Emotional Support in Online Teaching and Learning Environment: A Systematic Literature Review (2014–2023)

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Abstract

The provision of appropriate emotional support is influential in establishing a positive and stimulating online learning environment that can elevate students' emotional well-being, improve their learning experience and enjoyment, and increase their academic achievements. In the present study we examine 16 papers on emotional support in online teaching and learning environments. We aim to understand (a) the emotional support given to online learners and (b) the effectiveness of emotional support in online teaching and learning environments. The review shows that the emotional support given to online learners includes empathy, understanding, motivation, and encouragement. These verbal and nonverbal emotional supports are mainly from teachers, family members, and peers as well as some online agents or applications. Most of the emotional supports influence online learners' performance and have a favorable impact on their emotional states. The systematic review shows that there has been little research on technology-based emotional support and synchronous teaching and learning environments. We propose that more research should be carried out in these areas.

Keywords: emotional support, online teaching, online learning

1. Introduction

Because of the rapid expansion of the internet, online teaching and learning have become essential components of education (Hua, 2021). Classroom instruction has changed from physical face-to-face to online forms, particularly during the outbreak of the global COVID-19 pandemic. The internet's convenience and abundant information have fueled the growth of online teaching and learning (Liu et al, 2020). However, researchers have questioned the failure to account for learners' emotions while teaching online, which remains to be adequately addressed (Geng, Yu, & Zheng, 2021; Jawaid & Tariq, 2018).

Emotion is a critical aspect of teaching and learning because it motivates learners to acquire knowledge (Cai, 2021). Nonetheless, instructors and students are not in physical contact during the online teaching and learning process, and there is a lack of emotional signals like gestures and facial expressions. With no way to see their teachers' encouraging or clear expressions, students only interact with others via the mouse, keyboard, and screen in an online classroom. Long-term exposure to such an atmosphere can cause students to experience unpleasant emotions like anxiety and loneliness, which makes it challenging for them to stay in a good state of mind (Zuo, 2020).

The results of a review and analysis of the literature show that although many researchers have examined emotional concerns in online teaching and learning from various angles and dimensions, many of them have only looked at the causes of a lack of emotional consideration. There are not enough relevant empirical studies on solving the issue of emotion that arises during online teaching and learning, nor are there many studies that highlight emotional supports that can solve the issue of emotion that arises during the online teaching and learning process. Therefore, strengthening the awareness of emotional support for students and providing emotional support for them is the key to the success of online teaching and learning (Wu, Wang & Huang, 2023).

1.1 Emotional Support

In the online teaching and learning context, Ariffin et al. (2022) defined emotional support as the overall emotional

tone of the classroom and the connection between teachers and students. It involves displaying warmth, respect, enjoyment, and enthusiasm during learning activities. Additionally, emotional support includes teachers' responsiveness to students' needs and their awareness of students' academic and emotional functioning. Emotional support also encompasses creating a positive climate, showing sensitivity to students' needs, and valuing students' perspectives in the online learning environment. He, Jiang, Zhu & Hu (2023) described emotional support as the provision of empathy, friendliness, encouragement, esteem, love, and caring. According to the aforementioned literature, teachers do not directly provide emotional support to address course-related issues but rather to help students cope with negative emotions during e-learning. Negative emotions, such as anxiety, depression, or distress, can have a significant impact on students' attitudes toward and acceptance of e-learning.

Providing students with adequate emotional support will help them concentrate on the material, which will improve their learning effectiveness and efficiency in the long run (Mozid, 2022; Yu, Huang, Han, He & Li, 2020). This is supported by Scheepers and Van den Berg (2022), who found that although students' need for emotional support varied, they all acknowledged that feeling connected to their online learning was greatly influenced by the individual who could provide that emotional support. In a similar vein, research indicated that student self-efficacy can be influenced by emotional support (Zalazar-Jaime, Moretti, García-Batista & Medrano, 2023). In contrast, the absence of emotional support and isolation experienced by online learners makes it challenging for them to sustain a long-lasting passion for learning (Azmat & Ahmad, 2022). Therefore, offering students emotional support during the process of online teaching and learning is one of the most efficient ways to overcome this emotional deficiency (Jones, Polyakova-Norwood, Raynor & Tavakoli, 2022; Xu, Li, Chen, Bao & Zheng, 2023).

1.2 Purpose of the Review

Although authors of a number of prior review studies have concentrated on emotional support, none have conducted a systematic review of research regarding the ability to lessen the negative emotions of online learners. Hence, to fill this gap, we aim to provide a systematic review of emotional support in online teaching and learning environments. In this case, researchers can better understand the breadth of the field's study by conducting a systematic review of the literature on such kinds of emotional support. In the current study we review previous studies focused on emotional support to decrease learners' negative emotions in the online environment. The aim of this systematic literature review is to address the following questions:

1. What kinds of emotional support do teachers give to learners in the online teaching and learning environment?
2. How effective are the emotional supports among learners in online teaching and learning environments?

2. Method

In the present study we adopt a systematic literature review method to classify the literature related to emotional support in online teaching and learning environments. Compared with the narrative descriptive literature review, the systematic literature review method is unique and advantageous in that it searches and screens the relevant literature through electronic databases and assesses the quality of the screened literature strictly and precisely according to the research questions and protocol criteria. This method of literature review can draw relatively definite conclusions while pursuing transparency in the research process (Mulrow & Cook, 1998; Petticrew, 2001; Sawyer, 2017).

The Recommended Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Moher, Liberati, Tetzlaff, Altman, & Prisma Group, 2010) served as guidelines for searching to guarantee that our literature review was systematic. The PRISMA conveys the process that is employed to find literature for our study. Page et al. (2021) described four stages in the generation of papers using the PRISMA method: identification, screening, eligibility, and inclusion (see Figure 1).

2.1 Search Strategy

We identified the reviewed papers for this study using electronic scientific databases such as ScienceDirect (Elsevier), Web of Science, and Scopus. We chose these databases for their transdisciplinary scope, availability, and relevance to this topic. We deployed the search terms "emotional support," "online teaching," "online learning," "online teaching and learning," and "e-learning" in the electronic databases with Boolean search parameters.

2.2 Inclusion Criteria

A comprehensive search of the digital databases was the first step. We chose studies that fulfilled the following inclusion criteria: (i) their authors carried out empirical research on emotional support in online teaching and learning environments. Thus, we eliminated articles formatted as books, book chapters, conference proceedings,

meta-analyses, systematic reviews, literature reviews, or meta-syntheses; (ii) they were published between January 2014 and the end of December 2023; (d) they had undergone peer review; and (e) they were written in English. We identified 520 articles through this search.

2.3 Selection of Studies

The study selection process began with reviewing and filtering the titles and abstracts of the papers that made the shortlist. We reviewed all studies based on their titles and abstracts and excluded any that did not address emotional support for online learners. This screening process produced 165 pertinent papers overall; however, upon synthetically analyzing the screening findings, we discovered 12 of the articles to be duplications. Then, we had to evaluate the 153 shortlisted full-text papers for their eligibility. This process required thoroughly reviewing the documents and identifying the papers that met the subsequent inclusion criteria: the studies that had relevant data on emotional support, the online environment, and its research methodology. We considered the 72 papers that fulfilled the selection criteria after this process for the last selection. Finally, we assessed the quality of the remaining papers (n=72) based on the research questions. This is a crucial step to ensure the validity and reliability of the systematic review findings. Because the research questions of this study were focused on the types and effectiveness of emotional support provided to online learners, we excluded any remaining papers that did not address these two questions. Ultimately, we accepted 16 research papers and used them for data extraction and analysis.

2.4 Selection Results

Figure 1 shows the PRISMA flowchart, which outlines the search results and process of selection for all research being considered.

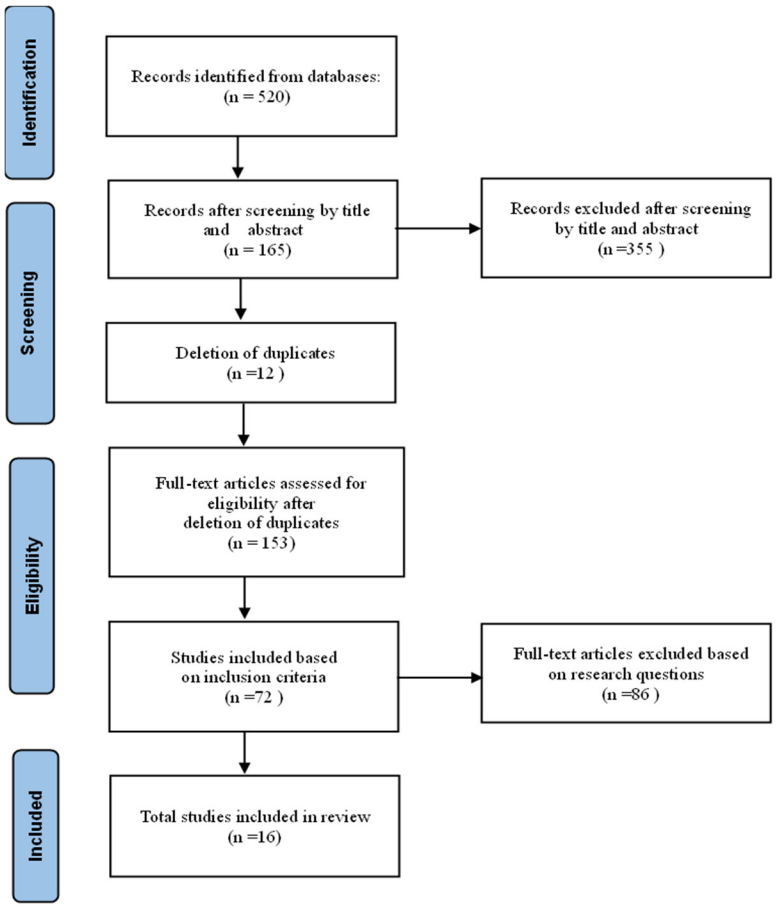

Figure 1. PRISMA Flow Diagram Illustrating the Review Selection Process

2.5 Data Extraction and Analysis

We started by taking data out of the chosen papers, analyzing them, and then organizing the data into a coding table (Kangas, Koskinen, & Krokfors, 2017; Randolph, 2019). We noted relevant data, including the author(s), year of publication, title, methodology (qualitative, quantitative, or mixed approach), and the types of emotional support, in relation to the first research question. Concerning the second research question, we emphasized the main findings from the studies pertaining to the effect of emotional support on online teaching and learning environments. After that, we coded the data to allow for further analysis.

We analyzed all chosen sets of data qualitatively. We employed a descriptive coding approach, frequently employed in various qualitative inquiry formats, to complete the study in four steps (Saldaña, 2016). Initially, we typed all of the data in a Microsoft Excel file. After that, we developed a coding system based on their pertinent areas of importance. Third, we used these codes on the data in the Microsoft Excel spreadsheet. Finally, we employed the coding frequencies to generate more precise themes to respond to research questions.

3. Results

RQ1) What kinds of emotional support are given to learners in the online teaching and learning environment?

The emotional support suggested in the 16 studies differed. The types of emotional support in these studies roughly fall into two broad categories, verbal emotional support and nonverbal support. Verbal emotional support is using spoken or written words to provide comfort, empathy, reassurance, and encouragement to someone facing emotional discomfort, difficulties, or obstacles. Nonverbal emotional support, conversely, involves using gestures, facial expressions, visual aids, and other nonverbal cues to convey empathy, encouragement, positive emotions to individuals, and so on. By reviewing these 16 pieces of literature, we saw that most of these studies' authors proposed verbal and nonverbal emotional support strategies based on online teaching and learning practices. In contrast, few authors suggested strategies based on a survey of emotional support needs.

Four of these 16 papers' authors gave the corresponding emotional support strategies based on the survey of emotional support needs. Yang, Shen & Jiang (2023) proposed verbal-emotional support such as using encouraging and empathetic language to communicate with students, acknowledging their efforts, and guiding them through effective learning strategies. The verbal and nonverbal emotional support in the study by Zhao, Shao & Su (2022) included teacher–student interaction, learner–learner interaction, design of interactive activities, and platform interface user-friendliness. The study conducted by Wang (2022) suggested that emotional support should involve teachers demonstrating care, respect, and encouragement toward students, and fostering a supportive environment in online learning, which are all types of verbal emotional support. He et al. (2023) suggested providing emotional support, including both verbal and nonverbal forms, in the following ways: peer encouragement and praise during e-learning activities. and supervisors listening and providing support when students encounter difficulties and creating a supportive learning environment that promotes empathy, friendliness, and care.

The remaining 12 articles' authors proposed emotional support strategies based on online teaching and learning practices and described verbal and nonverbal emotional support on the aspects of teachers, peers, and families. Generally speaking, these emotional supports are provided by way of words and deeds, as well as those provided by technological means.

Berry carried out the study of teacher emotional support (2017), proposing that verbal and nonverbal teacher emotional support be provided to online doctoral students. Verbal emotional support included texting for morale, venting, seeking advice, and mutual motivation, whereas nonverbal emotional support involved sharing jokes and images, organizing formal study groups for academic collaboration, and so on. In another way, Dahn et al. (2022) explored how teaching artists adapted their practices to create engaging and supportive online learning environments. The teaching artists shared visual representations of student artwork and projects to celebrate achievements and foster a sense of pride and accomplishment. They also underscored verbal emotional support such as using encouraging and supportive language to validate students' emotions and experiences. On the other side, Ariffin et al. (2022) advocated teacher emotional support, which included positive communication, sensitivity in communication, and encouraging communication.

Hou studied peer emotional support (2015), emphasizing offering verbal emotional support in the form of encouragement, guidance, empathy, positive feedback, and emotional connection from peers and teachers. Likewise, Zhang and Wang (2017) performed research on peer coaching in teachers' online professional learning communities. The verbal-emotional support included providing words of encouragement, expressing empathy, offering positive

feedback, and giving reassurance to fellow teachers. Except the verbal emotional support, they also advocated nonverbal emotional support, which involves using emojis, symbols, or gestures to convey support, understanding, and solidarity with peers during peer coaching interactions.

Parents' emotional support is also an important research topic. Tao and Xu (2022) listed parents' verbal emotional support through words of encouragement and positive reinforcement to motivate and uplift children's spirits. This is very similar to the study by Lambert and Dryer (2018), who identified the verbal and nonverbal family emotional support including the family's affirmation and encouragement to the students and involvement in academic support activities such as proofreading and typing.

Some researchers also investigated combining with the technology to give emotional support. Terzidou, Tsiatsos & Apostolidis (2018) designed a pedagogical-empathic agent that could provide emotional support to students during online educational processes. This agent could provide verbal and nonverbal emotional support such as engaging with students through instant messaging chat and encouraging students to control their heart rate. In another way, Harburg, Lewis, Easterday & Gerber (2018) developed a cheer-on system that provided both verbal and nonverbal emotional supports including supportive comments and expressing empathy, trust, care, and appreciation for students' efforts by using encouraging words or visual elements and so on. Similarly, Iulamanova et al (2021) proposed a decision support system that provided activities like praising students, showing a joke, and presenting inspirational videos to give students emotional support.

Guo, Goh, Luyt, Sin, & Ang (2015) and Wei (2023), meanwhile, explored the routes for emotional support provided by available agents or applications. The former explored the impact of affective embodied agents (EAs) in an online information literacy tutorial for university students. The EAs provided emotional support through both verbal and nonverbal means. Verbal support includes the use of speech to offer encouragement, reassurance, and guidance to users. Nonverbal support involves facial expressions, body gestures, and other visual cues that convey emotions such as empathy, satisfaction, and excitement. Likewise, the latter employed a mobile vocabulary application to offer verbal emotional support such as compliments and recognitions of users' achievements and nonverbal emotional support such as a thumbs-up icon and a happy face.

RQ2) How effective are the emotional supports among learners in online teaching and learning environments?

Through this literature review, we have found that whether verbal or nonverbal, emotional support plays a positive role in the learning process of students and helps to improve their emotional state and knowledge. This emotional support also had a positive impact on online learners' learning experience and their acceptance of online education. Guo et al. (2015) found that the group that received emotional support benefited greatly in terms of motivation and enjoyment of learning, whereas the group without emotional support showed lower motivation and enjoyment of learning. This is consistent with the findings of Iulamanova, Bogdanova & Kotelnikov (2021), who showed that students who used the decision support system, which can provide emotional support, had a much better emotional state during instruction. Furthermore, there was a 20% increase in the online learners' experience of positive emotions. At the same time, the students' knowledge was higher, and the number of students who passed the exam increased by 12.5%.

The studies on verbal and nonverbal emotional support from teachers showed that it had a variety of positive effects on the online student population and contributed to a supportive and caring online learning environment. Furthermore, it could also enhance the emotional connection between teachers and students and increase the likelihood of academic achievement and completion (Ariffin et al., 2022; Dahn et al., 2022).

We found peer emotional support to be effective in creating a supportive and encouraging environment. Peer-to-peer emotional support can be provided through online communication and interaction, sharing experiences, encouragement, and understanding of each other's challenges and achievements. These supports foster mutual understanding and cohesion and create a positive online learning environment (Hou, 2015; Zhang & Wang; 2017).

Verbal and nonverbal emotional support from parents helps to enhance children's emotional well-being, reduce academic stress, promote motivation, and improve academic performance while strengthening parent–child relationships (Tao & Xu, 2022). Moreover, the emotional support given by the parents is equally effective for the senior students. Lambert and Dryer (2018) found that parental emotional support had a positive impact on online learning for higher education students (with learning disabilities), including enhancing students' self-concept and self-esteem, boosting motivation and willingness to learn, and creating a positive learning environment.

Researchers have proven the verbal and nonverbal emotional support based on technology effective not only for asynchronous teaching and learning but also for synchronous teaching and learning in a virtual environment. For the

asynchronous environment, Harburg et al. (2018) showed that the emotional support provided by the cheer-on system enhanced psychological safety, perceived value, and community building within the platform, contributing to a supportive and motivating environment for student teams. In a similar study, Iulamanova et al. (2021) found that the emotional state of the students who used the decision support system was significantly improved compared to those who did not use it. The number of positive emotions and the level of their knowledge increased, and the number of students who passed the test increased by 12.5%. Furthermore, Guo et al. (2015) revealed that students with emotional agency interactions gained more emotional enjoyment from the tutorials. The study conducted by Wei (2023) showed that the mobile vocabulary application was effective in supporting self-assessment practices and enhancing learning experiences for young adolescent learners.

As for the emotional support in synchronous teaching and learning, there was only one study, which was in the context of the virtual environment. This study was conducted by Terzidou et al. (2018), who found that the proposed pedagogical-empathic agents in a 3D virtual learning environment supported students effectively during collaborative online activities. The agent monitored students' anxiety levels in real time, provided tailored support like relaxation techniques, and sent awareness messages to students in need. Students found the agents helpful, with positive feedback on their usefulness and potential for supporting immersive learning experiences.

4. Discussion

The purpose of this study was to summarize the body of knowledge regarding emotional support in online teaching and learning environments. Therefore, we carried out a systematic review. Research has demonstrated that emotional support from family and peers can effectively reduce negative emotions (Hilliard, Kear, Donelan, & Heaney, 2020). Additionally, emotional support from teachers is a crucial outside factor that motivates learners to act in ways that lead to favorable results (Wang, 2022). Therefore, we anticipated that this field of study would have received greater attention. However, the results of this study indicate that not much research has been done on emotional support in online teaching and learning. Scherer, Howard, Tondeur & Siddiq (2021) focused on teachers' readiness for online teaching but did not specifically delve into the depth of emotional support in online learning. Although Semmer et al. (2008) examined the emotional meaning of social support, they did not address emotional support in the context of online teaching and learning. By referring to these studies, it is clear that there is a relative lack of study on emotional support in the context of online teaching and learning. This highlights the need for further exploration and investigation of emotional support in enhancing online learning experiences and outcomes.

Six papers' authors employed quantitative research methodologies, and eight papers' authors used a qualitative method, while only two papers' authors used the mixed method to investigate how emotional support influences online teaching and learning. The six quantitative studies' authors made use of a questionnaire survey or quasi-experimental design. The eight qualitative studies' authors employed interviews and classroom observation methods. The two mixed-method studies' authors used both questionnaires and interviews to conduct the study. There are nearly equal numbers of studies involving qualitative and quantitative methods, but fewer studies based on mixed methods. Consequently, studies using a mixed methodology are required to possibly boost this field's research.

Findings from this study indicate that emotional support offered by teachers, family members, and peers in verbal and nonverbal forms impacts online learners' engagement, learning experiences, learning outcomes, and so on. Furthermore, most of the studies highlighted both verbal and nonverbal emotional support, while few of them used only one form to provide emotional support. Nonverbal emotional support such as the use of emojis can also be effective in conveying positive emotions and encouragement, enhancing student engagement (Ariffin et al., 2022). Thus, nonverbal emotional support should also be given attention.

In terms of the number of studies, there are more studies on emotional support from teachers and fewer studies on emotional support from family members and peers. Among them, the studies of younger students or students with learning disabilities are focused on emotional support from family members (Lambert & Dryer, 2018). In contrast, studies of students in higher grades have jointly tended to emphasize emotional support from teachers (Tao & Xu, 2022).

In addition, technology-based emotional support accounts for not a few of these emotional support studies. This indicates that the application of educational technology has gained importance in online teaching and learning (Scheeper & Van den Berg, 2022). However, these technology-based emotional supports mostly apply to asynchronous teaching and learning (Guo et al., 2015; Harburg et al., 2018; Iulamanova et al., 2021; Wei, 2023), and there is almost no technology-based emotional support for synchronous teaching and learning. As we all know, there

are many differences between synchronous and asynchronous instruction (Bates, 2023). Synchronous online learning, which involves real-time interactions between instructors and students, can be challenging for both parties (Pan, 2023). Furthermore, synchronous situations often involve group discussions, presentations, and collaborative activities (Fabriz, Mendzheritskaya & Stehle, 2021). Navigating these social connections in an online space can be difficult and may cause emotional responses requesting support (Butz et al., 2015). Therefore, research on technology-based emotional support in synchronous teaching and learning should be given attention to address the gap in the current literature and provide suitable strategies for supporting students in real-time online environments. Apart from that, scholars and practitioners should also apply technology to facilitate emotional support during synchronous instruction to enhance student engagement, well-being, and learning outcomes in online settings.

5. Conclusion and Study Limitation

In this systematic review we aimed to investigate previous literature on the emotional support given to learners in the online teaching and learning environment. Throughout the study process, we obtained 520 studies from three different literature databases. Sixteen studies remained after evaluating quality, inclusion, and exclusion criteria to retain just the appropriate articles regarding the research issue. Emotional support is an important factor that influences online learners' learning experiences, achievement, and so on. Therefore, it requires attention (Green, Faizi, Jalal, & Zadran, 2022; He et al., 2023). Providing effective emotional support to online learners will decrease their negative emotions and improve their positive emotions, motivation, and involvement in online learning (Cho & Heron, 2015).

In this study we offered a systematic review and summary of emotional support in online teaching and learning environments. According to the reviewed studies, the emotional support provided to online learners was mainly from teachers, family members, peers, and technology such as applications, online agents, and online systems. Moreover, this emotional support can be consolidated into two types: verbal and nonverbal. The results of this literature review will assist researchers and online educators in determining how best to provide emotional support to learners who are enrolled in online courses.

When assessing the review findings, certain limitations need to be taken into account. First, we only covered peer-reviewed papers in this review. Because of this, the results of this review might not fully capture the emotional support provided through online teaching and learning environments, particularly in the form of book chapters, conference proceedings, theses or dissertations, and review journals. Second, even though we made every attempt to search every English journal source related to the research topic, we cannot guarantee that we have included all available literature in our study. Therefore, it is possible that we overlooked some journal papers throughout the search. However, the major conclusions from this literature review are unlikely to be much altered by the overlooked documents. Last, we excluded papers conducted in other important languages, like Chinese, French, and Japanese, and instead focused primarily on English-language literature.

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Authors contributed equally to the study.

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No additional data are available.