the use of language in a specific context by a learner, is also needed.

Context has played a significant role in second or foreign language learning studies in general and L2 motivational studies in particular (e.g. Dörnyei 2009; Gardner 2010; Ushioda 2014). However, the majority of the related studies have considered context as a variable influencing individual motivation (Dörnyei and Ushioda 2013). In fact, context is not simply an independent background variable separate from the individual; rather, the individual is also an integral part of, and active contributor to, the developing context (Ushioda 2009). According to the current perspectives on motivation and context in educational psychology in general (e.g. Pintrich 2003), and language learning in particular (Dörnyei and Ushioda 2013), scholars have focused on the dynamic and holistic aspects of context. The dynamic aspect of context emerges from the interaction between learners, teachers, and context. That is, like motivation, context is not static but dynamic and is likely to change over time. The dynamicity of context makes the study of contextual factors and motivation a challenging topic that requires a dynamic paradigm in all steps of the research process. However, one of the difficulties in researching motivation is the notion that motivation is context-bound (Ushioda 2009). The term ‘context’ as a broad concept encompasses various layers including learning, social, national and cultural factors. As an example, if we consider a language learning classroom as a micro context, learners’ motivational performance may be affected by different layers of contextual factors such as the behaviour of the teacher and the learners, the constraints of the classroom and the role of the teacher (Waninge et al. 2014).

Cultural dimension has attracted increasing attention in L2 motivation research as some of the motivational factors are culture-specific. For example, models and constructs developed in Western cultural contexts may not be easily applicable to a unique Middle East cultural context such as Iran. In other words, if we consider a language classroom in Iran as a learning context, the type of the relationship between teachers and learners, the cultural constraints of the classroom such as the separation of male and female adult learners in the class and the educational values may be different from those in a Western language learning classroom. Furthermore, contextual factors

can differ from one educational setting to another. Therefore, every language learning in macro and micro-contexts has unique contextual factors and because there are many different contexts of second language learning, researching the issue in different contexts would be of considerable scientific value for both theory and practice. Recently, the present study authors (Jodaei et al. 2018) confirmed the uniqueness of every language-learning context in terms of influential motivational factors by identifying constructs of these factors (e.g. cultural constraints, military regulations interference and situation-specific contextual factors) among Iranian military staff. Hence, it can be claimed that this model of motivational factors is specific to an Iranian military L2 learning context.

Considering the different geographic distributions of the research in L2 motivation from 2005 to 2014, Boo et al. (2015) argued that early researches on L2 motivation were mostly conducted in the unique Canadian setting. The authors reported more diverse distribution in recent years through descriptive statistics. The empirical studies in L2 motivation in 53 countries suggested that the five leading contexts were Japan (11.34%), the United States (8.9%), Mainland China (7.46%), Hong Kong (4.48%), and Taiwan (3.28%). However, even in that report, there was no information regarding Iranian EFL contexts. In comparison to other countries, Iranian L2 motivation researchers have mostly investigated L2 motivations from a Gardner’s socio-education model perspective and application of dynamic and process oriented approaches on L2 learning and motivation studies remain scarce in the Iranian EFL context. The related studies investigating L2 motivation from a complex system approach in Iranian EFL contexts were conducted by Papi and Abdollahzadeh (2012) and Yaghoubinejad et al. (2017). Papi and Abdollahzadeh (2012) studied the relationship between teachers’ use of motivational strategies and students’ motivated behavior. The results suggested that there is a significant relationship between teachers’ motivational practice and students’ motivated behavior. Yaghoubinejad et al. (2017) supported the dynamicity of motivation in the interplay of different motivational factors influencing a group of Iranian EFL learners. Furthermore, there have been few research studies investigating the interplay of teacher motivation and learner motivation in general (Gegersen and MacIntyre 2014), so the findings of the current study may be influential in enhancing our understanding of the situated interplay of teacher motivation and learner motivation.

## Methodology

British physicist and psychologist William Stephenson (1935) introduced Q methodology as a method for the systematic study of subjectivity in the journal *Nature*. Q methodology as a distinct research method from R methodologies can

provide an understanding of human behavior from a different angle. While R methodology studies human behavior from the external observers' point of view, Q methodology studies human behavior from the internal subjects' perspective (Brown 1980). Q methodology makes use of 'social categorization,' which is the creation of social categories by categorizing some people in one particular group based on specific characteristics and placing other people in another group according to other characteristics (e.g. high motivated and low motivated people). Q method is mostly often used for exploring highly complex and socially contested concepts; and subjects from the participants' point of view (Stainton Rogers 1995; Watts 2003). It has been used in diverse research fields; however, there are only a few cases of published research papers regarding language learning and teaching research (e.g. Dörnyei et al. 2016; Irie 2014; Ryan and Irie 2014).

As an innovative exploratory method of inquiry in applied linguistics, Q methodology has been considered as "a highly original research method that can paint [the] emotional and cognitive landscape of a particular context by connecting core feelings and thinking of individuals about a complex subject matter" (Irie 2014, p. 32). L2 motivation has been considered a complex, dynamic, and socially constructed concept, therefore, Q method can be robust in studying L2 motivation. Instead of eliciting passive response dimension, Q methodology is a dynamic medium through which subjectivity can be dynamically expressed (Watts and Stenner 2005). In Q methodology, the participants are invited to take part in a dynamic relating task. In this task, learners are free to go back and forward, and they are free to make any change required during the distribution procedure (unlike other dominant methods for studying people's views and attitudes, such as questionnaires). Q methodology is a mixed method approach in all steps of the research process (e.g. data collection, statistical analysis, and interpretation of the results) (Watts and Stenner 2005). The view focuses on the specific context from a subjective point of view rather than an objective one, and from a situative rather than a positivist perspective.

## Participants and Setting

The participants of a Q method study are sampled theoretically, as in qualitative research using nonprobability sampling (du Plessis et al. 2006). In Q methodology, participants are not representative of the population; therefore, as Brown (1980) stated, generalizability is not the focus of a Q method study. However, this does not mean that the findings of a Q methodology study may have no wider theoretical or pedagogical implications. Generalization is only one way of induction to study persons' behavior. Watts and Stenner (2012) state that studies investigating smaller numbers of participants must look to different kinds of generalization focusing on concepts

or categories, theoretical propositions and models of practice. Furthermore, generalizability in Q method is not considered in terms of sample and statistics but in terms of concepts and semantics. Q studies, in this regard, "can server [as] a corrective to some of the illegitimate forms of generalization rife among the social and psychological sciences." (Watts and Stenner 2012, p. 73). For instance, if a study shows that male students are more motivated than female counterparts are, it can be inferred that the mean score of male students is significantly higher than that of female students. A close observation of data often shows, however, that certain subgroups of male students perform poorly or certain types of female students perform well. R methodology can unlikely show the differences in the strategies used by these subgroups because it may lead to false generalization as a result of summative data.

Unlike traditional R methodologies that require a large number of participants, Q methodology research does not involve large numbers of participants because the focus is on subjectivity (Brown 1980). In this method, the variables are not tests or traits but individuals and participants; hence, it investigates the correlation between persons as variables and not psychometric traits such as motivation or anxiety. Unlike the passive role of participants in R methodologies, participants in a Q study play an active and a dynamic role, especially in rank ordering the heterogeneous sets of challenging items. As a rule of thumb, Q methodology experts consider 40–60 participants as the ideal number, although the analysis can easily be conducted with even fewer (Brown 1980; Stainton Rogers 1995; Watts and Stenner 2012).

Considering the above requirements, sixty male foreign language learners, from the language center of a military university in Tehran, Iran, including thirty-five English, nine Arabic, eight French, and eight Russian language learners took part in the study. The language center was established in 1950s, long before Iranian Revolution of 1979, to meet the Iranian military requirements. A number of courses, including extensive and intensive English, Arabic, Russian and French courses had been designed for Iranian military learners. In this center, the learners are invited from different branches of the army across the country to take part in the courses. The learners are selected based on a selection test, and those who pass the test are placed in different classes according to their level of proficiency. The classes meet for three sessions (90 mins each) per day from Saturday to Wednesday of every week, with courses usually lasting for about six months.

## Reliability and Validity

The concepts of reliability and validity, as defined in R methodologies, are not the concern of Q methodology. Brown (1980) stated, "The notion of validity has no place since there is no external criterion for a person's point of

view” (p.191). In other words, in a Q study, the participants’ attitudes are not in the items but what the participants do with the items lead to a construction of meaning. It is believed that “Q methodology study delivers what it claims to deliver, i.e. the viewpoint of its participants” (Watts and Stenner 2012, p.66). Furthermore, experts were consulted in designing the Q set, to check the content and face validity of the Q items. Furthermore, both coverage and balance, as the two vital characteristics of an effective Q set, were taken into account as suggested by Watts and Stenner (2012). Moreover, to add depth to the understanding of participants’ subjectivity, an interview was conducted with the most statistically representative participants in each factor. The interview section provided simple and effective first-person viewpoints from the participants. The kind of the comments the participants made, added a form of triangulation and this was a useful way to consider these viewpoints from another perspective.

## Data Collection and Data Analysis Procedures

The data collection and data analysis procedures were the same as the procedures taken in Q methodology. The five steps in Q study include: defining a research question, developing a Q set, administrating Q sorts, carrying out statistical analyses, and interpreting the results.

## Defining a Research Question

Defining an appropriate research question is of paramount importance in any Q method study. The nature and general structure of a Q set are determined by the type of research question. The key research question of this study aimed to find answers to the questions related to the interplay of L2 teacher motivation and L2 learner motivation. The complex teacher-learner L2 motivation interactions are challenging to investigate. That is why Dörnyei (2009) states that it is a relatively uncharted territory and there have only been a few research methodological guidelines for conducting language related dynamic system studies. This new transdisciplinary and interdisciplinary theme for applied linguistics (Larsen-Freeman 2012) presents research on motivation dynamics that identifies more complex avenues to favor increasingly less traditional treatments of L2 motivation (Boo et al. 2015). Another point of differentiation for this study arises from the fact that related studies on teacher motivation in L2 remain scarce. Although teacher motivation in educational psychology and teacher education has experienced a *zeitgeist* (Watt and Richardson 2008), teacher motivation in L2 is a relatively neglected area of research. Teacher motivation in L2 learning is crucial as it affects learners’ motivation and thus their learning achievement (Dörnyei 2018; Martin 2006; Pelletier et al.

2002). Furthermore, the current study aimed at investigating L2 teacher motivation and its interplay with learner motivation beyond a cause-effect linear relationship perspective, which has rarely been implemented in Iranian L2 motivation researcher studies. As Dörnyei and Ushioda (2013) state, most of the studies conducted in the related literature have addressed the identification of learners’ L2 motivation taking an a priori approach. That is, researchers have proposed a number of assumptions in advance and have tried to test these assumptions using psychometric research techniques. Such an approach to L2 motivation, however, fails to investigate the interaction of teacher motivation and learner motivation and cannot investigate the complexity and the dynamicity of L2 motivation. Hence, an inductive posteriori approach is likely to provide a more complex and an in-depth understating of L2 motivation.

## Developing a Q Set

In Q methodology, a Q set is a number of heterogeneous statements that aims to evaluate respondents’ views about a particular topic. To prepare a concourse consisting of 320 statements, the researchers used Hybrid-type Q sampling in which the Q concourse (the overall population of statements) was drawn from both primary (e.g. interviews with the learners in the pilot group), and secondary sources (e.g. established questionnaires and reviews in the literature of L2 motivation including Waninge et al. 2014; Kikuchi 2017; Kormos and Csizer 2014; MacIntyre et al. 2009; Papi 2010; Papi and Abdollahzadeh 2012; Rivers 2012; Ryan 2009; Taguchi et al. 2009; You and Dörnyei 2014). After organizing, refining, reducing, removing, and pre-setting the items properly in an iterative and recursive pattern and piloting them, the researchers finally grouped 60 statements related to the interplay of teacher motivation and learner motivation. Since all of the statements of the Q set must be the representatives of a probable answer to the research questions, the aim was to design the statements to closely relate to the research question.

## Administrating the Q Sorts

The current study used an 11-point scale ranging between two extremes, from +5 (e.g. most agree, most characteristic, most important) to −5 (e.g. least agree, most uncharacteristic, most unimportant). This scale was based on Brown’s (1980) rule that for the number of items from 40 to 60, a range of +5 to −5 should generally be employed. The researchers distributed the consent form, the background information questionnaire, the Q sorting instruction, the Q diagram, the Q sorts, as well as refreshments among the participants. The first session of data

collection was conducted with the learners of French as a foreign language because of the availability issue. Before the participants' arrival, the Q cards and ranking values were arranged on each desk with the lowest ranking (−5) on the left side, zero in the middle, and the highest ranking (+5) on the right. Firstly, the researchers asked the participants to look at the instructions provided and explained the procedures further personally for those participants who had problems understanding the procedures. Before starting the Q sorting process, the participants were asked to have a look at the cards to become familiar with their content. They then checked each card individually and started the Q sorting procedures. The participants divided the cards into three provisional ranking categories depending on their context and potential application: Category One included those items about which the participants had agreed, Category Two included those items about which the participants disagreed, and Category Three included those items about which the participants didn't feel positively or negatively. For convenience, the participants put positively labeled card piles on the right side, negatively labeled card piles on the left side, and the neutrally labeled cards in the middle of the distribution. There were no limitations on the number of items that could be placed in any of these three categories.

In the next stage, the participants started to complete the Q sort from the three categories. They were also told that they should mimic the shape of the distribution diagram provided on their desk and the final output should resemble the distribution diagram. The researchers asked the participants to spread out the cards from the first category and read them carefully once more. They were also requested to check the distribution diagram and the number of allowed items for each ranking value. The participants allocated a place for the cards, starting from the higher ranking (+5), from the right to the left. For some participants, it was challenging to immediately put three items under +5. The researchers asked these learners in person to reread all items in Category One carefully, select those items to which they agreed most and then repeat the procedure until the allowed number of items remained. This reduced the number of cards and provided a less complex distribution within the category. The researchers observed that during the Q sorting procedures, the participants took the study seriously and were highly motivated in completing the task. To secure the best data collection, participants' comfort was taken into account because the challenging Q sorting process took about more than two hours from the beginning to recoding the data on the distribution diagram. The researchers also asked the participants to take a short rest when they felt tired and to make use of the provided refreshments. The participants also had opportunities to return and check the configuration again and again; some of them did so, changing the positions of a number of

items after completing the Q sorting process. This is the value of Q methodology; it allows participants to return and review their responses. During the sorting procedure, the researchers were available to the participants and responded to questions and problems that they raised. After the participants finished the Q sorting procedures, the researchers took responsibility for transferring the item numbers into the provided distribution diagram in front of the participants, as Watts and Stenner (2012) stated, the participants tend to make mistakes when completing this task. The same procedures were conducted with the other participants in the English, Arabic, and Russian classes in the subsequent sessions.

To gain a better understanding of the topic and to collect sufficient information from the participants of the study, the researchers conducted an interview with the most significantly representative participants of each factorial group based on the Q analysis results. In this step, the participants were given an opportunity to provide their comments and reasons for ranking the items in the way they did. Post-interviews with participants are very important for a Q method study because they can provide a fuller, richer, and more detailed understanding of participants' viewpoints (Brown 1980; Watts and Stenner 2012).

### Carrying out Statistical Analysis and Interpreting the Results

In Q methodology, statistical analysis includes an inverted factor analysis. PQ Method (Schmolck 2002) was used in data analysis to generate the initial by-person correlation matrix. In this analysis, the grouping of the constructs "are based on the ranking of all items in relation to one another not the similarity of independent responses to each item, which is usually the case for Likert-scale-type questionnaires" (Dörnyei et al. 2015, p. 366). After factor extraction, varimax rotation, and by-hand adjustment, the results were interpreted based on factor arrays. The final stage was conducted based on the factor arrays table and the configurations of the statements. The key issue for the analysis was the highest and the lowest scores in terms of factor loading. The results of the other statements in the Q set, demographic information, and the interview data were used to build the concluding interpretations. A narrative style was used to report the factor interpretation. In this style, the related items of particular factors are ordered and linked together to provide a holistic and unitary account of the factors' viewpoint (Watts and Stenner 2012). Furthermore, the interview data from the significantly loaded participants were used to develop an in-depth understanding of the participants' subjectivities.

**Table 1** Q sort numbers associated with each factor of the study

| Factors                                                            | Q Sorts                                        |
|--------------------------------------------------------------------|------------------------------------------------|
| Factor 1: Teacher's Role                                           | 1,4,5, 17,18, 32,33,36,37,46,50,52,56          |
| Factor 2: Students' Role in Normal Contexts                        | 6,10,12,16,22,24,26,27,28,30,34,39,43,44,45,59 |
| Factor 3: Teacher-Student Relationship                             | 15,21,29                                       |
| Factor 4: Students' Self-Determined Motivation in Adverse Contexts | 3,7,9,11,13,20,25,31,35,47,48,53,55,           |
| Confounded:                                                        | 2,8,14,38,42,                                  |
| Non-significant:                                                   | 19,23,40,41,49,51,54,57,58,60                  |

## Results and Analysis

Using the PQMethod, a statistical program dedicated to the requirements of Q method, 60 Q items were intercorrelated and factor-analyzed. Factor loadings of  $\pm 0.43$  were considered significant at the  $p < 0.01$ . Four factors were extracted and rotated by varimax rotation and hand adjustment as the main determinants of motivation. The four factors accounted for 45 of the 60 Q sorts of the study and explained 44% of the variance. According to Watts and Stenner (2012), if this value exceeds above 35–40%, it is acceptable. Moreover, the four unrotated factors' eigenvalues exceeded 1.00. Hence, the researchers accepted the four-factor solution to be the best one. Table 1 shows the Q sort numbers associated with each factor.

As Table 1 shows, thirteen of the sixty Q sorts loaded significantly on Factor 1, sixteen on Factor 2, three on Factor 3, and thirteen on Factor 4. Five of the Q sorts loaded significantly on more than one factor, and ten Q sorts were not loaded significantly.

A unique identification code was attributed to each Q sort. PQMethod allows up to eight characters to be used to make up the name of the Q sorts. Hence, to summarize the demographic information, the researchers used the information about the course the participants had taken – (English (E), Arabic (A), Russian (R), and French (F)) – and their age, language level, and previous experience in learning a foreign language in terms of yes (Y) or No (N) to create the subject IDs. Therefore, a subject ID of E31IY means the Q sort is related to a respondent who is taking the English course, is 31 years old, and is an intermediate English language learner with previous language learning experience. Or F37UBN means the Q sort is related to a respondent who is learning French, is 37 years old, and is an upper beginner learner without any previous experience in French learning.

## Factor Interpretation

In factor interpretation, the researchers named all the four factors followed by different tables containing statement clusters for meaningful interpretation of patterns found. Each table includes the related statements, their numbers, and their Q sort rankings. Such an interpretation allows important items per

factor to be reported in a consistent and data-oriented fashion to identify the polarization of viewpoints. The relative item rankings in Table 2 were considered and item-by-item analysis was performed starting with item No. 1 to item No. 60. Table 2 illustrates the four factor arrays for the current study, along with the item numbers and the related statements.

### Factor 1: Teachers' Role

Factor 1 accounted for 15% of the study variance and thirteen participants were significantly associated with this factor. They were eight English, two Russian, two French, and one Arabic student/s ( $M = 30.30$ ,  $SD = 5.39$ ). Six of the participants had attended language-learning courses previously and seven of them had started language learning when they entered the center. Interpretation of Factor 1 follows with the key related statements to Factor 1.

Teachers were considered to play an important role in motivating students through their way of teaching, positive attitude towards their students, and their appearance. More specifically, teachers can be sources of motivation if they pay attention to their students' progress and provide feedback, involve them in class activities, encourage both cooperative and competitive learning, and use audio-visual materials.

| No. | Statement                                                                                                                               | Ranking |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------|---------|
| 54  | A teacher who encourages and inspires his/her students helps them to perform better.                                                    | +5      |
| 11  | I feel more inspired when the teacher recognizes my strengths in foreign language class.                                                | +5      |
| 46  | Receiving positive feedback from the teacher is motivating                                                                              | +4      |
| 33  | The use of visual aids, such as colorful charts, diagrams, and videos in class inspires students to learn.                              | +4      |
| 9   | A teachers' use of student-centered activities (such as cooperative learning) is effective and provides positive pressure in the class. | +4      |
| 53  | When a teacher recognizes a job well done, learners feel motivated.                                                                     | +3      |
| 47  | I become less motivated when my teacher tries to get me to participate in the class.                                                    | −3      |
| 39  | Creating a competitive atmosphere in the classroom demotivates students.                                                                | −5      |

**Table 2** Q sort ranking for each factor array

| Item number and wording                                                                                                                                                                                                        | Factor Arrays |    |    |    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----|----|----|
|                                                                                                                                                                                                                                | 1             | 2  | 3  | 4  |
| 1 When the teacher returns my marked assignments, I feel motivated.                                                                                                                                                            | 1             | 3  | -1 | 1  |
| 2 To be honest, even a great teacher cannot inspire an unmotivated learner.                                                                                                                                                    | 0             | -4 | 0  | 3  |
| 3 Despite my level of motivation, I feel that I will never be able to form a positive relationship with my teacher.                                                                                                            | -3            | -2 | -1 | -3 |
| 4 I feel inspired when the teacher delivers in an interactive manner.                                                                                                                                                          | 4             | 0  | -3 | 2  |
| 5 Studying the language is essential as it helps me to gain the approval of my teachers.                                                                                                                                       | -2            | -3 | -2 | -5 |
| 6 If the teacher provided immediate feedback, I would be more interested in learning.                                                                                                                                          | -2            | 3  | -1 | 0  |
| 7 Language teachers pay more attention to students who are less motivated.                                                                                                                                                     | -3            | -1 | 2  | -3 |
| 8 Students who do not have a positive attitude towards their teacher achieve low grades.                                                                                                                                       | -1            | -3 | 2  | -1 |
| 9 A teachers' use of student-centered activities (such as cooperative learning) is effective and provides positive pressure in the class.                                                                                      | 2             | 4  | 4  | 2  |
| 10 Students are motivated when the teacher gives them easy assignments.                                                                                                                                                        | -2            | -2 | -3 | -2 |
| 11 I feel more inspired when the teacher recognizes my strengths in foreign language class.                                                                                                                                    | 5             | 4  | 4  | 1  |
| 12 Creating a threatening environment (such as threatening by scores) is motivating.                                                                                                                                           | -5            | -5 | -2 | -5 |
| 13 An unmotivated teacher is the main factor in a student's poor performance.                                                                                                                                                  | -5            | -2 | 1  | 4  |
| 14 A motivated teacher inspires motivated learners.                                                                                                                                                                            | 3             | 1  | 3  | 5  |
| 15 Inviting students to give a presentation in front of the class is motivating.                                                                                                                                               | 3             | 5  | 3  | 2  |
| 16 The use of rewards motivates learners, leading to improved performance.                                                                                                                                                     | 1             | -1 | -5 | 0  |
| 17 A teacher's willingness to ask questions makes students more interested in answering questions.                                                                                                                             | 0             | 2  | 0  | 1  |
| 18 If my teacher is aware of my goals, I study more.                                                                                                                                                                           | -1            | -2 | 1  | -2 |
| 19 An emphasis on testing and grading leads to improved performance among learners.                                                                                                                                            | -4            | -4 | -2 | -4 |
| 20 A strict teacher (e.g.: asks for several assignments every session) is demotivating.                                                                                                                                        | 0             | -5 | 2  | -2 |
| 21 An uninspired teacher is the main reason for a student's lack of motivation.                                                                                                                                                | -4            | 0  | -2 | 1  |
| 22 It is motivating to be asked for feedback about the instructor's teaching style and the class in general.                                                                                                                   | 0             | 0  | 3  | -1 |
| 23 The personality traits of a teacher (e.g. extroversion/introversion, time management in the class, and approachability) have an impact on student motivation.                                                               | -4            | -1 | 1  | -4 |
| 24 Using a dynamic and interesting teaching style motivates students to learn more.                                                                                                                                            | 5             | 4  | 4  | 2  |
| 25 A learner's motivation is a personal issue and the teacher has just a minor role to play.                                                                                                                                   | -2            | -2 | 0  | -2 |
| 26 Students are more successful if the teacher is available (in or out of class).                                                                                                                                              | 4             | 1  | 5  | 0  |
| 27 When a teacher gives students the opportunity to take control of the class (allowing the students to choose the topic of discussion, for example), they become more engaged and are motivated to participate in the lesson. | 1             | 2  | 3  | -1 |
| 28 Students feel demotivated when the teacher gives them difficult assignments.                                                                                                                                                | -1            | -1 | -4 | -1 |
| 29 Relating lessons to real life situations (e.g. incorporating short stories about the students' town) makes learning more interesting.                                                                                       | 3             | 0  | 1  | 0  |
| 30 I am more focused and motivated when my teacher maintains eye contact while teaching.                                                                                                                                       | 2             | 3  | 2  | -1 |
| 31 Allowing students to work in groups can make them more enthusiastic about classroom activities.                                                                                                                             | 1             | 4  | 4  | 2  |
| 32 When students are encouraged to find self-motivation for completing classwork, they feel motivated.                                                                                                                         | -1            | 2  | 0  | 0  |
| 33 The use of visual aids, such as colorful charts, diagrams, and videos in class inspires students to learn.                                                                                                                  | 4             | 2  | 5  | 4  |
| 34 When the teacher is enthusiastic about teaching, students become excited about learning.                                                                                                                                    | 2             | 2  | -3 | 0  |
| 35 A student who dislikes their language teacher usually has low scores.                                                                                                                                                       | 0             | 0  | -1 | 4  |
| 36 Knowing the teacher well (for example knowing about the teacher's experience and achievements) motivates me more.                                                                                                           | 2             | -1 | 0  | -1 |
| 37 When a teacher smiles, and is friendly with their students (such as calling learners by their first name), the students become motivated.                                                                                   | 2             | 3  | 5  | 2  |
| 38 When I am aware of the teacher's plan at the beginning of the class, I become motivated.                                                                                                                                    | 0             | 3  | 0  | -2 |
| 39 Creating a competitive atmosphere in the classroom demotivates students.                                                                                                                                                    | -4            | -3 | -5 | -3 |
| 40 Overall, during my studies, I have had motivated teachers who inspired me to learn the foreign language.                                                                                                                    | -2            | -2 | -1 | -2 |
| 41 If there were a boring teacher in front of the class, there would be unmotivated learners.                                                                                                                                  | 0             | -3 | 3  | 4  |
| 42 Low motivation among students results from the teacher's lack of motivation.                                                                                                                                                | -1            | -4 | -2 | 1  |
| 43 I feel more inspired when the teacher recognizes my weakness in foreign language class.                                                                                                                                     | 2             | 2  | 0  | 0  |
| 44 The use of different teaching methods (e.g. lectures, game, and discussions) is demotivating.                                                                                                                               | -5            | -3 | -4 | -3 |

**Table 2** (continued)

| Item number and wording                                                                                           | Factor Arrays |    |    |    |
|-------------------------------------------------------------------------------------------------------------------|---------------|----|----|----|
|                                                                                                                   | 1             | 2  | 3  | 4  |
| 45 Our teachers know how to motivate learners, in fact they know how to use motivational strategies well.         | -2            | -1 | -3 | -5 |
| 46 Receiving positive feedback from the teacher is motivating.                                                    | 4             | 0  | -4 | 2  |
| 47 I become less motivated when my teacher tries to get me to participate in the class.                           | -3            | -5 | -3 | -4 |
| 48 On reflection, I think my teacher's lack of motivation contributed to my poor performance in language class.   | -2            | 0  | -2 | 1  |
| 49 If a class has a boring teacher, it will have less successful students.                                        | 0             | -1 | 1  | 5  |
| 50 A teacher's positive attitude towards the students' capabilities has a positive impact on their overall score. | 3             | 1  | 2  | 3  |
| 51 Students are less motivated when the teacher moves around the classroom while teaching.                        | -1            | -4 | -5 | -4 |
| 52 The appearance of the teacher, including the way they dress, has little impact on students' motivation.        | -3            | 1  | 0  | 0  |
| 53 When a teacher recognizes a job well done and offers congratulations for it, learners feel motivated.          | 3             | 1  | 2  | 3  |
| 54 A teacher who encourages and inspires his/her students helps them to perform better.                           | 5             | 2  | -1 | 3  |
| 55 If a teacher has high expectations of his/her students, they become motivated.                                 | -1            | 0  | 1  | 1  |
| 56 The teacher's attention to my learning progress affects my language learning.                                  | 2             | 5  | 2  | 3  |
| 57 A close relationship between teacher and student leads to the student achieving more.                          | 1             | 5  | 1  | 5  |
| 58 Students who have a positive relationship with their teacher make more effort                                  | 1             | 1  | -1 | 3  |
| 59 Students cannot master a foreign language unless they are taught by a motivated teacher.                       | -3            | -2 | -4 | -2 |
| 60 Identifying learning goals by teachers has an impact on the rate at which students learn.                      | 1             | 1  | -2 | -1 |

Teachers' positive attitude towards students and their attention to learners' strength and weakness also have a positive impact on learners' motivation and performance. A teacher may use a dynamic and interesting teaching method to promote learners' motivation and performance. However, dynamic teaching may have different meanings regarding the context of use. For instance, E36IY, as one of the most representative participant of Factor 1, agrees with the proposed usefulness of dynamic teaching but he defines dynamic teaching as a kind of teaching in which the teacher has a personalized educational plan. Teachers need to implement the plan as much as the course allows. Changes to this plan are expected, and the teachers need to be flexible in implementing these plans.

E27UBY: By educational policy, I mean a teacher should know the starting point and the ending point. The teacher should have a kind of personalized educational plan and should be able to implement it in the class, and he/she should not be present in the class without that plan. Many teachers come to the class without having this plan, even they do not know what to do in the class, and there is no defined teaching policy.

| No. | Statement                                                                                                      | Ranking |
|-----|----------------------------------------------------------------------------------------------------------------|---------|
| 54  | A teacher, who encourages and inspires his/her students, helps them to perform better.                         | +5      |
| 4   | I feel inspired when the teacher delivers in an interactive manner.                                            | +4      |
| 50  | A teacher's positive attitude towards the students' capabilities has a positive impact on their overall score. | +3      |

In another interview with the other statistically selected participant of Factor 1 (E36IY), the interviewer provides the following statement to the participant and asks him to provide comments.

Interviewer: An unmotivated teacher is the main factor in a student's poor performance (13:-5).

E36IY: We cannot say that an unmotivated teacher is the most important reason for students' lack of motivation and their weak performance. Obviously, it depends also on learners. My teacher is my model, if my teacher, especially my first language teacher would not be a motivated one; I would abandon foreign language learning.

The result of the interview with one of the representative participants of Factor 1 (F37UBN) confirmed the participants' positive ranking of Q sorts related to teacher encouragement, friendly relations with learners, and cooperative learning:

Interviewer: A teacher, who encourages and inspires his/her students, helps them to perform better. (54:+5)

F37UBN: One of our part-time teachers here who is an MA of French language uses interesting teaching ... he has a close relation with students, he makes fun, this leads to better learning and even the learners don't feel time passing in the class, actually he lets learners participate in class cooperatively.

Additionally, teachers' appearance, such as the way they dress, plays an important role in learners' motivation.

However, the personality traits of a teacher (e.g. extroversion/introversion) have a minor role on students' motivation.

| No. | Statement                                                                                                                                                        | Ranking |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 52  | The appearance of the teacher, including the way they dress, has little impact on students' motivation.                                                          | -3      |
| 23  | 23-The personality traits of a teacher (e.g. extroversion/introversion, time management in the class, and approachability) have an impact on student motivation. | -4      |

Learners are also sensitive to teachers and the language center administrators' behavior, and their every action can influence learners' motivation. The results of the Q analysis showed that the participants in this factor were not successful in making a positive and friendly relationship with their teachers. One possible reason for such a failure is the teacher's treatment of the learners' achievements, as explained by E31PIN:

Teachers' behavior and the way they treat the learners affect students' motivation ... I remember in this course one of our teachers introduced the top learner to the center administration, but it was not notified by the administration and next time the students did not try that much, because they understood that they may encounter the same problem.

## Factor 2: Students' Role in Normal Contexts

Factor 2 accounted for 14% of the study variance and 16 participants were significantly associated with it ( $M = 27.5$ ,  $SD = 4.25$ ). The participants of this factor included nine English, four Arabic, two Russian, and one French language learner/s. Only five of the participants had taken some courses in foreign language learning and eleven of them had started foreign language learning with their entrance to the course.

This factor shows that in a normal context when the teacher is motivated, students are not necessarily motivated even though learners' motivation is not solely a personal issue and teachers may play some role in its improvement. The learners in this factorial group acknowledge a relatively less important role for language teachers and attribute their success to other factors. Learners' motivation is slightly bound to teacher motivation but teacher motivation is not a key determinant of learners' motivation since even if learners have unmotivated teachers, it is possible for them to master the second language and be motivated learners.

| No. | Statement                                                                                  | Ranking |
|-----|--------------------------------------------------------------------------------------------|---------|
| 41  | If there were a boring teacher in front of the class, there would be unmotivated learners. | -3      |
| 5   | Studying the language is essential as it helps me to gain the approval of my teachers.     | -3      |
| 8   | Students who do not have a positive attitude towards their teacher achieve low grades      | -3      |
| 42  | Low motivation among students results from the teacher's lack of motivation.               | -4      |

One of the possible ways in which a teacher can motivate learners is by encouraging the learners to find self-motivational strategies for completing their classroom tasks. Students' use of motivational strategies for completing their classroom tasks can be useful. For example, students' participation in classroom activities such as presenting a speech in front of the students or working either cooperatively or competitively in groups is highly motivating. Because of working in groups and learning by themselves, learners feel a kind of self-control and independence by which they become more engaged and are more motivated in the language learning process.

| No. | Statement                                                                                                                                                                                                                   | Ranking |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 15  | Inviting students to give a presentation in front of the class is motivating.                                                                                                                                               | +5      |
| 9   | A teachers' use of student-centered activities (such as cooperative learning) is effective and provides positive pressure in the class.                                                                                     | +4      |
| 31  | Allowing students to work in groups can make them more enthusiastic about classroom activities.                                                                                                                             | +4      |
| 27  | When a teacher gives students the opportunity to take control of the class (allowing the students to choose the topic of discussion, for example), they become more engaged and are motivated to participate in the lesson. | +3      |
| 32  | When students are encouraged to find self-motivation for completing classwork, they feel motivated.                                                                                                                         | +2      |
| 44  | The use of different instructional tools (e.g. lectures, game, and discussions) is demotivating.                                                                                                                            | -3      |
| 29  | Creating a competitive atmosphere in the classroom demotivates students.                                                                                                                                                    | -3      |

Moreover, students' metacognitive ability can be encouraged and activated when they are informed about the learning plans at the beginning of the course and at the beginning of every class because knowing the educational plans and learning goals can contribute to higher levels of preparation and motivation for learning. Effective teaching is more evident when students know the course's general educational plan and the detailed class plan.

| No. | Statement                                                                                 | Ranking |
|-----|-------------------------------------------------------------------------------------------|---------|
| 38  | When I am aware of the teacher's plan at the beginning of the class, I become motivated.  | +3      |
| 60  | Identifying learning goals by teachers has an impact on the rate at which students learn. | +1      |

In the interview section, E31PIN (a 31 years old intermediate English language learner without previous language learning experience), with factor loading of 0.58, as the most representative participant of Factor 2, commented on the importance of learning self-motivational strategies. These strategies are person-specific and context-bound, so they differ from one person to another and from one learning context to another. According to E31PIN:

The learners need to be motivated themselves; they are just looking for a hint from their teachers, because it is only in this course that I have contact with my teacher and after that I will continue learning the language by myself ... I will not have access to my teacher after this course so I need motivation to continue myself.

In response to the Q-sort (54:+5) provided, E31PIN defines a motivated teacher as a teacher who is not strict and uses encouragement to motivate learners. From the participant's (E31PIN) point of view, a language teacher needs to be an active and dynamic one to motivate learners because the teacher's lack of dynamicity influences the learners' performance:

... A teacher who always sits on his chair and never stands up in the classroom would have dormant unmotivated learners. Teachers should encourage the learners by tangible motivators and that motivators should be noticed ...

Students' participation in classroom activities, such as presenting a lesson in front of the students and working cooperatively in groups, is highly motivating.

The interview with the most typical participant of Factor 2 confirmed the same results by exemplifying a real case, which was happening in the context of the study:

E31PIN: We are eight learners in two groups, each group consisting of four students ... When four participants are discussing about a particular topic, the learner who starts a discussion is a competent learner. As a result, I have to say something as a participant, and that is why (I say) group work is motivating.

Knowing the teacher's syllabus and course plan creates a feeling of involvement for the learners. The Q-analysis section confirms that knowing the general and specific educational plan contributes to higher motivation (38: +3,) since it motivates learners to prepare beforehand.

E31PIN: When our teacher comes to the class he makes his plan clear ... then I understand that what we (I) want to do in the class in that particular session ... that's why I try to prepare myself for that session.

### Factor 3: Student-Teacher Relationship

Factor 3 accounted for 4% of the study variance and three participants were significantly associated with this factor. There were two English and one Arabic language learner/s ( $M = 26.33$ ,  $SD = 3.21$ ). The two English learners had previous experience of taking part in English learning courses and the Arabic learner did not have any language learning experience.

Teachers' close and friendly relations with learners are highly motivating and encourage the latter to make more effort and hence gain more achievements. A teacher can construct such a relationship by some techniques such as calling the learners by their first names and encouraging their participation in classroom activities. One other way to make such a relationship is by creating a positive attitude in language learners because students' positive attitudes towards their teachers can affect their language achievement. Teachers should not ruin this relation by being too strict, paying attention only to motivated learners, or creating a threatening learning environment.

| No. | Statement                                                                                                                                 | Ranking |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 37  | When a teacher smiles, and is friendly with their students (such as calling learners by their first name), the students become motivated. | +5      |
| 20  | A strict teacher (e.g. asks for several assignments every session) is demotivating.                                                       | +2      |
| 7   | Language teachers pay more attention to students who are less motivated.                                                                  | +2      |
| 47  | I become less motivated when my teacher tries to get me to participate in the class.                                                      | -3      |
| 12  | Creating a threatening environment (such as threatening by scores) is motivating.                                                         | -2      |

A positive working relationship can be influenced by creating a positive attitude in language learners through paying close attention to their learning progress rather than imposing language learning goals onto the learners and by being available in and out of the classroom for all students.

| No. | Statement                                                                                 | Ranking |
|-----|-------------------------------------------------------------------------------------------|---------|
| 26  | Students are more successful if the teacher is available (in or out of class).            | +5      |
| 8   | Students who do not have a positive attitude towards their teacher achieve low grades.    | +2      |
| 56  | The teacher's attention to my learning progress affects my language learning.             | +2      |
| 60  | Identifying learning goals by teachers has an impact on the rate at which students learn. | -2      |

The interviewees were asked to provide comments regarding some of the items that were given ranking values of +5 and -5. F23UIY, a 23 years old upper-beginner French language learner with previous experience of French learning, as the most representative learner of Factor 3 with factor loading of 0.47, defined a motivating teacher as a teacher "who is interested in language

teaching ... and has chosen his career by interest ... he also wouldn't let daily problems affect his performance in the class". This was expanded on in the interview as follows:

Interviewer: When a teacher smiles and is friendly with their students (such as calling learners by their first name), the students become motivated (37:+5).  
F23UBY: A friendly relation is a relationship in which the teacher treats the learners in a motivating way. Some teachers are boring; they just want to finish their class... they do not even make a small fun in the class... In this context, the learners will become demotivated. The effect is reciprocal and teachers will become demotivated too.

As the interview shows, the learner agrees with the motivating role of teachers-learners friendly relationship, confirming the related Q sorting analysis result (37:+5).

F23UBY: If the teacher stands or sits on one place without any physical activity in the class, this will be boring for both sides. Actually, we had such teachers ... in this case, he would not be aware of the class setting, but when he stands up and moves in the class, the learners would be more motivated than those learners whose teacher just sits on the chair on calls students to read the books aloud.

Factor 4: Students' Self-Determined Motivation in Adverse Contexts

Factor 4 accounted for 11% of the study variance and thirteen participants were significantly associated with this factor. There were seven English, three Russian, one French, and one Arabic student/s ( $M = 26.92$ ,  $SD = 5.18$ ). Although teachers play a key role in learners' motivation in the sense that a motivated teacher inspires motivated learners, the learners believed that during their language learning life, from primary school to university, they had not had highly motivating and inspiring teachers and as a result, did not know how to make use of motivational strategies well. Some learners master a foreign language even without a motivated teacher if they are determined to do so. These learners are not learning a language to gain their teachers' positive feedback, rewards, or their confirmation.

| No. | Statement                                                                                              | Ranking |
|-----|--------------------------------------------------------------------------------------------------------|---------|
| 45  | Our teachers know how to motivate learners; in fact they know how to use motivational strategies well. | -5      |
| 16  | The use of rewards motivates learners, leading to improved performance.                                | -5      |
| 59  | Students cannot master a foreign language unless they are taught by a motivated teacher.               | -4      |
| 46  | Receiving positive feedback from the teacher is motivating.                                            | -4      |

An explanation beyond these factors may be that the learners' positive attitude towards the teacher and the teacher-learner relationship are influential in learners' achievement and their own self-determined approach towards motivation unaffected by unmotivated teachers.

| No. | Statement                                                                              | Ranking |
|-----|----------------------------------------------------------------------------------------|---------|
| 35  | A student who dislikes their language teacher usually has low scores.                  | +4      |
| 5   | Studying the language is essential as it helps me to gain the approval of my teachers. | -5      |

The two most representative participants of this factor are a 24 year-old pre-intermediate English language learner with no previous experience in language learning (E24PIN) and a 33 year-old intermediate Arabic language learner with no previous experience in language learning (A33IN). The factor loading for E24PIN is (0.60), and the factor loading for A33IN is (0.51). The Q sorts with the highest and lowest ranking values are provided to the participants, and they are asked to provide their comments regarding the statement.

Interviewer: A motivated teacher inspires motivated learners (14:+5).  
A33IN: I believe learners' motivation is dependent on teacher motivation. Sometimes learners study for the sake of their teachers, because they want to prove themselves to the teacher and have their teachers' confirmation.

As the interview shows, A33IN confirms Factor 4 participants' ranking value of the related item (14:+5). The reasons for such a motivational role of teachers is that some learners are looking for their teachers' confirmation by proving themselves. However, overall, the students in this factor ranked the high negative value of -5 for item No. 5, suggesting that the view of the most representative participants of Factor 4 is rather different from that of other learners of this factor.

Interviewer: Studying the language is essential as it helps me to gain the approval of my teachers (5:-5).  
A33IN: There should be a will by the learner, if there is not such a will, it would be difficult for teacher to perform. If there would be such a will, a teacher can facilitate the learning process by presenting teaching materials by different and motivating teaching methods, by encouraging the leaners, and even by talking to them, because a teacher is the source and reference of knowledge and he can be the source of motivation too.

## Discussion

In line with the aims of the study, the interplay of teacher motivation and learner motivation were explored using Q methodology. Four distinctive accounts of L2 motivations were identified and interpreted using factor arrays and qualitative interview data analysis. The four factors of the study show the salient student types in the classroom. The most representative participants of each factorial group also show the students who are typical of the established prototypes. These four factors suggested that the learners hold four different prototypical viewpoints regarding the interplay of teacher motivation and learner motivation: (a) Teachers' Role, (b) Students' Role in Normal Contexts, (c) Student-Teacher Relationship, and (d) Students' Self-Determined Motivation in Adverse Contexts.

All factors, directly or indirectly, consider an important role for the relationship between teachers and learner motivation. Factor 3 implies that a teacher's close and friendly relation with learners is highly motivating. While Factor 2 considers creating a close and friendly relationship with teachers to be an easy task if students are responsive to their teachers' motivation, Factor 4 shows that it is challenging or non-existing. In other words, Factor 2 suggests that learners' motivation is slightly tied to teacher motivation because teacher motivation is not necessarily a determinant factor of learners' motivation, and in Factor 4, even if learners have unmotivated teachers, it is possible for them to be motivated learners. Hence, both learners and teachers need to enhance their understanding of teacher-learner relationships because such relationships are influential to learners' motivation. Factor 2 also confirms that learning is the learners' responsibility and teachers are just considered to be as mediators. This is different from Factor 1, in which teacher motivation is considered so significant that the learners believe a competent and motivated teacher can motivate an unmotivated learner. The role of teacher motivation in learners' motivation is rather indirect since teachers stimulate learners to find self-motivational strategies, therefore confirming the significant role that Factor 2 attributes to learners.

Unlike the learners in Factor 2 and 4, who are looking for self-motivational strategies, the students in Factor 1 are motivated by external sources (such as their teachers), since they seek motivation from *others* rather than the *self*. Consensus statements that imply the degree of agreement or disagreement by the participants of the study showed that language learners, regardless of the language they learn and their level of L2 motivation, believe that they are capable of establishing a positive relationship with their teachers. This was more evident for those students who considered a greater role for teachers in learners' motivation than those who considered a greater role for learners. Students' role in motivation is also important with slightly varying degrees in almost all factors, more evident in Factors 2, 3, and 4 rather than in 1. In Factors 2 and 4, there is a

focus on the learners' independence and their self-determined motivation in two different contexts while in Factor 3, mutual role engagement is emphasized. Hence, it can be seen that motivation is a rather subjectively loaded concept and different learners have different viewpoints regarding it.

The concept of learners' interest has been considered as one of the influential motivational factors in a language class (e.g. Karabenick and Noda 2004; Schunk et al. 2012). Therefore, based on the findings, it can be claimed that language teachers and learners are likely to show positive attitudes towards each other. Having a positive attitude is important for both teachers and learners as it affects students' engagement with the learning process and can lead to motivated learners. Establishing a positive attitude for learners is one of the key elements of the motivational teaching practice framework (Dörnyei 2001), which can be traced in most steps of learners' motivational processes. Such a positive attitude creates a good rapport between teachers and students, and creates a pleasant and supportive atmosphere in a language classroom. Previous studies in different EFL contexts also show the value of establishing a positive attitude among learners (such as positive attitudes towards teachers) because students with positive attitudes are likely to use language learning strategies more frequently than those with negative attitudes (e.g. Schunk et al. 2012).

A number of research studies in educational research have confirmed that motivated teachers lead to motivated learners and vice versa (e.g. Atkinson 2000; Radel et al. 2010; Roth et al. 2007). The results are further supported by self-determination theories, which argue that just as teachers influence learners' motivation, learners also influence teachers' motivation (Deci et al. 1997). The findings of the current study also show the reciprocal effect of teacher-learner motivation. Such a finding confirms 'co-adaptation', which is a key feature of a dynamic system (Larsen-Freeman 2012). Co-adaptation has been defined as a change in a connected system, where change in one system produces change in the other. Thus, if we consider teacher's motivational behavior as a system and learners' feedback to that behavior as another system, any changes in teachers' motivational behavior affect learners' motivation and vice versa. Using social categorization to investigate learners' viewpoints towards teacher-learner L2 motivational patterns, the four factors of the study confirmed the existence of different prototypical viewpoints. The result of the study, overall, confirmed the influential role of teacher motivation on learner motivation, although this effect seems to be more influential for some learners than others.

## Conclusion

The aim of the current study was to investigate the interplay of teacher motivation and learner motivation. In so doing, the Q

method, as a novel research method in L2 motivation research, was used in the data collection, data analysis, and data interpretation processes. The results of this study suggested that different learner prototypes are motivated differently, so teachers should look for alternative motivational strategies that consider motivation in the context of learning. The study confirmed the value of the Q method in studying L2 learners' motivation. Overall, the results of qualitative analysis of interviews with the most representative participants of factorial groups were consistent with the results of Q analysis confirming that Q methodology is robust in eliciting participants' subjective viewpoints. The study, furthermore, confirmed the existence of general motivational patterns among all of the participants in the study and specific motivational patterns related to each of the participant prototypes. Such an understanding has a number of pedagogical implications. The implication of this study for language teachers and material developers is awareness of the existence of different learner prototypes in the process of language learning. Knowing that each prototype learner is motivated differently, teachers and materials developers can design appropriate tasks and use appropriate motivational strategies during the language teaching process. For instance, those learners who are more learner-oriented can be motivated by learner-based instruction, such as cooperative learning and group learning, while those who are teacher-oriented can be motivated by the direct teacher involvement.

The task of Q sorting challenged the participants to provide their subjective viewpoints regarding the interplay of teacher motivation and learner motivation. The regular instruments used in R methodologies are unlikely to provide a comprehensive manifestation of participant's viewpoints. Accordingly, the researchers interested in Q methodology should take care to explain all the steps to the participants carefully. Watts and Stenner (2005) stated that misunderstandings of the Q methodology are exceedingly common in both the Q sorting procedure and Q pattern analysis. Furthermore, developing a good Q-set requires great persistence and skill; it is both a challenging and time-consuming task. A good Q set may even take several months to be developed; therefore, a Q-method researcher should consider these limitations while constructing the Q set. None of the authors of this paper considers Q-methodology as the best method for studying a complex and dynamic L2 motivation. However, it does represent a possible substitute for R methodology in L2 motivation research since it can provide a relatively thorough understanding of the participants' subjectivity. Q methodology has capabilities that can be used for researching complex dynamic systems in applied linguistics, in particular, in studies that aim to investigate participants' subjective viewpoints about a certain issue, such as attitudes, emotions, beliefs, perceptions, preferences, personality, learning style, and strategy use.

However, the empirical investigation of L2 motivation from a complex dynamic system perspective is in the early stages of development, and it may be too soon to expect immediate and conclusive pedagogical implications.

Participants' engagement with the Q sorting procedure is a key factor in conducting a Q methodology study, and it seems that this is more evident in by-hand sorting procedure than in online sorting via an online tool such as FlashQ. Further studies could compare the two types of data sorting procedures to investigate the level of participants' engagement in each method. Using Retrodictive Qualitative Molding (RQM) (Dörnyei 2014) in L2 motivation research is another arena for further studies. RQM is a departure from the most common research paradigms in the social sciences as it investigates variables in isolation and a linear manner (such as correlation analysis or structural equation modeling) rather than in an interconnected system (Dörnyei 2014). Qualitative researchers can benefit from the features of Q methodology to investigate the new complex dynamic phenomena in applied linguistics. Q methodology has capabilities that can be used in researching complex dynamic systems in applied linguistics for topics that aim to investigate participants' subjective viewpoints about particular issues, such as attitudes, emotions, thinking skills, beliefs, perceptions, preferences, personality, learning style, and strategy use.

## Compliance with Ethical Standards

**Disclosure of Potential Conflicts of Interest** The authors declare that they have no conflict of interest.

**Research Involving Human Participants and/or Animals** Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

**Informed Consent** "Informed consent was obtained from all individual participants included in the Study.

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