A Systematic Review of Studies Exploring Help-Seeking Strategies in Online Learning Environments

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Abstract
Adaptive help-seeking as a learning strategy can influence learners' learning outcomes. Learners in online learning environments need more self-regulation and especially more help-seeking strategies. A systematic review was conducted to explore help-seeking strategies in online learning environments. A search on help-seeking strategies in online environments in Educational Research Information Center (ERIC) and PsycInfo yielded 36 peer-reviewed articles that met the inclusion criteria for this study. Karabenick and Knapp's categories of help-seeking (formal help-seeking, informal help-seeking, instrumental activities, lowering performance aspirations, and altering goals) were used to review the strategies employed by students in online learning. The results show that there is an extreme lack of research on learners' psychological decision-making process when they lower performance aspirations or alter their goals. Moreover, most studies focus on the learners' formal and informal help-seeking behaviors in online settings. Since much research has been limited to small case studies that are not always generalizable, future studies are encouraged to include more instructional contexts and personal variables like gender, age, educational background, and mastery of computer skills. To avoid biases that may occur in self-reporting studies, recommendations are made for future studies that use more subjective methods to trace their actual help-seeking behaviors.

Keywords: adaptive help-seeking, online learning settings, formal & informal help-seeking

Help-seeking occurs when learners recognize a gap in their comprehension, and they seek assistance to bridge the existing gap. An effective way for learners to bridge the gap is to seek help from credible sources, including more experienced or knowledgeable people or places where they believe guidance is available. Seeking help had been regarded as an act of dependence by researchers until the 1980s when Nelson-Le Gall strengthened the adaptive role of help-seeking behavior (Puustinen, 1998). Nelson-Le Gall (1981) argued that a reconceptualization of help-seeking was required, and help-seeking should be viewed as an effective method for dealing with difficulties instead of stigmatizing and self-threatening behavior. Nelson-Le Gall (1985) further related "executive" to dependency-oriented help-seeking and "instrumental" to mastery-oriented help-seeking (see Table 1).

For executive help seekers, they intend to get the exact amount of help to solve the problem or attain a goal without focusing too much on understanding or internalizing the learning process. Instrumental help seekers, however, aim to obtain effective methods that enable them to solve problems independently and they typically refuse help when they can do certain tasks on their own. They focus on attaining the knowledge and skills to solve problems independently. Learners engaged in online learning environments are faced with more challenges in seeking help as instantly and effectively as they do in traditional face-to-face learning settings (Landrum, 2020; Li et al., 2021). To have a clear understanding of how help-seeking is employed by online learners, we did a systematic review, hoping to bring researchers' attention to the adaptive nature of help-seeking (Newman, 2002a).

Categorizations of Help-Seeking Strategies

Researchers' categorizations of those help-seeking strategies have evolved and become more inclusive than ever. In the 1980s, Nelson-Le Gall introduced the dichotomy of executive (or expedient) help-seeking and instrumental (or adaptive) help-seeking, which laid a foundation for the following categorizations. According to her categorization, those executive help-seekers are dependency-orientated, relying on external sources of help for problem solving. For adaptive help-seekers who are mastery-orientated, they choose to use all sources of help to facilitate their problem-solving process.

In 1991, Karabenick and Knapp performed a survey to test learners' help-seeking tendencies based on a 7-point rating scale and they further classified help-seeking behaviors into five categories, including formal help-seeking, informal help-seeking, instrumental activities, lowering performance aspirations, and altering goals. Definitions and examples for each category are presented in Table 1. Their categorizations take into consideration learners' psychological decision-making process and illustrate its influence on learners' instrumental activities, including the use of various learning strategies and especially their frequency of help-seeking (Karabenick & Knapp, 1991).

Table 1

Categorization of Help-seeking by Karabenick & Knapp

Category	Definition	Example
Formal Help-seeking	Learners obtain help from formal sources.	Seek help from instructors, university-provided support personnel, and ask questions in class, etc.
Informal Help-seeking	Learners obtain help from informal sources.	Seek help from other students and more knowledgeable friends, etc.
Instrumental Activities	Learners take actions to help them perform better.	Try harder, study more, or take better notes, etc.
Lowering Performance	Learners lower their original aspirations and do easier things next time.	Take a lighter load next time, and select easier courses next term, etc.
Altering Goals	Learners change their goals based on past experiences.	Transfer to another school, change major or minor, etc.

Help-Seeking Strategies in Online Environments

The use of computer-mediated technologies supports both synchronous and asynchronous communications between instructors and learners, thus making online teaching and learning more common (U.S. Department of Education, 2010). The recent COVID-19 pandemic has further drawn researchers' attention to the learning efficacy in online learning environments. Much of the literature on help-seeking in higher education has focused on traditional face-to-face learning settings without paying enough attention to those online learners (Cheng et al., 2013). Online learning environments differ from traditional face-to-face meetings in that learners need more self-regulation of their learning, and they don't have the same opportunities to receive help as they do in face-to-face settings (Broadbent & Lodge, 2021).

Based on the uniqueness of online learning settings, Cheng et al. (2013) identified three types of online academic help-seeking, including information searching (e.g., search for specific information to solve academic problems on Google or other websites), formal query (e.g., email or contact course instructors for help), and informal query (make online requests to peers or unknown experts for academic help), taking into consideration learners' computer competencies, specifically learners' information searching skills. The new categorization has brought people's attention to learners' online help-seeking behavior, further strengthening the influence of help-seeking on online learners' learning outcome. Definitions and examples of the three categorizations are presented in Table 2.

Table 2

Categorization of Online Help-seeking by Cheng et al.

Category	Definition	Example
Information Searching	Search online for answers to solve academic problems.	Search for information on Google or other relevant websites.
Formal Query	Contact teachers or tutors online to request help.	Email course instructors or tutors to get help or receive help through e-tutor systems.
Informal Query	Seek help through formal and informal sources.	Go to social network sites to request help from unknown experts or other peers.

Makara and Karabenick (2013) argued that technology transformed the traditional formal and informal dichotomy, and they proposed a more diversified framework to categorize learners' help-seeking sources. Their categorization covers help-seeking strategies in both online and face-to-face learning environments. The first group of formal and informal help-seeking is the same as what researchers did in the past. Their second characterization centers on the relationship between the help giver and help receiver. Personal help-seeking indicates that the help learners receive comes from the person they are familiar with or close to, while impersonal help-seeking means the opposite. The third dimension focuses on the involvement of technologies and yields a group of mediated help-seeking and face-to-face help-seeking. Mediated help-seeking occurs with the help of technological tools, while face-to-face help-seeking doesn't require the presence of technology. The last dimension is determined by the adaptability of the help-seeking source. If it can change or adapt to learners' needs over time, it is called dynamic help-seeking, whereas it is categorized as static help-seeking, meaning that it stays the same over time. Definitions and examples are presented in Table 3.

Table 3

Categorization of Help-seeking by Makara & Karabenick (2013)

Categorization	Definition	Example
Formal (F) & Informal (In)	Seek help through formal and informal sources.	F: course website, instructor, syllabus, textbook, tutor center, etc. In: chat room, discussion board, peer, etc.
Personal (P) & Impersonal (Im)	The relationship between the help seeker and the help source is close or distant.	P: peer, instructor in person, friend, family, etc. Im: course website, web search engine, syllabus, textbook, etc.
Mediated (M) & Face-to-face (F)	Via some form of technology & meet the help source physically.	M: chat room, discussion board, course website, syllabus, textbooks, etc. F: instructor in person, peer in person, tutor center, etc.
Dynamic (D) & Static (S)	The help source adapts or changes over time based on learners' needs or not.	D: chat room, discussion board, instructor, peer, friend, tutor center, etc. S: course website, syllabus, textbook, etc.

As a manifestation of self-regulation, adaptive help-seeking requires learners to monitor their academic performance, show awareness of difficulties they cannot independently overcome, and exhibit a willingness to conquer that difficulty by requesting help from a more knowledgeable individual (Newman, 2002b). As a result, adaptive help-seeking is situated in one's ability to engage in self-regulated learning and is influenced by the environment (Giblin & Stefaniak, 2017; Karabenick & Dembo, 2011a). Learners' abilities to employ adaptive help-seeking strategies are greatly influenced when their learning environment is perceived as being mastery-oriented (Karabenick & Dembo, 2011b).

Purpose of Study

Help-seeking is a technique that is predominantly referenced in healthcare, counseling, and educational settings. While systematic reviews have been conducted to explore how help-seeking strategies support individuals in health disciplines, none have been conducted to explore help-seeking strategies in instruction. A systematic review exploring the types of strategies used to promote and facilitate adaptive help-seeking in online learning environments will help scholars identify trends in help-seeking research and identify opportunities for further exploration. It will also provide a comprehensive overview of the types of research methodologies that have been used to explore help-seeking as well as determine if emphasis has been placed on promoting adaptive or executive help-seeking strategies.

The following research questions guided this review:
1. What are the publication trends of help-seeking research in online learning environments (e.g., journals, years of publication, geographical location)?
2. What is the context of help-seeking research in online learning environments published (i.e., academic disciplines, instructional setting)?
3. What research design and data collection methods are used in the studies reviewed?
4. What guidelines and implications exist concerning the promotion of help-seeking strategies in online learning environments?

Methods

This study followed guidelines for conducting systematic reviews outlined in the Preferred Reporting of Items for Systematic Reviews and Meta-Analyses Statement (Liberati et al., 2009) and the U.S. Department of Education, Institute of Education Science (2017). We employed the following criteria in our systematic review:
1. Studies included in this review must have been published in peer-reviewed journals. Papers published in non-peer-reviewed journals, book chapters, technical reports, dissertations, or conference proceedings were excluded.
2. Papers included in this review must have been written in English. Non-English language journals were excluded.
3. The reviewed studies must include original research. Qualitative and quantitative methods were included. Studies were required to have identifiable methods and result sections. Review pieces, opinions, literature reviews, or conceptual papers were not included.
4. Studies included in this review addressed help-seeking research in online learning settings.

Screening Phase

Two databases, Educational Research Information Center (ERIC) and PsycInfo, were searched for eligible studies exploring help-seeking strategies in online learning environments. The five topical searches (TS) that were performed were TS = ("help-seeking" and "online learning"), which yielded 204 records in ERIC and 94 records in PsycInfo, TS = ("help-seeking" and "distance education"), which yielded 39 records in ERIC and 49 records in PsycInfo, TS = ("help-seeking" and "online education"), which yielded 383 records in ERIC and 173 records in PsycInfo, TS = ("help-seeking" and "blended learning"), which yielded 19 records in ERIC and 7 records in PsycInfo, and TS = ("help-seeking" and "e-learning"), which yielded 123 records in ERIC and 55 records in PsycInfo. Our initial search yielded a total of 1,146 papers. A total of

566 studies remained upon removing duplicates, non-English papers, and conceptual framework or literature review papers. After removing all papers that focus on the interrelationship between aspects of motivation and help-seeking, we were left with a total of 99 papers for further review. We then began to screen each study to see if specific help-seeking strategies were included. Of the 99 studies, a total of 36 studies remained in our review (see Figure 1). Each author reviewed and coded half of the studies included in this review. To ensure the reliability of the review process, we reviewed each other's codes. Due to the nature of the codes used for this study, there were no discrepancies between the reviewers during the coding phase.

Figure 1
Overview of the Screening Process
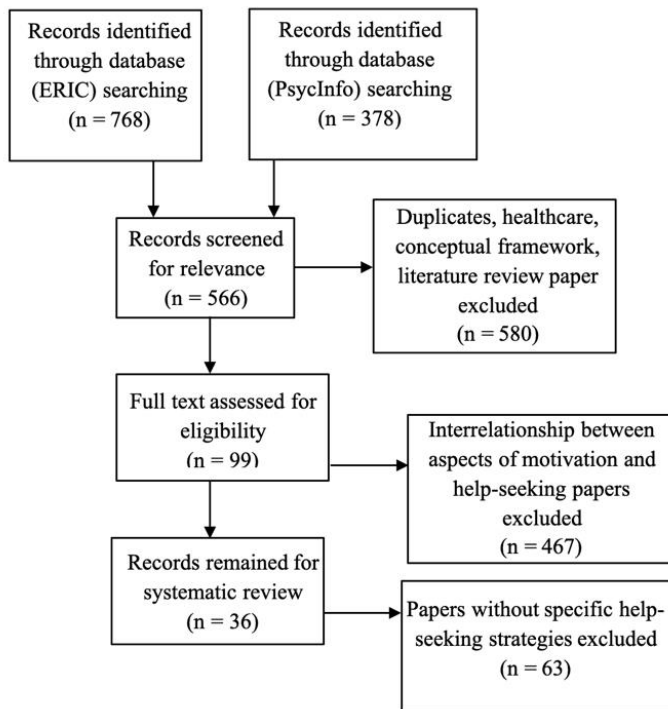
Results

Publication Trajectory

We did not impose any restrictions on dates of publication for this systematic review. We chose not to impose a data range for this review because there have not been a lot of studies focusing on online help-seeking. Due to the timing that this review was completed, all studies included were published between 2000 and 2021. Table 4 provides an overview of the publication trajectory of studies examining help-seeking strategies in online learning environments. As outlined in the table, research on help-seeking has significantly grown since 2011 with 33.3% (n = 12) of the studies included in this review occurring between 2011 and 2015 and 55.6% (n = 20) between 2016 and 2021. The increase in studies examining help-seeking in online environments coincides with the growth of online learning in higher education and K–12 settings (Allen & Seaman, 2017).

Table 4
Publication Trajectory

Years	(n)	Studies
2000–2005	1	Taplin et al. (2001)
2006–2010	3	Bannier (2007); Cheng & Tsai (2011); Kitsantas & Chow (2007); Whipp & Lorentz (2009)
2011–2015	12	Barbour et al. (2012); Brown et al. (2013); Cheng et al. (2013a, b); Er et al. (2015); Hao et al. (2016); Hao et al. (2017); Huet et al. (2011); Lee et al. (2014); Mahasneh et al. (2012); Reeves & Sperling (2015); Roll et al. (2014); Schworm & Gruber (2012)
2016–2021	20	Algharaibeh (2020); Al Hashimi (2019); Amador & Amador (2017); Astatke (2018); Butler et al. (2021); Çakiroglu & Öztürk (2017); Chao et al. (2018); Daley et al. (2016); Ding & Er (2018); Giblin & Stefaniak (2021); Giblin et al. (2021); Gleeson et al. (2019); Koc & Liu (2016); Lee et al. (2021); Mundia et al. (2016); Vanslambrouck et al. (2019)

Geographic Distribution

Regarding the geographic distribution of studies, the majority of studies examining help-seeking strategies in online learning environments were conducted in North American and Asian countries. Most studies were conducted in North America (52.7%), followed by Asia (33.3%), Europe (8.3%), Australia (2.8%), and Oceania (2.8%). A total of 13 countries or regions were represented by the research as outlined in Table 5. The geographic distribution may be attributed to the fact that one of the criteria for inclusion in this review was that studies must be published in English. The distribution can also be attributed to the rate of adoption of online learning environments.

Table 5
Countries & Regions of Study

Continent/Region	Country/Region	(n)
North America	United States	18
	Canada	1
Asia	Taiwan, China	6
	Jordan	2
	Bahrain	1
	Brunei	1
	Hong Kong, China	1
	Turkey	1
Europe	Belgium	1
	France	1
	Germany	1
Australia	Australia	1
Oceania	New Zealand	1

Educational Context

Table 6 provides an overview of the educational contexts where studies examining help-seeking strategies took place. Most studies (n = 29) occurred in higher education, followed by K–12 (n = 6). One study (Mundia et al., 2016) was conducted on teachers' help-seeking strategies as part of a professional development program.

Table 6
Educational Setting

Context	(n)	Studies
Higher Education	29	Al Hashini (2019); Algharaibeh (2020); Amador & Amador (2017); Astatke (2018); Bannier (2007); Brown et al. (2013); Butler et al. (2021); Çakiroglu & Öztürk (2017); Chao et al. (2018); Cheng et al. (2011); Cheng et al. (2013a, b); Ding & Er (2018); Er et al. (2015); Giblin & Stefaniak (2021); Giblin et al. (2021) Gleeson et al. (2019); Hao et al. (2016, 2017); Huet et al. (2011); Kitsantas & Chow (2007); Koc & Liu (2016); Lee et al. (2021); Linney (2017); Mahasneh et al. (2012); Reeevs & Sperling (2015); Schworm & Gruber (2012); Taplin et al. (2001); Vanslambrouck et al. (2019); Whipp & Loretz (2009)
K–12	6	Alvarado-Alcantar et al. (2018); Barbour et al. (2012); Daley et al. (2016); Lee et al. (2014); Roll et al. (2014)
Other	1	Mundia et al. (2016)

Research Methodologies

Table 7 provides an overview of the research methodologies used by the studies included in this review. Research methodologies were analyzed based on how they were presented in the methods and data collection sections of the articles. The majority of the studies were quantitative studies (55.6%) using questionnaires. Mixed studies (27.8%) reported using observations, interviews, social network analysis, learning management system logs, and questionnaires as data sources. Qualitative studies (16.7%) reported using open-ended surveys, interviews, and discussion posts.

Table 7

Types of Research Methodologies

Methodology	Data Sources	Studies
Qualitative (n = 6)	Open-ended surveys Interviews Discussion posts Video analysis	Al Hashimi (2019); Amador & Amador (2017); Barbour et al. (2012); Brown et al. (2013); Giblin & Stefaniak (2021); Vanslambrouck et al. (2019)
Mixed Methods (n = 10)	Observations Interviews Social network analysis LMS logs Questionnaire	Çakiroglu & Öztürk (2017); Er et al. (2015); Giblin et al. (2021); Koc & Liu (2016); Lee et al. (2021); Mahasneh et al. (2012); Reeves & Sperling (2015); Roll et al. (2014); Taplin et al. (2001); Whipp & Lorentz (2009)

Quantitative (n = 20)	Questionnaire	Algharaibeh (2020); Alvarado-Alcantar et al. (2018); Astatke (2018); Bannier (2007); Butler et al. (2021); Chao et al. (2018); Cheng & Tsai (2011); Cheng et al. (2013a, b); Daley et al. (2016); Ding & Er (2018); Gleeson et al. (2019); Hao et al. (2016, 2017); Huet et al. (2011); Kitsantas & Chow (2007); Lee et al. (2014); Linney (2017); Mundia et al. (2016); Schworm & Gruber (2012)

Types of Help-Seeking Sources Used in Online Environments

During our review of articles, we also categorized the types of help-seeking strategies they reported according to Karabenick and Knapp's (1991) categories: formal help-seeking, informal help-seeking, instructional activities, altering goals, and lowering performance aspirations. It is important to note that several studies reported more than one type of help-seeking source as presented in Table 8. The majority of studies emphasized formal help-seeking strategies (41.8%) and informal help-seeking strategies (41.8%), followed by instrumental activities (14.5%), and altering goals (1.8%). None of the studies included in this review reported lowering performance aspirations as a means to support help-seeking.

Table 8

Types of Help-Seeking Strategies Reported in Studies (According to Karabenick & Knapp, 1991)

Type	(n)	Studies
Formal Help-seeking	23	Algharaibeh (2020); Alvarado-Alcantar et al. (2018); Amador & Amador (2017); Bannier (2007); Butler et al. (2021); Çakiroglu & Öztürk (2017); Chao et al. (2018); Cheng & Tsai ((2011); Cheng et al. (2013); Er et al. (2015); Giblin & Stefaniak (2021); Giblin et al. (2021); Gleeson et al. (2019); Hao et al. (2016, 2017); Kitsantas & Chow (2007); Lee et al. (2014); Lee et al. (2021); Linney (2017); Mahasneh et al. (2012); Taplin et al. (2001); Vanslambrouck et al. (2019); Whipp & Lorentz (2009)
Informal Help-seeking	23	Al Hashimi (2019); Algharaibeh (2020); Amador & Amador (2017); Barbour et al. (2012); Butler et al. (2021); Çakiroglu & Öztürk (2017), Chao et al. (2018); Cheng & Tsai (2011); Cheng et al. (2013); Daley et al. (2016); Ding & Er (2018); Giblin & Stefaniak (2021); Giblin et al. (2021); Gleeson et al. (2019); Hao et al. (2016, 2017); Kitsantas & Chow (2007); Lee et al. (2014); Linney (2017); Mahasneh et al. (2012); Mundia et al. (2016); Taplin et al. (2001); Vanslambrouck et al. (2019)
Instrumental Activities	8	Al Hashimi (2019); Astatke (2018); Gleeson et al. (2019); Huet et al. (2011); Lee et al. (2021); Roll et al. (2014); Schworm & Gruber (2012); Whipp & Lorentz (2009)
Altering Goals	1	Lee et al. (2021)
Lowering Performance Aspirations	0	-

Note. Studies reported multiple types of help-seeking strategies. N > 36.

Several studies reported students' expressing their preference for seeking help from formal and informal sources (Koc & Liu, 2016; Reeves & Sperling, 2015). While a majority of studies reported students seeking traditional formal and informal help-seeking sources as described in Table 1, a few studies specifically noted the importance and need for instructors to take an active role in supporting their students' help-seeking abilities. In their study examining students' experiences in online learning environments in their first semester at college, Brown et al. (2013) noted that instructors can take an intentional role in helping their students seek help. They shared that instructors could support students by referring at-risk students to specific help sources.

Of the 36 studies included in this review, eight mentioned the use of instrumental activities to support help-seeking. Several studies recommended that additional studies exploring help-seeking in different instructional contexts were needed (Gleeson et al., 2019; Lee et al., 2021; Roll et al., 2014; Schworm & Gruber, 2012). Al Hashimi (2019) noted that time is a limitation in many help-seeking studies. Most of the studies included in this review occur within the confines of a semester. This was also recognized by several other researchers who recommended that educators' understanding of the use and prevalence of help-seeking could benefit from longitudinal studies to determine how students' help-seeking behaviors change over an extended period (Ding & Er, 2018; Giblin et al., 2021; Kitsantas & Chow, 2007; Lee et al., 2021).

Al Hashimi (2019) employed a *recycled* teaching format by integrating student-generated instructions, materials, and peer feedback. This promoted active learning in the classroom and integrated help-seeking as an instrumental construct within the course. Huet et al. (2011) found a positive relationship between students' mastery of goals and their perceptions of help-seeking in an interactive learning environment. Their findings revealed that high mastery goals were related to high perception of a threat to a learner's autonomy but not to the use of help. Lee et al. (2021) explored how students' help-seeking behaviors predicted their academic performance in asynchronous online discussions. They recommended that help-seeking behaviors could be further supported if instructors integrated instructional prompts to encourage students to engage in help-seeking strategies rather than answering specific questions posed by the students regarding the assignments. These recommendations also support Schworm and Gruber's (2012) suggestions to integrate instructional prompts to elicit students' elaboration during learning activities. Furthermore, these prompts could also be used to build upon recommendations by Yeh et al. (2019) to leverage students' goal orientations to specific help-seeking strategies.

Several studies suggested future research is needed to explore instructors' perspectives related to help-seeking (Er et al., 2015; Koc & Liu, 2016). In their study exploring help-seeking strategies used by students in K–12 environments, Alvarado-Alcantar et al. (2018) recommended that teachers be provided professional development opportunities to assist them with facilitating help-seeking strategies in their class activities. Giblin and Stefaniak (2021) recommended that additional studies be conducted to examine how students' age and experience impact their decision-making processes when selecting help sources.

Discussion
A Link Between Academic Achievement, Motivation, and Help-Seeking

Help-seeking strategies have been statistically linked to academic achievement as an intermediate variable between motivation and GPA (Barnard et al., 2008; Dunn et al., 2014). In a study exploring first-year college students' help-seeking tendencies, Astatke (2018) found a

significant correlation between students' help-seeking behavior and academic achievement. They recommend that future research clarify factors that may contribute to gender differences between students' emotional intelligence, self-efficacy, and help-seeking behaviors. These recommendations further support other studies that have found a correlation between students' self-efficacy regarding digital literacy and help-seeking behaviors (i.e., Cheng & Tsai, 2011; Ding & Er, 2018; Kuo et al., 2014; Liu, 2017).

The majority of these correlational studies have been conducted through the dissemination of questionnaires to students. Butler et al. (2021) stressed the importance of expanding help-seeking studies to include additional courses and disciplines to better understand the nuances of instructor and student relationships. In addition to expanding studies to include additional courses, qualitative research designs could help researchers contextualize what instructor and student relationships look like in an online environment. It's expected that the relationship between the instructor and students plays an important role in keeping students motivated. This may also help gain a better understanding of how Karabenick and Knapp's (1991) help-seeking categories such as instrumental activities, altering goals, and lowering performance aspirations (Table 8) can be used in online settings.

Environmental Affordances Impacting Students' Online Help-Seeking Practices

Compared with traditional face-to-face learning environments where students can receive instant feedback, the online learning environment poses challenges to potential learners who are shy, excessively autonomous, or possess limited computer skills. Studies have found that students who exhibit confidence in digital technology and information literacy skills are more likely to engage in help-seeking activities in online learning environments (Ding & Er, 2018; Hong et al., 2021; Liu, 2017).

Online learning environments provide opportunities for instructors to leverage a variety of technological applications to facilitate and support students' help-seeking behaviors. While several help-seeking strategies that are used in online learning environments can also be used in traditional face-to-face classrooms, there are opportunities to promote learner presence in asynchronous online venues among students who may not be as willing to participate in face-to-face settings with their peers. Chao et al. (2018)'s exploration of the use of online discussion boards to support students' help-seeking behaviors revealed that students were more open to engaging in seeking help from additional sources depending on their level of familiarity with the help providers. They recommended future studies examine additional factors that may impact learner performance and their avoidance of particular help-seeking sources.

Online learning environments provide opportunities for instructors to expand on the research that has been done by looking at instrumental activities to support help-seeking. Instructors should frame help-seeking mechanisms based on learners' diverse temperaments and the majority of opportunities brought by technological developments (Giblin et al., 2021). Instructors can take a more active role in their students' help-seeking efforts by managing educational technologies to alleviate technological difficulties students may incur (Barbour et al., 2012; Mundia et al., 2016). Further exploration into how instructors can integrate activities that promote digital literacy within their courses as an instrumental activity is needed. By weaving activities into coursework that are centered around promoting help-seeking strategies, students may be better positioned to engage in adaptive help-seeking techniques.

A Need for Concentrated Efforts on Adaptive Help-Seeking
It is difficult to discern the extent to which the studies included in this review distinguished between executive or adaptive help-seeking strategies. Karabenick (2004) found that learners adopting instrumental help-seeking prefer formal sources of help, such as the instructor. Due to the limitations with only eight studies reporting the use of instrumental activities as help sources in online learning environments, it is difficult to make assumptions that Karabenick's (2004) position applies to online education. With more autonomy being placed on the learner in online education, additional studies are needed to explore whether their preferences for different help-seeking sources may vary based on their adoption of instrumental activities.

Nine studies included in this review addressed altering goals and instrumental activities to support students' help-seeking. By expanding on research that examines the role that instrumental activities may have on students' learning experience in an online environment, instructors can support students' familiarity with help-seeking sources, increase their self-efficacy with navigating digital environments and promote the autonomy of their learning. To benefit most from the learning experience, a student should therefore employ instrumental help-seeking strategies (Giblin & Stefaniak, 2017, Giblin et al., 2021; Lee et al., 2021; Roll et al., 2014).

Limitations

The purpose of this systematic review was to explore the types of help-seeking strategies used in online learning environments. It is important to note that this systematic review captured a subset of studies that have been published on help-seeking. Since this review only included studies published in the English language, there is a possibility that additional studies exploring the use of help-seeking strategies in online environments were omitted.

A second limitation was that our search parameters focused solely on empirical studies. While these studies have provided insight into the breadth of research that has been conducted on help-seeking strategies in online learning environments, conceptual and theoretical pieces may have offered additional insights into challenges learners experience when seeking help. These conceptual publications could provide additional guidance for future research studies.

Recommendations for Future Research
The majority of studies included in this systematic review used a survey design to identify themes associated with help-seeking in online environments. Many correlational studies that examine the relationship between variables like academic motivation, help-seeking, achievement, and self-regulation have been done to examine students' academic performance in online environments (AI Fadda, 2019; Astatke, 2018; Cheng & Tsai, 2011; Kitsantas & Chow, 2007). Research on help-seeking in online environments could greatly benefit from the addition of qualitative research studies, particularly those employing a case study research design. These types of studies would be able to provide depth into how and why students use certain help-seeking strategies compared to others. Furthermore, case studies would help to understand the unique circumstances relevant to different areas of study (i.e., engineering, communications, business, etc.).

We recommend that future studies include more personal information, especially learners' digital competencies, which has been referred to as a new help-seeking strategy (Cheng & Tsai, 2011; Cheng et al., 2013). What's more, other personal variables, including gender, major, transfer status, self-efficacy level, and learning beliefs, are suggested to be included when

we examine the overall pattern for online learners' help-seeking behaviors. Additionally, instructors' perceptions of help-seeking should be further studied as an independent variable that affects learners' help-seeking selection. For example, how instructors support and react to learners' help-seeking requests has been experimentally proved to be directly and positively related to learners' use of adaptive help-seeking strategies (Kozanitis et al., 2007). Instructors' self-efficacy beliefs and the use of self-regulatory strategies should also be considered when understanding learners' help-seeking behavior in online settings (White & Bembenutty, 2013). This systematic review focused on studies published on ERIC and PsycInfo with restrictions on language, theme, and originality. Future studies are suggested to include more databases for a more systematic representation of the help-seeking patterns in online settings.

Based on online learners' help-seeking preferences and frequencies mentioned in this systematic review, future studies are suggested to take into consideration their avoidant help-seeking behavior. The negative influence of previous help-seeking experience or help-seeking perceptions including threat and benefit, ease of use, and cost on online learners' actual help-seeking selection seems a new direction for future studies (Huet et al., 2011). As indicated in our results section, future studies are suggested to focus more on K–12 settings given the large number of K–12 online learners.

None of the studies included in this review were conducted during the COVID-19 pandemic. At the time this review was conducted, no publications appeared in our searches addressing help-seeking strategies for online learning during a pandemic. We anticipate that there may be a subset of studies that will be published over the next three years that may offer new insights regarding the influence that environmental factors may impose on learners' help-seeking strategies when engaged in emergency remote learning.

Conclusion

This study attempted to further our understanding of learners' help-seeking behavior in online learning environments. All peer-reviewed English journal articles addressing specific help-seeking strategies were abstracted for further analysis from two databases (i.e., ERIC and PsycInfo). Key words such as help-seeking, online learning, distance education, online education, and e-learning were employed to navigate the screening process. All healthcare papers, conceptual framework papers, and literature papers were excluded from our analysis. Papers that dealt with only the relationship between aspects of motivation and help-seeking strategies without mentioning specific help-seeking strategies were also excluded. All the steps ensured that the remaining 36 papers focused exclusively on the help-seeking strategies used in online settings.

Findings revealed researchers' increasing attention to online learners' help-seeking behavior in the past decade all over the world, especially for researchers in North America and Asia. Higher education was the focal point of help-seeking in our review. Researchers used mainly quantitative research methods to investigate the overall help-seeking pattern for learners in online educational settings. Most researchers employed questionnaires as their main data sources because of the conveniences in data distribution, collection, and analysis. However, as indicated in the limitations part, more subjective methods should be employed to support the use of questionnaires. Given that most of the studies in our review focused specifically on formal help-seeking and informal help-seeking, we purport that more studies are needed focusing on the psychological situation of online learners when they made decisions about lowering or changing their previous learning aspirations. Learners bring unique characteristics to complex learning

environments, which means more detailed contextual analyses of learners, instructors, and the learning environment are needed in future studies.

Online learning has been playing a significant role in contemporary society due to the great potential it boasts. It has greatly reduced the cost of learning, thus making learning more accessible and equitable for learners in economically deprived areas. It has also satisfied the diversified needs of learners separated by time, space, and learning habits. To better facilitate online learners' help-seeking needs with hopes of promoting learning outcomes, researchers should seriously pay attention to their help-seeking pattern. Therefore, our review yields both theoretical and practical implications for online education. It reaffirms that help-seeking, as an important self-regulation strategy, is especially important in online education (Karabenick, 2011). It also offers insights as to the overall help-seeking situation for online learners, indicating the directions for future studies.

For online instructors, they should try to familiarize learners with all the diverse help-seeking sources available, increase learners' self-efficacy with navigating digital environments, and promote learners' awareness of relatedness, autonomy, and competence of the learning process (Newman, 2002c). In this way, instructors can help frame an interaction-friendly help-seeking mechanism where learners are willing and eager to seek help whenever they encounter problems they cannot deal with. Online learners should bear in mind the notion that seeking help is by no means an act related to dependency. It is an effective self-regulated learning strategy to overcome academic barriers. They may make full use of the help-seeking sources available and more importantly, they should overcome their perceived embarrassment and threat followed by help-seeking.

Declarations

The authors declare no Conflicts of Interest
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