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Chinese interpreting students' learning motivation and performance in the Covid-19 context: a quasi-experimental study

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Abstract

Covid-19 has brought about profound changes and challenges to the interpreting profession, and this study aims to explore Chinese students' learning motivation and performance in the new context. Motivation is a main determinant of performance. Referring to the studies on intrinsic motivation, ideal self, and Maslow's needs theory as well as the characteristics of interpreting, we have summarized six motivation dimensions, including safety, social, esteem, cognitive, actualization, and transcendence ones. A questionnaire was designed to address the six motivation dimensions. Experimental teaching was carried out on two undergraduate classes. The Covid-19 context was incorporated into the experimental group but not the control group. Three parallel tests were organized, and students completed the motivation questionnaire after each test. Data analyses showed that the experimental group's actualization and transcendence motivation dimensions increased significantly after the experimental teaching, but not the control group, and the experimental group also had a significantly higher score in the final test. It implied that the actualization and transcendence dimensions were closely related to students' performance.

Keywords Context · Covid-19 · Interpreting · Motivation · Performance

Introduction

Motivation has been described in a wide range of terms, such as instincts, drives, and needs (Anjomshoa and Sadighi 2015, p. 136). It is said that there are more than one hundred statements referring to motivation (Gardner 2005, p. 3). Therefore, a

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simple definition is not possible (Gardner 2005, p. 3). However, the basic tenet is that motivation is the energizing force for an individual's choice and action (Woodrow 2017, p. 236). It refers to the reasons underlying one's behavior (Lai 2011, p. 2). As part of "the highest level of performance control" (Timarová and Salaets 2011, p. 34), motivation is proved by empirical evidence to be a major determinant of success (Uysal et al. 2017, p. 211), "a fundamental aspect" of learning (Nilsen 2009, p. 546), and "a key factor" in second language learning (Anjomshoa and Sadighi 2015, p. 135). In the case of interpreting training, motivation is recognized as one of the "desirable traits in students," yet it is rarely systematically tested or researched (Timarová and Salaets 2011, p. 32). The outbreak of Covid-19 made the interpreting profession more competitive and challenging (See Wang et al. 2020). On the one hand, a large proportion of on-site conferences and activities were canceled, and interpreters lost opportunities to work. On the other hand, it transformed the interpreting profession and stimulated new development, such as remote interpreting. This new context might have influenced students' motivation to learn interpreting. A survey showed that the majority of Chinese college students were supported by their parents (Zhang 2019; Zhu and Reeves 2015), and they did not have financial worries in the Covid-19 context. Therefore, we carried out this research to incorporate the Covid-19 context into the class and explore its impact on Chinese interpreting students' learning motivation and performance.

Literature review

Learning motivation is "an intricate, multifaceted construct" (Anjomshoa and Sadighi 2015, p. 130). It is abstract and not directly observable, and there are no objective measures of motivation, so exploration of motivation is "inherently subjective" (Dörnyei and Ushioda 2011, p. 197). Furthermore, motivation is dynamic, changing with personal progress or environmental factors (Dörnyei and Ushioda 2011, p. 198). As a result, there are various models of and perspectives on learning motivation (Dörnyei and Ushioda 2011, pp. 4–8). This research investigates college students' motivation to learn interpreting which is closely related to language training, so we will review the key concepts in this area.

Instrumental and integrative motivation

Within the field of language learning, a typical model is the division between integrative and instrumental motivation (Dörnyei and Ushioda 2011, p. 41). The former emphasizes a pragmatic reason for learning a language, such as getting a job, while the latter refers to a desire to be assimilated into the language group (Woodrow 2017, p. 237). Some researchers hold that integrative motivation is essential for language learning (Anjomshoa and Sadighi 2015, p. 127). The motivation to learn interpreting can be instrumental, such as earning money, or integrative, namely, having a successful career as an interpreter. It needs to be noted that both types of motivation are concerned with context, with the instrumental one aiming to gain interests

in the social context and the integrative one aiming to merge into the target context. Meanwhile, teachers' instruction can influence and cause changes in students' motivation. The two orientations are not mutually exclusive, and students may have both motivations (Anjomshoa and Sadighi 2015, p. 127). Although the validity of the theory, particularly the relevance of integrativeness, has been questioned (Dörnyei 2009, p. 24), the two orientations actually reveal different sources of motivation, with the instrumental motivation more extrinsic and the integrative motivation more intrinsic.

Intrinsic and extrinsic motivation

Motivation can be examined from what is more inside or outside a person (Anjomshoa and Sadighi 2015, p. 126). The most basic distinction is between intrinsic motivation, namely, doing something because it is enjoyable, and extrinsic motivation, namely, doing something because it leads to a particular outcome (Ryan and Deci 2000, p. 55). Students may study out of interest, which is intrinsic, or study for reward or recognition, which is extrinsic (Pintrich et al. 1991, pp. 9–10; Guthrie et al. 2000). Intrinsic motivation is animated by personal pleasure (Lai 2011, p. 2) and directly related to one's innate psychological needs (Uysal et al. 2017, p. 212). Extrinsic motivation is connected with awards, which may be material, such as cups and medals, or non-material, such as appreciation and praise (Uysal et al. 2017, p. 212). The motivation to learn interpreting can be intrinsic, out of one's interest in interpreting, or extrinsic, for the possible monetary or other rewards.

Intrinsic and extrinsic motivations play different roles in one's learning. Intrinsic motivation is superior as people are motivated to achieve "self-actualization" (Anjomshoa and Sadighi 2015, pp. 126–127). Intrinsic motivation results in high-quality learning and creativity, while extrinsic motivation has been regarded as "a pale and impoverished form of motivation" (Ryan and Deci 2000, p. 55). Empirical research also shows that intrinsic motivation directly affects one's learning behavior and achievement, while extrinsic motivation has no direct effect (Tokan and Imakulata 2019, pp. 3–4). Actually, there is persuasive evidence that extrinsic rewards can undermine intrinsic motivation (Deci and Ryan 1985, p. 51). Therefore, educators consider intrinsic motivation to be more desirable than extrinsic motivation (Lai 2011, p. 5). Still, the two kinds of motivation can overlap because one may be motivated from both inside and outside sources (Anjomshoa and Sadighi 2015, p. 127). Another point worthy of mention is that both intrinsic and extrinsic motivations may vary over situation and time (Anjomshoa and Sadighi 2015, p. 127; Nilsen 2009, p. 547; Timarová and Salaets 2011, p. 34). In other words, context has a bearing on learning motivation. Covid-19 brought about huge changes to the interpreting sector. Interpreting, which used to be an on-site service, was greatly hindered by Covid-19. A survey on language service in China mainland showed that nearly 80% of the language service companies were concerned about decline in business and 64.6% of them considered the "drop or loss of existing translation business" as the major challenge (Wang et al. 2020). Incorporating such context into teaching may evoke changes in students' learning motivation, which merits exploring.

Perception of self

The internal and external perspectives on motivation are unified in one's perception of self. In the field of language learning, the motivational self-system consists of three components: Ideal Self refers to what one would like to become; Ought-to Self concerns the attributes one believes one ought to possess; and Learning Experience concerns the immediate learning environment and experience (Dörnyei and Ushioda 2011, p. 86). Those possible selves perform a guiding function (Dörnyei 2009:13). Particularly, the ideal self is the "core mechanism for self-regulation" (Boyatzis and Akrivou 2006, p. 625) and a powerful motivator to learn (Dörnyei and Ushioda 2011, p. 86). The ideal self is related to intrinsic motivation (Lai 2013, p. 98), while the ought-to self is more related to extrinsic motivation (Csizér and Kormos 2009, p. 100). Learning experience is concerned with both one's personal experience and the instructional context. Interpreting learning involves the three motivational selves. The ideal self may concern how one visualizes his or her interpreting performance. The ought-to self involves what one should do to achieve the ideal self. The learning experience also impacts students' self-perception and learning motivation. One thing to note is that students' perception of themselves may change with time (Csizér and Kormos 2009, p. 110). Accordingly, the Covid-19 context could have an impact on interpreting students' perception of themselves. As Covid-19 was a global crisis, emergent meetings were often organized. Such situations were imbued with a nervous and solemn atmosphere, and interpreters had to work under unusual circumstances. For example, we learned from an interpreter working for a WHO conference on Covid-19 held in China that simultaneous interpreters did not even have a sound-proof booth, which was challenging for them with all the interference from the conference venue. Therefore, giving emphasis to such context in the classroom might have an impact on interpreting students' self-perception and learning motivation.

Theoretical framework

An integrative perspective

A striking feature of motivation theories is their lack of comprehensiveness (Dörnyei and Ushioda 2011, p. 8). No existing motivation theory to date has managed to offer "a comprehensive and integrative account" of the main motive types (Dörnyei and Ushioda 2011, p. 4). Despite such lack of comprehensiveness, the primary concerns include the internal drive of needs, such as integrative and intrinsic motivation, the external incentive, such as instrumental and extrinsic motivation, and the connection between the two via perception, such as the ideal self. It is suggested that motivation can only be understood from an integrative perspective (Chung 1968, p. 11), as individuals are integrated and motivation is seldom isolable (Maslow 1987, p. 20). We agree that an integrative perspective is appropriate because motivation is both inherent and influenced by context and by following the integrative approach we will explore both one's internal drives and the external context.

First, internal drives such as integrative motivation, intrinsic motivation, and ideal self determine one's learning behavior and performance (Ryan and Deci 2000, p. 55; Tokan and Imakulata 2019, pp. 3–4; Lai 2011, p. 5). Students' intrinsic motivation and ideal self are based on their needs, which form the inner drive for them to behave (Uysal et al. 2017, p. 211). Maslow's theory has been proved effective (Uysal et al. 2017, p. 211; Stephens 2000, p. 1), led to many subsequent studies and attempts to explore motivation (Anjomshoa and Sadighi 2015, p. 129), and lied at "the forefront of the most important studies on motivation" (Uysal et al. 2017). One drawback of Maslow's theory is that lower needs are supposed to be met before one pursues further accomplishment (Anjomshoa and Sadighi 2015, p. 129). As mentioned in Introduction, the majority of Chinese college students are supported by their parents and have their lower needs ensured, so it is appropriate to apply Maslow's theory in this study. Second, motivation is dynamic and can be influenced by context (Csizér and Kormos 2009, p. 110; Dörnyei and Ushioda 2011, p. 86; Nilsen 2009, p. 547; Timarová and Salaets 2011, p. 34). The environmental dimensions, such as social and cultural factors and the instructional context, have an impact on one's learning motivation (Dörnyei and Ushioda 2011, pp. 25–26). In other words, one's behavior is controlled by both internal and external factors (Yahaya 2013, p. 1). For this reason, aside from exploring students' inherent needs, we also take into account context.

Intrinsic motivation of learning interpreting

The needs outlined in Maslow's theory partly reveal the unity across cultures (Maslow 1987, p. 28), but there are cultural differences (Geren 2011, p. 3). We hold that there are also variations across professions. Maslow's theory summarizes four major categories of needs, namely, conative needs (which cover physiological needs, safety, social/love, esteem, and actualization needs), cognitive needs, esthetic needs, and transcendence needs (Maslow 1987, pp. 15–22; Maslow 1993, p. 31; Muchinsky 2003, p. 375). In this study, we do not consider physiological needs because the basic daily necessities like food and water are not a concern for the majority of Chinese college students. In addition, we do not consider esthetic needs specifically, which is connected with order, symmetry, and structure (Maslow 1987, pp. 25–26), because, while students' ideal self may cover esthetic aspects, they are not directly related to the practice or learning of interpreting.

As far as Chinese interpreting students' motivation is concerned, we have summarized the following six dimensions. Since students are not working as interpreters, the motivation dimensions are concerned with their future or ideal self (Dörnyei and Ushioda 2011, p. 86; Przybylski et al. 2012, p. 69). As shown in Fig. 1, first, the safety dimension refers to the desire for a sense of security, which can be assured by the income they will get as interpreters. Second, the social dimension is related to students' social/love needs. Being interpreters in future entails meeting people of various fields and forming their own circle of friends and hence a sense of belonging. Third, the esteem dimension is associated with esteem needs. Interpreting students can be motivated to learn
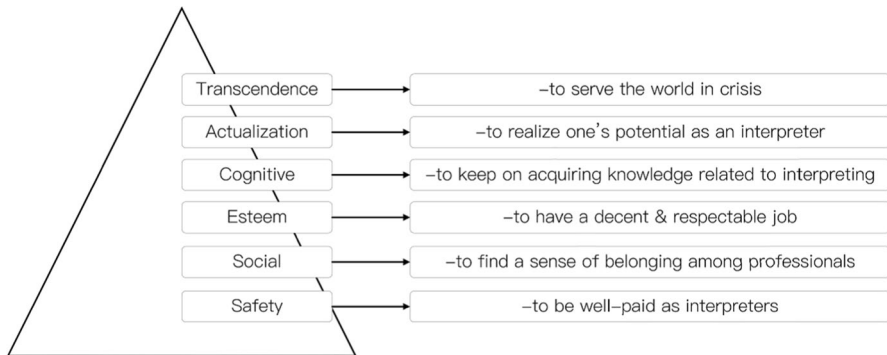
Fig. 1 Motivation dimensions

in order to live a respectable life. Fourth, the cognitive dimension is related to the desire to learn and understand. Interpreting requires constant learning about languages, cultures, and professional knowledge. Fifth, the actualization dimension is related to the needs to realize one's potential. Interpreting is challenging, requiring multitasking and quick response. Interpreting students are supposed to give full play to their potential. Sixth, the transcendence dimension refers to one's consideration of society other than oneself, which is the highest levels of personal development (Maslow 1993, p. 31). The six dimensions roughly show a hierarchical order. People may live at various levels in the motivation hierarchy (Maslow 1993, p. 229). Interpreting students may also be driven by various dimensions of motivation.

Research questions

In light of the above review of learning motivation and the theoretical framework for interpreting students' motivation, this study aims to explore the following questions.

First, it intends to investigate whether Covid-19 has an impact on Chinese interpreting students' learning motivation. We hypothesize that incorporating the Covid-19 context into the class will bring about changes in students' motivation, as various studies have confirmed that context influences motivation (Csizér and Kormos 2009, p. 110; Dörnyei and Ushioda 2011, p. 86; Nilsen 2009, p. 547; Timarová and Salaets 2011, p. 34).

Second, this study intends to find out whether the enhancement of students' learning motivation can improve their performance. We hypothesize that strengthening interpreting students' motivation will have a positive effect on their performance, as various studies have shown a positive correlation between motivation and performance (Hunter and Schmidt 1996; Uysal et al. 2017, p. 212).

Research methods

To answer the above research questions, first, this study designs a questionnaire to address students' learning motivation, which is supplemented by semi-structured interviews. Second, this study carries out experimental teaching in two classes, randomly assigned to be the experimental group and the control group, with the Covid-19 context incorporated into the experimental group. Students' performance is checked via three parallel tests, and their motivation is examined via the questionnaire.

A questionnaire to assess learning motivation

Needs and motivations are unobservable and not directly testable due to their introspective nature (Chung 1968, pp. 18–19; Timarová and Salaets 2011, p. 34). We chose to use questionnaire to assess students' motivation in this research. While there are existent questionnaires based on Maslow's needs hierarchy (Lester et al. 1983; Strong and Fiebert 1985), the items therein are general about one's life and not highly pertinent to interpreting learning. For example, they address social/love needs via such items as "sharing my joys and sorrows with someone" (Strong and Fiebert 1985, p. 6) or "I feel rootless" (Lester et al. 1983, p. 83). Although the feelings of joy and sorrow or rootlessness are important part of one's life, they are not directly related to one's learning behavior. Therefore, we decided to design a new questionnaire, taking into account the specific characteristics of interpreting learning. We developed the questionnaire items by referring to the motivation dimensions summarized in Sect. 2.2 and reflecting on their relations to the interpreting profession. We prepared statements for each motivation dimension, and students were asked to rate those statements on a five-point Likert scale. The safety dimension is addressed by such items as "I'm interested in interpreting because it pays well," as a good salary can ensure a stable life and hence a sense of security. The social/love dimension is addressed by such items as "I'm interested in interpreting because I can make a lot of friends," as enlarging one's circle of friends via the interpreting profession can enhance one's sense of belonging. The esteem dimension is addressed by such items as "I'm interested in interpreting because it is a respectable profession," as having a decent job can earn others' respect. The cognitive dimension is addressed by such items as "I'm interested in interpreting because it enlarges my scope of knowledge," as learning new knowledge is in line with one's cognitive needs. The actualization dimension is addressed by such items as "I'm interested in interpreting because I'm gifted to be a language professional," as one can give their gift or talent full play by engaging in the interpreting practice. The transcendence dimension is addressed by such items as "I'm interested in interpreting because it can make a difference to the world," as serving the world is beyond one's own interests and is concerned with their transcendence needs.

The questionnaire included 21 items. Three items were prepared to address each dimension (Dörnyei 2010, p. 25), but for the cognitive dimension we designed six

items, because this study focused on learning motivation and the cognitive motivation was core to students' learning behavior. In order to test the questionnaire's validity and reliability, as a pilot study, we gave it out to 382 respondents before the experiment, who were college students majoring in English in China mainland and had all taken the *Interpreting* course. We first carried out the Kaiser–Meyer–Olkin (KMO) Test, and the result was 0.904 ($p < 0.01$), showing that the 21 items were highly correlated and suitable for factor analysis. Then, we did an exploratory factor analysis using varimax rotation and identified six factors, corresponding to the six motivation dimensions. As shown in Table 1, the loadings, or the correlations to a factor, were all above 0.60 except for Item 17, which was 0.46, very close to the acceptance level of 0.50 for newly developed items (Maat et al. 2015). Therefore, the questionnaire could be considered valid for this study.

Finally, we measured the Cronbach's alpha coefficient of each factor or the extent to which it provided consistent results in repeated use, in order to test the questionnaire's reliability (Mellinger and Hanson 2016, p. 28).

As shown in Table 2, the alpha coefficients for the six motivation dimensions were all above 0.70, and the questionnaire showed relatively high internal consistency and was reliable.

It is suggested that at least three months' time difference is needed between test and retest using questionnaires so that the participants would not remember their answers (Saldanha and O'Brien 2013, p. 160). However, changes in motivation might happen

Table 1 Loadings of questionnaire items

Dimension	1	2	3	4	5	6
Item 15	0.81					
Item 14	0.80					
Item 13	0.68					
Item 11	0.66					
Item 12	0.62					
Item 17	0.46					
Item 5		0.80				
Item 6		0.72				
Item 4		0.70				
Item 9			0.81			
Item 8			0.78			
Item 7			0.73			
Item 10				0.62		
Item 16				0.62		
Item 18				0.57		
Item 20					0.79	
Item 19					0.73	
Item 21					0.68	
Item 2						0.81
Item 3						0.81
Item 1						0.62

Table 2 Alpha coefficients

Dimension	Items	Alpha coefficient
Safety	1, 2, and 3	0.75
Social	4, 5, and 6	0.82
Esteem	7, 8, and 9	0.80
Cognitive	11, 12, 13, 14, 15, and 17	0.86
Actualization	10, 16, and 18	0.70
Transcendence	19, 20, and 21	0.75

during the experimental teaching, which was the case with our study. We organized a round of interviews in the 8th week. Twelve students, six from the experimental group and six from the control group were interviewed. We referred to students' scores of a pre-test taken before the experimental teaching and selected students with high, medium, and low scores from each group. The teacher who taught the two classes interviewed the students as part of the mid-semester activities to find out students' needs and answer their inquiries. She recorded the interviews with the students' consent. To avoid any social desirability bias to give answers that are socially and culturally more acceptable (Chung and Monroe 2003, p. 292), she emphasized that the purpose of the interview was to learn about their truthful attitude and it would not in any way affect their exam scores. She also explained to them that the audio recordings would be anonymized and their privacy would be protected. In the semi-structured interviews, the teacher asked the students the following questions: whether they liked the style of training; whether they had interest in practicing interpreting; whether they had made any progress and whether they had any difficulties; whether their motivation to learn interpreting had changed; and whether they believed their perception of interpreting and their motivation to learn would continue to change. We learned from the interviews that some students' motivation to learn interpreting went through dramatic changes, mostly in a positive direction. The students' interest in interpreting apparently increased as they learned more about the skills of interpreting and their future career as an interpreter. Their answers to the last question were mostly affirmative, which meant that they believed their understanding of and motivation to learn interpreting were in the process of changing. Considering such rapid and constant changes, we asked students to fill out the questionnaire every two months in an effort to capture the possible changes in their learning motivation. It was workable because students might remember the questionnaire items, but it would be less likely for them to remember the specific ratings. Therefore, when they refilled the questionnaire, they were just reassessing their mentality.

Experiment design

Teaching

The experiment was carried out on two undergraduate classes majoring in translation and interpreting, who were taking the required course *Basic Interpreting*.

The two classes were randomly assigned to be an experimental group with 31 students (26 females and 5 males) and a control group with 27 students (20 females and 7 males). The students were aged between 20 and 22 (mean: 19.62, standard deviation: 0.67). They were all native Chinese speakers and proficient in English. We inquired the Department Office about their socioeconomic status and were told that none of the students applied to the Department for financial difficulties allowance (the Department provided a monthly allowance to students in need). Therefore, we believe that they were self-sufficient and did not have financial worries.

One of the researchers of this study was teaching the course, and it was convenient to implement the experimental teaching and guarantee that both classes received the same training except for the incorporation of the Covid-19 context. The experimental teaching lasted for 16 weeks from March 2nd, 2020 to June 19th, 2020, which was a period when China had gone through the climax of the pandemic and was gradually recovering. It was appropriate for this research because interpreting students had not fully understood the consequences of the pandemic and were still taking in the situation. The two groups had the same class hours and syllabus, which covered training in terms of listening, memory, note taking, interpreting skills, etc. The only variation was that the teacher incorporated the Covid-19 context into the experimental group as follows. First, the social impact of Covid-19 on the interpreting profession was elaborated to students in order to stimulate the safety, cognitive, and actualization dimensions of motivation. The teacher emphasized the decline in business and loss of job opportunities under the new circumstances (Wang et al. 2020). She asked students to write reflective journals in order to deepen their understanding of the social impact of Covid-19. In such a new context, they had to be competent interpreters to survive. Second, the communicative occasions with characteristics of Covid-19 were incorporated into the experimental instruction to stimulate the esteem, social, and transcendence dimensions of motivation. She organized mock press conferences, meetings, and interviews so that the students could experience the nervous and solemn atmosphere to work at the time of crisis and understand the significance of interpreting better.

Exams

Three parallel exams were organized in the 1st week, 8th week, and 16th week, respectively. The test materials were selected from those for CATTI Level 3 (China Accreditation Test for Translators and Interpreters), so the level of difficulty was consistent. The test questions were new to both groups and not related to Covid-19. Two professional interpreting teachers graded the test recordings. The students were numbered and their test recordings were randomly listed for the two teachers. The teachers followed the same standards of grading which included accuracy in content (40%), grammar (20%), coherence and cohesion (20%), pronunciation and tone (10%), and time control (10%), the total score being 100.

Results

We compared each student's three questionnaire scores. Some students gave a really low score for an item in the first questionnaire, then an extremely high score for the same item in the second one, and finally a very low score in the third one. Moderate variations in students' motivation were normal and acceptable, but, with such sharp changes, we suspected that they might have paid little attention when completing the questionnaires. Since we intended to learn about students' truthful mentality and motivation, we deleted those extreme or abnormal motivation scores.

We carried out Shapiro–Wilk normality tests on the data before carrying out statistical analysis. (EX: exam; QS: questionnaire score).

As shown in Table 3, the p values of the experimental group's third QS and the control group's first and third QS were below 0.05, and the data were not normally distributed. Therefore, we carried out non-parametric statistical tests when those data were involved.

Changes of motivation

First, we studied the mean value of the three motivation scores. As shown in Table 4, both groups' motivation grew. The difference in the standard deviation (SD) of the two groups was striking, with that of the experimental group lower than that of the control group. Such difference was consistent and revealed a distinct pattern, which was in line with the students' performance in the class. The experimental group was relatively quiet and reserved, while the control group was perceptibly more active and lively and showed more diversity, which might have contributed to the different SDs.

We did a Wilcoxon rank-sum test on the first QS, and there was no significant difference between the two groups ($z = 0.230$, $p = 0.234$), and they had comparable motivation levels before the experimental teaching. Then, we did independent

Table 3 Normality of data

Variable	Observations	W	V	z	Prob > z
Experimental 1-EX	30	0.97	0.98	− 0.04	0.516
Experimental 1-QS	30	0.97	1.16	0.30	0.381
Experimental 2-EX	28	0.96	1.34	0.60	0.275
Experimental 2-QS	30	0.95	1.80	1.22	0.111
Experimental 3-EX	30	0.98	0.89	− 0.25	0.597
Experimental 3-QS	30	0.78	7.21	4.08	0.000*
Control 1-EX	26	0.96	1.36	0.62	0.267
Control 1-QS	26	0.87	3.97	2.83	0.002*
Control 2-EX	26	0.97	0.89	− 0.24	0.596
Control 2-QS	26	0.90	3.00	2.25	0.012
Control 3-EX	26	0.95	1.33	0.58	0.281
Control 3-QS	26	0.75	7.01	3.99	0.000*

Table 4 Mean motivation scores

Group	M	SD
Experimental 1	72.548	8.679
Experimental 2	73.161	8.367
Experimental 3	75.355	9.908
Control 1	73.629	14.396
Control 2	75.185	13.379
Control 3	78.259	12.775

samples t test on the second QS, and there was no significant difference either ($t=-0.742$, $p=0.461$). We did a Wilcoxon rank-sum test on the third QS and found that the difference between the two groups was significant on the 0.10 significance level ($z=-1.811$, $p=0.070$). The experimental group scored lower than the control group and such difference was worth exploring.

We also compared the two groups' first and third QS via Wilcoxon-matched pairs signed-rank test. The result was statistically significant for the experimental group ($z=-2.265$, $p=0.023$) and the control group ($z=-2.034$, $p=0.042$). For both groups, the motivation levels grew significantly. We further explored both groups' data by carrying out Wilcoxon-matched pairs signed-rank tests on each motivation dimension in their first and third QS.

As shown in Table 5, the two groups' motivation dimensions changed in different patterns. The safety dimension grew significantly in both the experimental group ($z=-4.784$, $p=0.000$) and the control group ($z=-2.837$, $p=0.004$). Apart from the safety dimension, the rest of the motivation dimensions did not change significantly for the control group, but the experimental group showed

Table 5 Comparison of motivation dimensions in first and third QS

Variables	Sum ranks		Adjusted variance	z	p
	Positive	Negative			
Experimental-safety	0	465	2361.63	− 4.784	0.000*
Experimental-social	250	179	2297.25	0.741	0.468
Experimental-esteem	130	314	2327.63	− 1.907	0.056
Experimental-Actualization	120	342	2338.38	− 2.295	0.021*
Experimental-Cognitive	465	0	2351.38	4.795	0.000*
Experimental-transcendence	1	464	2346.00	− 4.780	0.000*
Control-Safety	48	267	1489.50	− 2.837	0.004*
Control-Social	128.5	167.5	1445.13	− 0.513	0.608
Control-Esteem	100	236	1508.13	− 1.751	0.081
Control-actualization	101	235	1523.00	0.0860	0.086
Control-cognitive	105.5	235.5	1533.38	− 1.660	0.097
Control-transcendence	92.5	213.5	1462.50	− 1.582	0.118

Significance level is set at 0.05. * is used when p value is lower than 0.05

Table 6 Mean test scores

Group	Mean	SD
Experimental 1	63.479	9.502
Experimental 2	70.300	8.827
Experimental 3	79.217	5.933
Control 1	64.542	12.706
Control 2	73.741	7.593
Control 3	75.712	7.690

Table 7 *T* test on the third exam

Experimental		Control		DF	*t*	*p*
M	SD	M	SD			
79.217	5.933	75.712	7.690	54	1.923*	0.030*

more intense changes. For the experimental group, the actualization dimension grew significantly ($z = -2.295$, $p = 0.021$) and so did the transcendence dimension ($z = -4.780$, $p = 0.000$). The cognitive dimension also demonstrated significant change, but it decreased ($z = 4.795$, $p = 0.000$).

Analysis of exam performance

The exam data were normally distributed as shown in Table 3. We studied the mean value of the exam scores. As shown in Table 6, both groups' performance improved with time passing by.

We carried out an independent samples *t* test on the first exam, and there was no significant difference between the two groups ($t = -0.360$, $p = 0.720$) before the experiment. Then we did independent samples *t* tests on the two groups' second and third exam scores. There was no significant difference in the second one either ($t = -1.424$, $p = 0.160$), but there was significant difference in the third one. (DF = degree of freedom).

As shown in Table 7, the score of the experimental group (M = 79.217, SD = 5.933) was higher than that of the control group (M = 75.712, SD = 7.690). Such difference was statistically significant ($t = 1.923$, $p = 0.030$).

Finally, we did paired samples *t* tests on the two groups' first and third exam scores to figure out whether their progress was significant.

As shown in Table 8, for the experimental group, the third exam score (M = 79.217, SD = 5.933) was higher than the first (M = 63.479, SD = 9.502). Such difference was statistically significant ($t = -7.695$, $p = 0.000$). For the control group, the third score (M = 75.712, SD = 7.690) was also higher than the

Table 8 *T* test on first and third exams

	EX 1		EX 3		DF	*t*	*p*
	M	SD	M	SD			
Experimental	63.479	9.502	79.217	5.933	58	− 7.695*	0.000*
Control	64.542	12.706	75.712	7.690	51	− 3.853*	0.000*

Significance level is set at 0.05. * is used when *p* value is lower than 0.05

first (M = 64.542, SD = 12.706). Such difference was statistically significant ($t = -3.853$, $p = 0.000$). In other words, both groups made significant progress.

Discussion and implications

Based on the statistics presented in Sect. 5, we have drawn the following conclusions. First, social context has a significant impact on students' learning motivation. The safety dimension was enhanced in both groups, which mirrored the impact of Covid-19 and was in keeping with what had been suggested about motivation varying in different situations (Csizér and Kormos 2009, p. 110; Dörnyei and Ushioda 2011, p. 86; Nilsen 2009, p. 547; Timarová and Salaets 2011, p. 34). The outbreak of Covid-19 caused extensive loss of job opportunities in the interpreting field and economic slowdown (Wang et al. 2020). The students lived in such a context and were exposed to such crisis and their motivation to study hard and have a secure life in future was enhanced. Such facts about the graveness of the situation were discussed in detail for the experimental group, and their safety dimension ($z = -4.784$, $p = 0.000$) grew more acutely than the control group ($z = -2.837$, $p = 0.004$). In addition, the experimental group's actualization and transcendence dimension grew significantly, but it did not happen with the control group. As the interpreting profession was getting more and more challenging in the new context (Wang et al. 2020), interpreters had to be well prepared to face the new context. More discussions in this regard were organized for the experimental group. Accordingly, the experimental group's actualization dimension was significantly strengthened, which was related to the safety dimension to a degree, because they would need to give full play to their potential in order to obtain a secure position. Furthermore, the profession interpreting played an important role in serving the world in crisis, which was emphasized to the experimental group, and their transcendence dimension grew significantly. The transcendence dimension is closely linked to Chinese values. Chinese share a collective culture and value social relations (Geren 2011, p. 3). The Confucian system of ethics and values, which has dominated Chinese society since ancient times, lays emphasis on social responsibility (Danvers 2006, p. 280). Accordingly, Chinese are expected to consider the society rather than their own benefits, which is in line with what is proposed by Maslow (1993) about transcendence. This aspect becomes more prominent in the Covid-19 or other critical context.

Second, the relationship between learning motivation and performance is not that straightforward. Motivation is an intricate construct (Anjomshoa and Sadighi 2015, p. 130), and different motivation dimensions might play different roles in influencing one's performance. According to the statistics of Sect. 5, the exam scores did not correspond to the motivation scores, as the control group had a higher score in the third QS but a significantly lower score in the third exam. This point contradicted with those studies supporting a positive correlation between motivation and performance (Hunter and Schmidt 1996; Lai 2011, p. 5; Uysal et al. 2017). However, it did not mean that motivation was negatively related to performance, and we believe the motivation dimensions might play different roles in affecting students' performance. As discussed in Sect. 5.1, different from the control group, the experimental group showed a significant growth in the actualization and transcendence dimensions, which might have impacted students' performance more than the other dimensions. This point was in line with what had been proposed about students' intrinsic motivation determining their performance (Ryan and Deci 2000, p. 55; Tokan and Imakulata 2019, pp. 3–4; Lai 2011, p. 5). In this study, we explored intrinsic motivation with reference to interpreting students' needs and ideal self. Incorporating the Covid-19 context into the experimental group enhanced their ideal self to realize their full potential and contribute to social development particularly in times of crisis. Stimulating students' motivation in such aspects which were not directly related to their learning behavior actually facilitated their learning and performance.

Third, the cognitive dimension, which we believed to be core to students' learning behavior, may not be a determinant of their actual performance. As noted in Sect. 5.1, the experimental group's cognitive dimension decreased significantly, which sounded abnormal, as their overall motivation grew during the experimental teaching and their performance in the third exam was better than the control group. We suspected that there might be something wrong with their QS data, but we double checked the original data and there was no error. Then we further examined the audio recordings of the interviews and found a pattern. As mentioned in Sect. 5.1, the SDs of the experimental group's QS were outstanding and they were more active than the other group. In the interviews, they showed less interest in interpreting training but talked more about things outside the classroom, such as their future career as interpreters and their wish to do something important and useful. For the control group, the students asked more questions about the specific skills of interpreting, such as how to take notes faster and interpret more accurately. Compared with the control group, the experimental group demonstrated less interest in learning per se, which was in keeping with the decrease of the cognitive dimension. This implies that it may be more effective to shift the focus of interpreting teaching from the training of interpreting skills to the social context and inspire the other dimensions of students' learning motivation.

Apart from the above findings, the result of the social and esteem dimensions was contrary to our expectation. Chinese culture stresses on self-esteem (Danvers 2006, p. 280; Geren 2011, p. 3) and it is relationship oriented

(Rojas-Méndez et al. 2013). In other words, socializing with others and earning respect underlie Chinese values. Therefore, theoretically speaking, the social and esteem dimensions should have grown too. Since the result was not statistically significant, further research is needed in this regard.

Conclusion

To conclude, this study has explored the impact of Covid-19 on Chinese interpreting students' learning motivation and performance. It investigated students' intrinsic motivation with reference to their needs and future ideal self and outlined six major motivation dimensions, which could help to specify the motivation to learn interpreting and explore the roles different dimensions play in impacting students' performance. We tried to assess interpreting students' motivation quantitatively via an online questionnaire. The factor analysis showed that it was reliable and valid to address the six motivation dimensions. In the experimental teaching which involved two groups, we incorporated the Covid-19 context into the experimental group. Analyses of the two groups' motivation scores showed that the Covid-19 context had a significant impact on the safety, actualization, and transcendence dimensions of students' learning motivation. While all interpreting teaching incorporates the real-world context into the classroom, being specific about the Covid-19 context and covering its positive and negative aspects could stimulate the actualization and transcendence dimensions of students' learning motivation. Analyses of the motivation scores and exam results showed that students' actualization and transcendence dimensions, which might not be directly associated with students' learning behavior, turned out to be more effective in affecting students' performance. In addition, this study found that the cognitive dimension, which theoretically was core to students' learning, was not a major determinant of students' performance, and other dimensions such as the actualization and transcendence ones were more pivotal to students' performance. Meanwhile, this study has limitations in terms of the number of participants, the imbalance between female and male students, and the duration of experimental teaching, and the questionnaire needs to be further strengthened by specifying the attributes of interpreting students' ideal self. Therefore, further research, involving more participants, a longer teaching period and more rigorous teaching methods of incorporating real-world context into the classroom, and a revised motivation questionnaire, is needed to consolidate current findings, work out more nuanced connections between motivation dimensions and performance, and perhaps better explain the findings that are contrary to our expectation at the moment, such as the potential role of the social and esteem dimensions for Chinese students.

that their data would not be made public, but they are available from the corresponding author on reasonable request.

Declarations

Conflict of interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

References

Anjomshoa L, Sadighi F (2015) The importance of motivation in second language acquisition. Int J Stud Engl Lang Lit 3(2):126–137

Boyatzis RE, Akrivou K (2006) The ideal self as the driver of intentional change. J Manag Dev 25(7):624–642

Chung J, Monroe GS (2003) Exploring social desirability bias. J Bus Ethics 44:291–302

Chung KH (1968) Developing a comprehensive model of motivation and performance. LSU Historical Dissertations and Theses, 1384

Csizér K, Kormos J (2009) Learning experiences, selves and motivated learning behaviour: a comparative analysis of structural models for Hungarian secondary and university learners of English. In: Dörnyei Z, Ushioda E (eds) Motivation, language identity and the L2 self. Multilingual Mattters, Bristol, pp 98–117

Danvers J (2006) Picturing mind: paradox, indeterminacy and consciousness in art and poetry. Editions Rodopi BV, Amsterdam

Deci EL, Ryan RM (1985) Intrinsic motivation and self-determination in human behavior. Plenum Press, New York

Dörnyei Z (2009) The L2 motivational self system. In: Dörnyei Z, Ushioda E (eds) Motivation, language identity and the L2 self. Multilingual Mattters, Bristol, pp 9–42

Dörnyei Z (2010) Questionnaires in second language research: Construction, administration, and processing. Routledge, New York

Dörnyei Z, Ushioda E (2011) Teaching and researching motivation. Pearson Education, Harlow

Gardner RC (2005) Integrative motivation and second language acquisition. Joint plenary talk at Canadian Association of Applied Linguistics/Canadian Linguistics Association, May 30, 2005, London, Canada

Geren B (2011) Motivation: Chinese theoretical perspectives. Available at: http://www.aabri.com/manuscripts/10692.pdf. Accessed 8 Apr 2020

Guthrie JT, Wigfield A, VonSecker C (2000) Effects of integrated instruction on motivation and strategy use in reading. J Educ Psychol 92(3):331–341

Hunter JE, Schmidt FL (1996) Intelligence and job performance. Psychol Public Policy Law 2:447–472

Lai HYT (2013) The motivation of learners of english as a foreign language revisited. Int Educ Stud 6(10):90–101

Lai ER (2011) Motivation: A literature review. Available via Pearson Assessments. https://images.pearsonassessments.com/images/tmrs/Motivation_Review_final.pdf. Accessed 21 Feb 2020

Lester D, Hvezda J, Sullivan S, Plourde R (1983) Maslow's hierarchy of needs and psychological health. J Gen Psychol 109:83–85

Maat SM, Adnan M, Abdullah MFNL, Ahmad CNC, Puteh M (2015) Confirmatory factor analysis of learning environment instrument among high performance school students. Creat Educ 6:640–646

Maslow AH (1943) A theory of human motivation. Psychol Rev 50:370–396

Maslow AH (1987) Motivation and personality. Harper and Row, New York

Maslow AH (1993) The farther reaches of human nature. Penguin Group, New York

Mellinger CD, Hanson TA (2016) Quantitative research methods in translation and interpreting studies. Routledge, New York

Muchinsky PM (2003) Psychology applied to work: an introduction to industrial and organizational psychology. Wadsworth Pub, Belmont

Nilsen H (2009) influence on student academic behaviour through motivation, self-efficacy and value expectation: an action research project to improve learning. Issues Inf Sci Inf Technol 6:545–556

Pintrich PR, Smith DAF, Garcia T, McKeachie WJ (1991) A Manual for the use of the motivated strategies for learning questionnaire. National Center for Research to Improve Postsecondary Teaching and Learning, Ann Arbor

Przybylski AK, Weinstein N, Murayama K, Lynch MF, Ryan RM (2012) The ideal self at play: The appeal of video games that let you be all you can be. Psychol Sci 23(1):69–76

Rojas-Méndez JI, Papadopoulos N, Murphy SA (2013) Measuring and positioning nation brands: a comparative brand personality approach. Corp Reput Rev 16:48–65

Ryan RM, Deci EL (2000) intrinsic and extrinsic motivations: classic definitions and new directions. Contemp Educ Psychol 25:54–67

Saldanha G, O'Brien S (2013) Research methodologies in translation studies. Routledge, New York

Stephens DC (2000) The Maslow business reader. J. Wiley, New York

Strong LL, Fiebert MS (1987) Using paired comparisons to assess Maslow's hierarchy of needs. The Annual Convention of the American Psychological Association (93rd, Los Angeles, CA, August 23–27, 1985). https://eric.ed.gov/?id=ED264472. Accessed 12 May 2021

Timarová Š, Salaets H (2011) learning styles, motivation and cognitive flexibility in interpreter training: Self-selection and aptitude. Interpreting 13(1):31–52

Tokan MK, Imakulata MM (2019) The effect of motivation and learning behaviour on student achievement. S Afr J Educ 39(1):1–8

Uysal HT, Aydemir S, Genc E (2017) Maslow's hierarchy of needs in 21st century: The examination of vocational differences. In Arapgirlioğlu H, Elliott, RL, Turgeon, E, Atik, A (eds) Researches on Science and Art in 21st Century Turkey. Gece Kitaplığı, 211–227.

Wang LF, Sun JW, Ren J, Meng YY (2020) How are language service providers affected by Covid-19?. Available at Language on the Move. https://www.languageonthemove.com/how-are-language-service-providers-affected-by-Covid-19/?tdsourcetag=s_pctim_aiomsg. Accessed 3 Apr 2020

Woodrow L (2017) Motivation in language learning. *Educational*. Linguistics 27:235–248

Yahaya AH (2013) Abraham Maslow: The needs hierachy. Available at: https://core.ac.uk/download/pdf/11782195.pdf. Accessed March 11th 2020

Zhang ZX (2019) How much money does a college student need?. Available at China Daily Global, September 8th, 2019. http://www.chinadaily.com.cn/kindle/2019-09/08/content_37508646.htm. Accessed 13 June 2020

Zhu L, Reeves P (2015) Chinese students' postgraduate education choices in China: An exploratory study of their key influences. http://usir.salford.ac.uk/id/eprint/35275/1/BAM%202015FINAL.pdf. Accessed 6 June 2020