EFL teachers’ coping strategies amidst the Covid-19 virtual education and their association with work engagement and teacher apprehension

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Abstract
Teaching can be considered as an extremely demanding and stressful occupation and being a language educator brings about its own distinctive challenges. In the wake of COVID-19 pandemic, teachers worldwide experienced fundamental changes in their profession and their lives as a whole. Coping with such an unprecedented situation and responses to it have created new and extra stressful factors for teachers to cope with, including the difficulties created by quick transition from direct teaching to virtual and remote teaching. This study examined EFL teachers’ coping strategies during the Covid-19 virtual education and their association with work engagement and teacher apprehension. A total of 296 language instructors contributed to this study by participating in a survey in January 2021. To determine what coping strategies teachers use in virtual teaching during Covid-19, the researchers adapted the Brief-COPE scale designed and validated by Carver (Int J Behav Med 4:92–100, 1997) to make it appropriate for virtual education. The survey measured 11 coping strategies divided into two broad types, approach and avoidant. For measuring work engagement, the Work and Well-being Survey (UWES) scale designed and validated by Schaufeli and Bakker (Test manual for the Utrecht work engagement scale, vol 3. Utrecht University, The Netherlands, pp. 44–52, 2003. http://www.schaufeli.com) was utilized. To assess teachers’ apprehension, the research employed the Sources of Teachers’ Apprehension Scale (STAS) developed by Ghanizadeh et al. (Asia-Pac Educ Res 1–14, 2020). The result demonstrated that the adapted coping strategies scale enjoys acceptable reliability and validity indices. The results estimated via structural equation modeling (SEM) revealed that EFL teachers’ approach coping strategies positively and significantly predicted work engagement ($\beta = 0.72, t = 10.56$). Work engagement was negatively predicted by avoidant coping strategies ($\beta = -0.29, t = -3.36$). Teacher apprehension was negatively influenced by approach coping strategies ($\beta = -0.44, t = -5.57$) and positively by avoidant coping strategies ($\beta = 0.43, t = 5.29$). The study proposes some practical recommendations for overcoming the Covid-19 related challenges which could further deliver valuable guidance for supporting future training of teachers.

Keywords Apprehension · Coping strategies · Covid-19 · Online teaching · Work engagement
1 Introduction

The onset of Coronavirus Disease 2019 (Covid-19), as a health crisis, has totally changed lifestyles and globally impacted on all aspects of people’s life including education. During these atypical days, for responding to the pandemic of Covid-19, most of the countries have decided to close the schools, colleges, and universities. The global closure of education led to a vast and inevitable use of technology, particularly online technology to enhance distance learning. Teachers and their students around the globe are expecting to cope with these unusual and unexpected consequences, which are brought on by this deadly virus. It is clear that for coping with this pandemic, most teachers have been required rapidly to switch face-to-face teaching to online and remote teaching via technology under unfamiliar circumstances. The unpredictable and rapid transition to online teaching can be difficult for teachers, particularly those who do not have enough preparation or even training for coping with this situation (Ghanizadeh, 2021; Holzer et al., 2021) How long the pandemic of Covid-19 might remain and how stable these stressors can be, are identified as unanswerable questions. Therefore, it will be useful for the teachers with various physical and psychological statuses to be aware of several stressors resulting from this pandemic condition and the different coping strategies they can use through online environments.

Here, it seems these coping strategies are particularly critical for language teachers, given that interaction, negotiation, collaboration, and feedback provision are indispensable aspects of language classes. These characteristics are best realized in face-to-face settings, but in virtual setting, they demand a high level of commitment on the part of teachers and can create severe anxiety and apprehension among teachers (Ghanizadeh, 2021).

Therefore, and in line with what has been mentioned above, the aim of the present study is to scrutinize EFL teachers’ coping strategies during the Covid-19 virtual education and its association with work engagement and teacher apprehension.

2 Review of the related literature

2.1 Technology

At the early twenty-first century with the rapid growth of technology, it becomes a need of life in all communities and a necessary factor in order to acquire knowledge and facilities in all matters. Nowadays, we are witnessing this fact that technology is a great support for education, because it employs qualified exposure and access to linguistic and cultural materials. For instance, using digital multimedia technologies can promote various aspects of learning more efficiently than using a single medium alone (Ghanizadeh et al., 2015). It was indicated that using various types of technology can have positive effects on students’ progress in the way that students can improve in four basic skills and sub-skills, including reading, writing, speaking, an listening (Ghanizadeh et al., 2015). The important terms Computer-Assisted Language Learning (CALL) and Mobile-Assisted Language Learning (MALL) are two main areas of technology which are very popular in education and language learning. According to Bagheri et al. (2012), CALL is a tactic to language learning and teaching in which the computer is exploited as an aid to the demonstration, presentation, and evaluation of materials to be learned. Levy (1997) defines CALL as "the search for and study of applications of the computer in language teaching and learning" (p. 1).
According to Warschauer (1996), the gradual development of CALL over these years can be categorized into three separate stages as Behavioristic CALL, Communicative CALL, and Integrative CALL. Behavioristic CALL as the first stage, perceived in the 1950s and executed in the 1960s and 70s, was in accordance with the behavioristic theories of learning. Platforms of this stage involved repetitive language drills and can be mentioned as drill and practice (Warschauer, 1996). Communicative CALL was developed based on the communicative approach to teaching which became eminent in the 1970s and 80s. At the same time, behavioristic approaches to language teaching were forbidden at its both level, and when entrance of new personal computers were stimulating greater potentials for discrete work (Yang, 2010). Integrative CALL moved to a viewpoint which looks for both integrating different skills and also incorporating technology more than before into the language acquisition route (Yang, 2010), where learners are instructed to utilize various technical tools for language learning and use (Yang, 2010).

There is a large volume of published studies describing the effect of CALL on teaching and learning. To determine the effects of CALL, Ghorbani and Marzban (2013) found that students’ grammatical ability was improved as a result of using the CALL-based grammar teaching software. It showed CALL instruction could be a suitable tool to teach grammar. Iravani and Tajik (2012) showed that CALL has a great effect on students’ grammar learning. The participants in this research learned grammatical points through CALL better than those who learned it in traditional ways.

Mobile-Assisted Language Learning (MALL) as the second most important area of technology has a major role in the implementation of mobile equipment in language learning. MALL can be defined as the subcategory of e-learning, which implies teaching language learning with the use of mobile devices. It should be pointed out that MALL differs from CALL in its employment of individual, portable devices that make innovative ways of learning possible, underlining stability or speed of access and interface in various contexts (Kukulska-Hulme & Shield, 2008). Thus, it can be inferred that MALL is more learner-centered than CALL.

MALL can be regarded as an ultimate key for language learning problems in terms of time and place (Miangah & Nezarat, 2012). Research on using mobile phones in language learning (Hsu, 2013) demonstrated that students have positive attitudes toward the use of mobile phones in language learning, and they can be used for content delivery in different ways. For example, through text messages, it is possible to provide vocabulary items, quizzes, and surveys (Siddique & Nair, 2015), so that learners; reading and writing skills can be enhanced. Or they provide learners with various educational applications. Kim and Kwon (2012) summarized the advantages of MALL as providing immediate access to learning materials, facilitating learners’ contribution to collaborative as well as individualized language learning events, permitting quick development of four important skills, and inspiring learners to be more interested, independent, and socially cooperative.

2.2 Coping strategies

The Covid-19 pandemic has created tremendous stress and anxiety. People across the globe particularly language teachers and their learners have to cope with the stressors of this pandemic. According to MacIntyre et al. (2020), coping refers to a process during which a person uses one or more available strategies or techniques in order to respond to a stressor. A teacher’s use of coping reactions to diverse stressful factors is significant for their mental wellbeing and adjustment (MacIntyre et al., 2020). Coping strategy can be defined as
an adaptive reaction to a particular stressor. This definition means that a coping strategy is the procedure via which an individual pursues to cope with stress, using psychological approaches. Additionally, coping strategy as a response to a stressor, in its cognitive and behavioral mechanisms can reduce, minimize, control or tolerate the particular stressor (Gustems-Carnicer & Calderón, 2013; Khorasani & Ghanizadeh, 2017).

According to Lazarus and Folkman (1984), coping strategies can be divided into emotion-focused and problem-focused strategies (as cited in MacIntyre et al., 2020). Although problem-focused coping is targeted at resolving a recognized difficulty or performing something in order to change the cause of stress, emotion-focused coping is intended to diminish or control emotional pain that is related to or activated by a certain condition (Ferdowsi & Ghanizadeh, 2017).

Another classification of coping strategies was introduced by Endler and Parker (1990). This model conceptualizes three dimensions of coping in response to a stressful situation: task-oriented, emotion-oriented, and avoidance-oriented coping. Task-oriented coping denotes responses concentrating on problem resolution or addressing the case of stress effectively. Emotion-oriented coping covers responses directed toward oneself rather than the problem at hand, causing depression or anxiety. Avoidance-oriented coping encompasses responses designed to avoid dealing with the stressful situation, such as distracting oneself with other situations.

Different studies to date approved that coping is an important variable in the process of minimizing or bearing stress, and impacts on academic development (Gustems-Carnicer & Calderón, 2013). Gustems-Carnicer and Calderón (2013) found that problem solving coping by teacher training students had a valuable impact on reducing sadness and apprehension. MacIntyre et al. (2020) stated that relatively successful coping strategies create more positive consequences and cause fewer negative results. It has been found that when coping strategies fail, people may find themselves feeling anxious and stressful (MacIntyre et al., 2020). Ferdowsi and Ghanizadeh (2017) reported that task coping strategies are determined by teachers’ effective teaching and job satisfaction.

2.3 Work engagement

Work engagement is in contrast to burnout in the way that engaged employees in contrast to those who suffer from burnout, have a sense of robust and real relationship with their work events, and they see themselves as skillful to cope with their occupation (Schaufeli & Bakker, 2004). Based on Schaufeli and Bakker (2004), work engagement is defined as: “a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption” (pp. 4–5). Vigor is recognized with a great amount of energy and intellectual resilience during work. Also, dedication is pertinent to being intensely engaged with an individual’s work, and a sense of enthusiasm, importance, and challenge. Moreover, absorption refers to being completely focused and occupied in one’s occupation, whereby time passes rapidly and one cannot separate one’s self from work (Bakker & Demerouti, 2008).

Prior studies have shown that job resources and personal resources predict work engagement and lead to better performance (Pourtousi & Ghanizadeh, 2020). These studies have persistently revealed occupation resources such as social support from co-workers, feedback on performance, autonomy, and development opportunities are significantly connected with work engagement (Bakker, 2011). Job resources refer to those physical, organizational, or social features of the work that may lead to the reduction of job loads.
and physiological and psychological costs. These resources are influential in achieving job objectives as well as in enhancing professional development (Bakker, 2011). Job resources are considered to exert both an intrinsic motivational impact by stimulating staff development, and an extrinsic motivational influence through warranting achievement goals (Bakker & Demerouti, 2008).

Individual means are constructive self-evaluations that are connected with resiliency and show persons’ sense of ability to positively regulate their activities (Bakker, 2011). Xanthopoulou et al. (2009) investigated the role of three individual means in predicting work engagement. The results showed that engaged staffs are extremely self-efficacious; in fact, they are able to meet the requirements they encounter in various settings. Moreover, engaged staffs have the tendency to be optimistic and believe in their capabilities to satisfy the organization demands (as cited in Bakker, 2011).

It is important to mention that engaged employees perform better on a regular basis. The higher the workers’ levels of everyday engagement, the higher their earnings (Bakker & Demerouti, 2008). If we compare engaged staffs with non-engaged ones, it can be concluded that engaged staffs usually have much better experiences like pleasure, enthusiasm, and enjoyment (Bakker & Demerouti, 2008). Second, engaged staffs experience better health. According to Bakker and Demerouti (2008), engagement is positively associated with health, and this normally would lead to better performance. This implies that they are able to dedicate all their abilities and energies to their occupation (Bakker, 2011). Third, engaged staffs have the ability to mobilize resources, which can help them to be more creative in generating their own resources. In other words, engaged employees compared with non-engaged staffs can better accomplish the achievement goals of their occupation, and display higher commitment to their job (Bakker & Demerouti, 2008). Because in most societies, individuals’ performance is the consequence of cooperative work, the commitment of a person can be transferred to other people and enhance their teamwork indirectly (Bakker, 2011). Thus, engaged employees encourage their coworkers to function more efficiently as a team (Bakker & Demerouti, 2008). All in all, it appears work engagement can impact various aspects of employees’ effectiveness, and in turn can be influenced by various elements and attributes.

### 2.4 Teacher’s apprehension

Ferdowski and Ghanizadeh (2017) pointed that stress can be explained as a serious threat which can have a great influence on the value of work life, psychological well-being, and physical health.

Teacher stress can be defined as the negative and unfavorable emotions—such as apprehension, annoyance, inflexibility, frustration or unhappiness—experienced by teachers (Ghanizadeh & Jalal, 2017). Anxiety as one aspect of stress among teachers can influence the quality of teaching in the classroom, which, in turn, hinders achieving course objectives and effective performance (Aslrasouli & Vahid, 2014).

According to Ghanizadeh et al. (2020), apprehension is a part of anxiety which relates mostly to cooperative occupations like teaching. Actually, apprehension can be referred to as anxiety about the future, mainly about coping with difficult circumstances. One of the distinctive features of apprehension is the likelihood of experiencing detrimental outcomes. Another distinguishing aspect of apprehension is that it is highly interwoven with communication anxiety (Goldast et al., 2021).
According to Ghanizadeh et al. (2020), fundamentally, the degree of teacher’s apprehension is completely reliant on teachers’ personal factors and attributes. In a recent qualitative study on EFL teachers’ apprehension, Goldast et al. (2021) found that ramifications of EFL teachers’ apprehension include attitudinal factors, job-related factors, stress coping strategies, and smart classroom management. In their, they classified burnout as one of the subcategories of job-related factors. As contended earlier, burnout is the flipped side of work engagement. Hence, in the present study, teacher apprehension was presumed to be an antecedent of work engagement.

According to MacIntyre et al. (2020), there is no teacher training program which involves topics such as ‘how to cope with a pandemic’ and ‘how to effectively convert to online teaching under emergency conditions’. Obviously, if there was adequate training for coping with unexpected situation previously, teachers could adapt themselves to this condition more easily and effortlessly nowadays. How long the virtual education resultant from this pandemic might last, and how durable these strains would be might remain unresolved for an indefinite period. So identifying the stressors of this unexpected pandemic and adapting appropriate strategies are critical issues. This study attempts to identify how teachers’ coping strategies during Covid-19 could bring about emotional, psychological, and participatory consequences.

Based on the related literature mentioned, and in order to see any probable relationships among coping strategies employed by teachers during Covid-19 virtual education, teaching apprehension, and teachers’ work engagement, the following research questions were raised to attain the goals of the current study:

1. Do coping strategies employed by EFL teachers during the Covid-19 virtual education have any significant effect on their work engagement?
2. Do coping strategies employed by EFL teachers during the Covid-19 virtual education have any significant effect on their teaching apprehension?
3. Does EFL teachers’ apprehension have any significant effect on their work engagement?

### 3 Method

#### 3.1 Participants

The participants of the research consisted of 296 EFL teachers that were selected according to convenience sampling among EFL teachers teaching English in language institutes and schools in Mashhad, a city in north-eastern of Iran. The participants were both female \((N = 169, 58\%)\) and male \((N = 128, 42\%)\). The age range of the sample was from 20 to 55 and their degrees ranged from “Bachelor of Arts (BA)” to “Doctor of Philosophy (Ph.D.)." Overall, the sample had considerable teaching experience (see Table 1).

| Teaching experience | Frequency \((n)\) | Percent (%) |
|---------------------|------------------|-------------|
| < 3 years           | 34               | 12          |
| 3–10 years          | 111              | 38          |
| 10–20 years         | 151              | 50          |
The variety of institutions and levels of instruction represented in the sample include elementary (\( N = 74, 25\% \)), intermediate (\( N = 177, 60\% \)), and advanced (\( N = 45, 15\% \)).

### 3.2 Instruments

For the purpose of data collection, three following questionnaires were administered as part of an online survey in this study.

#### 3.2.1 Teachers' coping strategies scale (TCS)

To determine what coping strategies teachers use in virtual teaching during Covid-19, TCS scale was adapted from Brief-COPE scale (Carver, 1997) which was validated and designed by MacIntyre et al. (2020) for EFL teachers (Appendix A). Brief-COPE scale measures teachers’ general coping strategies in their profession. To make it appropriate for virtual teaching in COVID pandemic, we made some modifications and validated the scale for this study. The Teachers' Coping Strategies scale encompasses 37 items that evaluate 11 subscales. Each subscale was not intended to be used independently, and we used them both individually and in two clusters: (1) Avoidant Coping which characterized by the subscales of denial, venting, behavioral disengagement, self-blaming and (2) Approach Coping which is characterized by the subscales of active coping, positive reframing, planning, acceptance, seeking emotional support, and seeking instrumental support, and religion. The items of this scale are measured on a five-point Likert-type scale connected with the notations ranging from 1 (never) to 5 (very often). The total Cronbach’s alpha estimate of the scale was found to be 0.89. The Cronbach’s alpha estimates for each factor ranged from 0.80 to 0.91. Table 2 displays the comprising factors along with the sample items.

| Factor                      | Sample item                                                                 | Items |
|-----------------------------|-----------------------------------------------------------------------------|-------|
| Acceptance                  | I accept the reality of the fact (virtual education) that it happened         | 1, 2, 3 |
| Emotional support           | I talk to someone about how I feel                                           | 4, 5, 6 |
| Positive reframing          | I try to see it in a different light, to make it seem more positive          | 7, 8, 9, 10 |
| Active coping               | I take additional action to try to get rid of the problem                   | 11, 12, 13, 14 |
| Instrumental support        | I ask people who have had similar experiences what they did                  | 15, 16, 17 |
| Planning                    | I make a plan of action                                                      | 18, 19, 20, 21 |
| Behavioral disengagement    | I give up the attempt to get what I want                                     | 22, 23, 24, 25 |
| Denial                      | I refuse to believe that it has happened                                    | 26, 27 |
| Self-blaming                | I force myself to wait for the right time to do something                   | 28, 29, 30, 31 |
| Venting                     | I feel a lot of emotional distress and I find myself expressing those feelings a lot | 32, 33 |
| Religion                    | I pray to be able to handle it                                               | 34, 35, 36, 37 |
3.2.2 Work and well-being survey (UWES)

For measuring participants’ work engagement, the Work and Well-being Survey (UWES) scale which was designed and validated by Schaufeli and Bakker (2003) was utilized. This inventory consists of 17 items that measures three subscales: vigor (6 items), dedication (5 items), absorption (6 items). It uses a 7-point Likert-type scale (ranging from 0 (never) to 6 (always)), to rank teachers’ level of work engagement. The reliability of the subscales ranged from 0.68 to 0.79 in the original study. Table 3 shows the factors and their corresponding descriptions as well as the reliability estimate in the present study.

3.2.3 Sources of teachers’ apprehension scale (STAS)

To determine teachers’ apprehension, the research employed the Sources of Teachers’ Apprehension Scale (STAS) designed and validated by Ghanizadeh et al. (2020). This scale that encompasses 33 items evaluates 4 factors: (1) attitudinal, (2) organizational, (3) L2-related factors and (4) classroom management. Moreover, each item is measured on a five-point Likert-type scale connected with the notion: “strongly agree, agree, neutral, disagree, strongly disagree” (Appendix C). As reported by the researchers, the total Cronbach’s alpha estimate of the scale was found to be 0.90. The Cronbach’s alpha estimates for each factor ranged from 0.82 to 0.91 in the original study: (Attitudinal = 0.85, Organizational = 0.82, Classroom management = 0.91, L2-related factors = 0.91). Table 4 demonstrates the schematic representation of the four sub-scales of teachers’ apprehension, their corresponding items, and the reliability of the subscales in this study.

3.3 Procedure

The process of data collection was conducted during the Covid-19 pandemic. The participants of the present study comprised EFL teachers in different institutes and schools in Mashhad. Three questionnaires including Teachers’ Coping Strategies Scale (TCS), Work and Well-Being Survey (UWES), and Sources of Teachers’ Apprehension Scale (STAS) were administered via Google Form. Because of the pandemic of Covid-19, the online survey was shared via social media networks and through personal email contacts with those language teachers who were selected based on convenience sampling. Totally, the online questionnaires were sent to 328 participants, out of which 296 acceptable responses were received.

Endeavor was made to observe ethical considerations throughout data collection procedure. To take into account the anonymity, the participants were not required to declare
| Factors                  | Sample items                                                                 | Items                                                                 | Cronbach’s Alpha |
|-------------------------|------------------------------------------------------------------------------|-----------------------------------------------------------------------|------------------|
| Attitudinal factors     | I am afraid that my students regard me as an incompetent English teacher     | 2, 3, 7, 8, 12, 13, 16, 17, 18, 22, 23, 24, 27, 29, 30                 | .81              |
| Organizational          | I feel apprehensive when I am not well-prepared                              | 6, 10, 14, 15, 25                                                   | .83              |
| L2-related problems     | I am anxious when I have to deal with unfamiliar idioms or expressions in English | 1, 4, 5, 11, 21, 26, 28                                             | .79              |
| Classroom management    | I feel apprehensive when the students ask irrelevant questions              | 9, 19, 20, 31, 32, 33                                                | .84              |
their names. Furthermore, confidentiality and privacy of responses and information were assured.

4 Results

4.1 Validity of the teacher coping strategies (TCS) via CFA

As stated earlier, the scale measures two broad factors: approach and avoidant. Approach coping (APP) comprises seven sub-factors: Acceptance (ACC): 3 items, Emotional support (ES): 3 items, Positive reframing (PR): 4 items, Active coping (AC): 4 items, Instrumental support (ES): 3 items, Planning (PL): 4 items, Religion (RE): 4 items.

Avoidant coping (AVOI) consists of four sub-factors: Behavioral disengagement (BD): 4 items, Denial (DN): 2 items, Self-blaming (SB): 4 items, and Venting (VE): 2 items. To substantiate the validity of the scale (consisting of 37 items), it was first handed out among participants. Having collected the data, we ran confirmatory factor analysis (CFA) employing the Lisrel statistical package.

To consider the model fit, these thresholds were scrutinized: Chi-square/df ratio lower, the normed fit index (NFI), the good fit index (GFI), and the comparative fit index (CFI), and the Root Mean Square Error of Approximation (RMSEA) (Schreiber et al., 2006).

The structural model is presented in Fig. 1. The indices verified the confirmation of the model and the acceptable factor loadings for all items (above 0.30).

The total Cronbach’s alpha estimate of the scale was found to be 0.89. The Cronbach’s alpha estimates for each factor fluctuated from 0.80 to 0.91. The correlations among the 11 factors were also calculated. As indicated in Table 5, all the sub-factors highly correlated with each main factor and with the total TCS: Approach & TSC ($r = 0.90, p < 0.05$), Avoidant & TCS ($r = -0.52, p < 0.05$).

![Fig. 1](image_url) The schematic representation of the four factors of TCS and the corresponding items. $\chi^2 = 521.21$, df = 213, RMSEA = .070, GFI = .90, CFI = .90, NFI = .89

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Table 5  The correlation coefficients among factors of TCS

|     | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 |
|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1. ACC |  1.00 |     |    |    |    |    |    |    |    |    |    |    |    |    |
| 2. ES  | .56 ** |  1.00 |    |    |    |    |    |    |    |    |    |    |    |    |
| 3. PR  | .71 ** | .60 ** |  1.00 |    |    |    |    |    |    |    |    |    |    |    |
| 4. AC  | .67 ** | .65 ** | .86 ** |  1.00 |    |    |    |    |    |    |    |    |    |    |
| 5. IS  | .66 ** | .73 ** | .73 ** | .70 ** |  1.00 |    |    |    |    |    |    |    |    |    |
| 6. PL  | .67 ** | .62 ** | .90 ** | .66 ** | .68 ** |  1.00 |    |    |    |    |    |    |    |    |
| 7. RE  | .51 ** | .61 ** | .66 ** | .86 ** | .43 ** | .62 ** |  1.00 |    |    |    |    |    |    |    |
| 8. APP | .79 ** | .80 ** | .92 ** | .92 ** | .78 ** | .92 ** | .78 ** |  1.00 |    |    |    |    |    |    |
| 9. BD  | − .47 ** | − .50 ** | − .45 ** | − .37 ** | − .39 ** | − .40 ** | − .29 ** | − .45 ** |  1.00 |    |    |    |    |    |
| 10. DN | − .51 ** | − .40 ** | − .44 ** | − .29 ** | − .51 ** | − .42 ** | − .31 ** | − .46 ** |  1.00 |    |    |    |    |    |
| 11. SB | − .56 ** | − .53 ** | − .28 ** | − .51 ** | − .27 ** | − .21 ** | − .22 ** | − .42 ** | .56 ** | .61 ** |  1.00 |    |    |    |
| 12. VE | − .58 ** | − .38 ** | − .38 ** | − .33 ** | − .41 ** | − .39 ** | − .35 ** | − .42 ** | .58 ** | .51 ** | .66 ** |  1.00 |    |    |
| 13. AVO | − .69 ** | − .60 ** | − .48 ** | − .44 ** | − .52 ** | − .45 ** | − .30 ** | − .56 ** | .81 ** | .82 ** | .83 ** | .74 ** |  1.00 |    |
| 14. TCS | .58 ** | .63 ** | .84 ** | .86 ** | .65 ** | .85 ** | .78 ** | .90 ** | − .61 ** | − .56 ** | − .45 ** | − .51 ** | − .52 ** | − .53 ** |
4.2 Descriptive statistics of the variables under study

To investigate the relationship between teacher coping strategies, work engagement, and teacher apprehension, a structural model containing these variables was proposed. First, descriptive statistics of the three variables were computed.

4.2.1 TSC and its 11 components

Table 6 presents descriptive statistics of EFL teachers’ TSC and its 11 subscales. As the table shows, the mean of Approach coping strategies is ($M = 89.37, SD = 24.23$), for Avoidant coping strategies ($M = 31.62, SD = 10.96$), and for total TCS is ($M = 121.05, SD = 20.25$).
4.2.2 Work engagement and its three components

Descriptive statistics of EFL teachers’ work engagement and its three subscales are presented in Table 7. As the table shows, the descriptive statistics of Vigor is ($M = 24.01$, $SD = 8.26$), for Dedication is ($M = 22.34$, $SD = 6.81$), for Absorption is ($M = 24.20$, $SD = 8.14$), and for total Work engagement is ($M = 76.83$, $SD = 15.96$).

4.2.3 Teacher apprehension

Table 8 displays descriptive statistics of EFL teachers’ apprehension. As the table indicates, the mean score of teacher apprehension is 100.69 and SD is 24.3.

4.3 The proposed model

To inquire if the hypothesized model containing coping strategies, work engagement, and apprehension fits the data, SEM employing LISREL8.50 statistical package conducted. As demonstrated by Fig. 2, the chi-square value (132.25), the chi-square/df ratio (2.31), the RMSEA (0.062), and GFI (0.90) all reached the acceptable fit thresholds. It implies that the model had a good fit with the empirical data.

To check the strengths of the causal relationships among the variables, the $t$-values and standardized estimates were examined. As indicated in Fig. 2, it was demonstrated that EFL teachers’ approach coping strategies positively and significantly predicted work engagement ($\beta = 0.72$, $t = 10.56$). Work engagement is negatively predicted by avoidant coping strategies ($\beta = -0.29$, $t = -3.36$). Teacher apprehension is negatively influenced by approach coping strategies ($\beta = -0.44$, $t = -5.57$) and positively by avoidant coping strategies ($\beta = 0.43$, $t = 5.29$). It was also found that work engagement and teacher apprehension are negatively associated ($\beta = -0.48$, $t = -6.02$).

For the ease of representation, the above paths are displayed in the following table as well (Table 9).

The correlation coefficient between EFL teachers’ coping strategies, work engagement, and apprehension is presented in Table 10.

As can be seen, there is a positive correlation between work engagement and coping strategies ($r = 0.65$, $p < 0.05$), and there is a negative correlation between teacher apprehension and coping strategies ($r = -0.34$, $p < 0.05$).

Table 8  Descriptive statistics of EFL teachers’ apprehension

|                      | N  | Minimum | Maximum | Mean | SD  |
|----------------------|----|---------|---------|------|-----|
| Attitudinal factors  | 296| 5.00    | 74.00   | 45.67| 15.68|
| Organizational factors| 296| 5.00    | 25.00   | 15.74| 4.38 |
| L2-related factors   | 296| 5.00    | 35.00   | 22.27| 7.17 |
| Classroom Management | 296| 5.00    | 30.00   | 18.41| 6.38 |
| Teacher apprehension | 296| 56.00   | 154.00  | 100.69| 24.3 |
| Valid N (listwise)   | 296|         |         |      |     |
**Fig. 2** The schematic representation of the variables under study. $\chi^2 = 132.2549$, df = 57, RMSEA = .069, GFI = .91

**Table 9** The represented path of the model

| Path                                      | $\beta$ value (Direct effect) |
|-------------------------------------------|-------------------------------|
| Approach coping strategy $\rightarrow$ Work engagement | 0.72                          |
| Avoidant coping strategy $\rightarrow$ Work engagement  | −0.29                         |
| Approach coping strategy $\rightarrow$ Teacher apprehension | −0.44                         |
| Avoidant coping strategy $\rightarrow$ Teacher apprehension | 0.43                          |
| Teacher apprehension $\rightarrow$ Work engagement | −0.48                         |

**Table 10** The correlation coefficient between EFL Teachers’ coping strategies, work engagement, and apprehension

|                        | 1    | 2    | 3    |
|------------------------|------|------|------|
| 1. Work engagement     | 1.00 |      |      |
| 2. Teacher apprehension| −0.54** | 1.00 |      |
| 3. Approach coping      | 0.72** | −0.51** | 1.00 |
| 4. Avoidant coping      | −0.40** | 0.50** | −0.56** | 1.00 |
| 5. Coping strategies    | 0.65** | −0.34** | 0.90** | −0.53** | 1.00 |

**Correlation is significant at the 0.05 level (2-tailed)**
5 Discussion

The present study sought to scrutinize what coping strategies are applied by EFL teachers through an online environment during Covid-19, and probe their association with teacher apprehension and work engagement. As already stated, coping strategies were assessed via two broad types of strategies: approach and avoidant, each associated with a number of sub-factors. Approach coping (APP) encompasses seven sub-factors: Acceptance (ACC), Emotional support (ES), Positive reframing (PR), Active coping (AC), Instrumental support (IS), Planning (PL), and Religion (RE). Avoidant coping (AVOI) includes four sub-factors: Behavioral disengagement (BD), Denial (DN), Self-blaming (SB), and Venting (VE).

In the present study, it was found that most EFL teachers used approach coping strategies ($M = 89.37$) rather than avoidant coping strategies ($M = 31.62$) during the online education of Covid-19. The most frequently used coping strategy was positive reframing, followed by planning, religion, active coping, acceptance, instrumental support, emotional support. This is consistent with those of MacIntyre et al. (2020) who showed that most EFL teachers, in order to cope with unexpected situations, frequently used approach coping strategies and less frequently used avoidant coping strategies. Carver et al. (1989) also found that the coping strategy which was used commonly was acceptance, followed by planning, reframing, and active coping, which are the determinants of approach coping strategies.

The first research question investigated the role of coping strategies in work engagement. The results substantiated that EFL teachers’ approach coping strategies positively and significantly predicted work engagement ($\beta = 0.72$), and avoidant coping strategies predicted work engagement negatively ($\beta = -0.29$). In other words, teachers who selected approach coping strategies in order to cope with Covid-19 situation displayed higher levels of work engagement, while teachers with avoidant coping strategies displayed low engagement. According to Carver (1997), coping strategies can be grouped into two broad constructs as ‘approach’ and ‘avoidant’ coping styles. Approach strategies tend to alter the sources of anxiety, or they will assist the individual to adapt to it in his/her life; avoidant coping strategies generate more detrimental reactions, such as withdrawal, desperation, or disengagement. Other features of approach coping strategies include admitting the reality of the event and getting accustomed to it easily, relieving emotionally, experiencing well-being, exerting effort and trying to enhance the situation, and pursuing support and guidance from others.

It can be discussed that all these features would contribute to teachers’ positive, fulfilling, and work-related state of mind, i.e., work engagement. Hence, approach coping strategies as the contributing psychological state of mind would positively predict work engagement.

The second research question examined the role of coping strategies in teacher apprehension. The results demonstrated that approach strategies would actually alter the source of stress, or approach coping strategies influenced teacher apprehension negatively ($\beta = -0.44$), whereas avoidant coping strategies influenced teacher apprehension positively ($\beta = 0.43$). This is consistent with the characteristics of these two strategies in that approach coping strategies tend to make stress more tolerable in person’s life, while avoidant coping strategies would stimulate more dysfunctional responses (MacIntyre et al., 2020).

This finding is also in agreement with previous studies, in which teachers’ employment of coping responses to a variety of stressors can be considered as a key factor in
their psychological well-being (Gustems-Carnicer & Calderón, 2013; Pyhältö et al., 2021; Talbot & Mercer, 2018). Different approach coping strategies project satisfactory consequences, and avoidant coping strategies predict negative outcomes such as stress, anxiety, anger, sadness, loneliness (MacIntyre et al., 2020). Gustems-Carnicer and Calderón (2013) found that avoidant coping strategies are linked to negative psychological well-being. Approach coping strategies predict more favorable outcomes and have nexus with low levels of anxiety, while avoidant coping strategies predict less favorable outcomes (Griffith et al., 2000). MacIntyre et al. (2020) mentioned that teachers who were frequently engaging with avoidant coping strategies underwent increased degrees of stress and negative emotions. In effect, teachers under more stress, in contrast to those under less stress, rely more on avoidant coping strategies.

The third research question probed the role of teacher apprehension in work engagement ($\beta = -0.48$). In other words, teachers who experienced higher levels of apprehension were more prone to the decline in work engagement. This finding is in accordance with the conceptualization of work engagement, being in contrast with burnout (Schaufeli & Bakker, 2004). There is a plethora of studies substantiating the close link between anxiety and burnout (e.g., Ferdowsi & Ghanizadeh, 2017; Khorasani & Ghanizadeh, 2017; Talbot & Mercer, 2018).

6 Conclusions and implications

The advent of Covid-19 pandemic has created a number of difficulties and new stressors for teachers particularly language teachers around the world. Obviously, many language teachers have transformed their face-to-face classes to online teaching under emergency and unfamiliar conditions with inadequate preparation and training. In order to cope with this difficult situation, language teachers should do their best and use facilitative techniques. The purpose of the current study was to determine what coping strategies are applied by EFL teachers through online environment during Covid-19 and explore their association with their apprehension and work engagement. It was found that in terms of psychological well-being of language teachers, approach coping strategies are associated with more positive psychological outcome, while avoidant coping strategies are associated with more negative psychological outcome and negative emotions. The positive state of mind as work engagement is positively influenced by approach coping strategies, while the negative psychological state as teachers’ apprehension is negatively influenced by avoidant coping strategies. This study can be considered as a support for the future training and effective education because training teachers take precedence over training students; if we have good and educated teachers then we will have good students. The present study can be a great help for knowing how teachers with negative or positive experiences, or better to say with high/low level of apprehension and engagement, cope with this difficult situation and how the employed coping strategies can change the future of their professional life into a more successful one. It seems essential to equip teachers with teacher education and preparation programs in order to perform more successfully during such unpredictable situations. The findings emerged from these studies can be used in order to inform the future training of teachers, with an emphasis on improving their psychological health, increasing their engagement, and reducing their apprehension and burnout.

Our hope is that the present research can show the effectiveness of different coping strategies which are used by language teachers during the pandemic and its association
with different psychological states of mind. Such insights can be a valuable offer due to how to support the future training of EFL teachers in order to cope with the unexpected and unfamiliar stressors of the crisis. Being a teacher is stressful enough, so teacher education programs should be powerful in order to support and help teachers to deal best with the stressors of such difficult situation.

7 Limitations of the study

Besides the afore-mentioned discussion, the present study has one distinguishing feature. It used a questionnaire for measuring teachers’ coping strategies constructed uniquely for EFL teachers involving in virtual education during the Covid-19 pandemic. Nonetheless, the present research was limited in a number of ways. First, due mainly to the practicability considerations, the participants were selected based on convenience sampling. Second, due to the pandemic and the associated constraints, the sample was limited to 296 EFL teachers. Third, this research was constructed only among EFL teachers in language institutes and schools in Mashhad, a city in northeast of Iran. So the replication of this research with other samples from universities and centers in different parts of the country is recommended.

Another limitation of the present study was that it portrayed a blurred picture of the constructs, as the state of data collection was accomplished at a particular point in time. These variables all should be scrutinized over time, as they might have different realization in various contexts and under different circumstances. Ghanizadeh (2021) contended that contextual and personal resources create differences in how individuals respond to stressors which might necessitate diverse sets of coping strategies. Thus, the present research should be replicated through a longitudinal research design.

Appendix

Appendix A. Teachers’ coping strategies scale (TCS)

| Questionnaire 1 | 1 | 2 | 3 | 4 | 5 |
|-----------------|---|---|---|---|---|
| Directions      | The following items are about different teachers’ coping strategies as they involve in the virtual education during the pandemic of Covid-19. Please read each item carefully and indicate your answers to each item by choosing the appropriate rate on the 5-point scale below. Your answers will be kept confidential. (1 = Never, 2 = Sometimes, 3 = Half the time, 4 = Often, 5 = Very often) |
| 1. I learn to live with online teaching |   |   |   |   |   |
| 2. I get used to the idea that it happened |   |   |   |   |   |
| 3. I accept the reality of the fact that it happened |   |   |   |   |   |
| 4. I talk to someone about how I feel |   |   |   |   |   |
| 5. I try to get emotional support from friends or relatives |   |   |   |   |   |
| 6. I get sympathy and understanding from someone |   |   |   |   |   |
| 7. I look for something good in what is happening |   |   |   |   |   |
| 8. I try to see it in a different light, to make it seem more positive |   |   |   |   |   |
Questionnaire 1

Directions: The following items are about different teachers’ coping strategies as they involve in the virtual education during the pandemic of Covid-19. Please read each item carefully and indicate your answers to each item by choosing the appropriate rate on the 5-point scale below. Your answers will be kept confidential. (1 = Never, 2 = Sometimes, 3 = Half the time, 4 = Often, 5 = Very often)

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| 9. I learn something from the experience |
| 10. I try to grow as a person as a result of the experience |
| 11. I take additional action to try to get rid of the problem |
| 12. I concentrate my efforts on doing something about it |
| 13. I do what has to be done, one step at a time |
| 14. I take direct action to get around the problem |
| 15. I ask people who have had similar experiences what they did |
| 16. I try to get advice from someone about what to do |
| 17. I talk to someone to find out more about the situation |
| 18. I try to come up with a strategy about what to do |
| 19. I make a plan of action |
| 20. I think hard about what steps to take |
| 21. I think about how I might best handle the problem |
| 22. I give up the attempt to get what I want |
| 23. I just give up trying to reach my goal |
| 24. I admit to myself that I can’t deal with it, and quit trying |
| 25. I reduce the amount of effort I’m putting into solving the problem |
| 26. I refuse to believe that it has happened |
| 27. I pretend that it hasn’t really happened |
| 28. I force myself to wait for the right time to do something |
| 29. I hold off doing anything about it until the situation permits |
| 30. I make sure not to make matters worse by acting too soon |
| 31. I restrain myself from doing anything too quickly |
| 32. I get upset and let my emotions out |
| 33. I feel a lot of emotional distress and I find myself expressing those feelings a lot |
| 34. I seek God’s help |
| 35. I put my trust in God |
| 36. I try to find comfort in my religion |
| 37. I pray to be able to handle it |
Appendix B. Work and well-being survey scale (UWES)

| Questionnaire 2 | 0 1 2 3 4 5 6 |
|-----------------|---------------|
| Directions The following 17 statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, cross the “0” (zero) in the space after the statement. If you have had this feeling, indicate how often you felt it by crossing the number (from 1 to 6) that best describes how frequently you feel that way. |
| 1. At my work, I feel bursting with energy. (VI1) | |
| 2. I find the work that I do full of meaning and purpose. (DE1) | |
| 3. Time flies when I am working. (AB1) | |
| 4. At my job, I feel strong and vigorous. (VI2) | |
| 5. I am enthusiastic about my job. (DE2) | |
| 6. When I am working, I forget everything else around me. (AB2) | |
| 7. My job inspires me. (DE3) | |
| 8. When I get up in the morning, I feel like going to work. (VI3) | |
| 9. I feel happy when I am working intensely. (AB3) | |
| 10. I am proud of the work that I do. (DE4) | |
| 11. I am immersed in my work. (AB4) | |
| 12. I can continue working for very long periods at a time. (VI4) | |
| 13. To me, my job is challenging. (DE5) | |
| 14. I get carried away when I am working. (AB5) | |
| 15. At my job, I am very resilient, mentally. (VI5) | |
| 16. It is difficult to detach myself from my job. (AB6) | |
| 17. At my work, I always persevere, even when things do not go well. (VI6) | |

Appendix C. Sources of teachers’ apprehension Scale (STAS)

| Questionnaire 3 | 1 2 3 4 5 |
|-----------------|-----------|
| Directions Please indicate your answers to each item by choosing the appropriate rate on the 5-point scale below. Your answers will be kept confidential. (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly disagree) |
| 1. I am anxious when I have to deal with unfamiliar idioms or expressions in English | |
| 2. I am not confident in speaking English | |
| 3. Students’ disinterest in class activities makes me worried | |
| 4. I am afraid that my students ask me about unknown contents in English classes | |
| 5. I feel uneasy when my students are bored with my class | |
| 6. I feel apprehensive when I am not well-prepared | |
| 7. I worry when I happen to deal with unknown contents related to culture in English classes | |
Questionnaire 3

Directions Please indicate your answers to each item by choosing the appropriate rate on the 5-point scale below. Your answers will be kept confidential. (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly disagree)

1 2 3 4 5

8. I am afraid that I do not have up-to-date knowledge about English testing and methodology
9. I feel apprehensive when the students ask irrelevant questions
10. I am nervous when I run out of time and I cannot cover the syllabus
11. I am afraid that my students regard me as an incompetent English teacher
12. I feel stressed when the students are expectant
13. I am afraid that my colleagues who are very fluent English speakers regard me as an incompetent English teacher
14. I worry when I am under pressure before attending the class
15. I feel stressed when students misbehave in the class
16. I feel anxious when I cannot build up a good rapport with the students
17. I worry when I happen to deal with unknown vocabulary and grammar in English classes
18. It makes me anxious when I feel students do not understand teaching materials
19. When I see my students have difficulty in doing the tasks, I feel anxious
20. I worry about being compared with competent English teachers
21. I feel uneasy when students are anxious in my class
22. I feel apprehensive when I am teased by the students and lose my face
23. I feel stressed when I am observed by my supervisor
24. I feel anxious when my students are not motivated
25. When my students do not actively participate in class activities, I feel apprehensive
26. I feel anxious when words escape me
27. I am afraid of making mistakes when I use English
28. I am not confident in listening to English
29. I feel apprehensive when I make spelling errors
30. I am nervous when I teach English through English
31. I feel as if I lost my face when I recognize my students or colleagues find something wrong in my spoken language
32. I feel uneasy when I feel the supervisor might be dissatisfied with my performance
33. I feel anxious when I am not praised by the students

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Data availability Data will be made available by request.

Declarations

Conflict of interest The authors also state that they do not have any conflict of interests.

Ethical approval All procedures performed in this study were in accordance with the ethical standards of the 1964 Helsinki declaration and its later amendments or comparable ethical standards, although no institutional arrangements for the governance of ethics exist in the country in which the research was done.
Consent to participate Endeavor was made to observe the ethical issues required for a research study involving humans, including, privacy, anonymity, and confidentiality considerations. Nonetheless, no formal consent was applied.

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