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Online Learner Success Dimensions and Factors: A Framework Development Through Systematic Review

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Abstract

In this systematic review we examined 188 articles from 2013 to 2024, to examine online learner success dimensions and factors. This review followed the DISCAR systematic review process and articles were searched in five databases, and screened using title, abstract, and full text by two researchers. Descriptive statistics, timeline, and qualitative themes were provided for learning context, journals published, research methodology, dimensions, and online learner success factors. Among the 188 articles, we analyzed publication patterns including year of publication, journals, context, research methodology, dimensions and factors related to online learner success. Focusing on four dimensions (learner, instructor, program and organization, and community) we identified a total of 30 success factors. The course and instructor related dimension was the most studied, followed by the learner dimension, and the program/organization dimension. There were 11 learner-related factors, 10 course and instructor-related factors, five program and organization related factors, and four community related factors. These factors will benefit researchers and online learning practitioners in designing and implementing online programs where learners are successful. Implications for online learners include that they actively manage their learning through readiness, self-regulation, engagement and help-seeking, while instructors and instructional designers create well-organized, accessible and engaging courses with timely communication and feedback. Administrators and communities can enhance online learner success by providing orientation, professional development, support services and providing a stable and encouraging home environment.

Keywords: online learner success, systematic review, online learning, framework development

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Review of Literature

Online course offerings have increased over the last decade, and online learning has opened doors for students who need the flexibility to attend remotely due to full-time employment and other commitments. It has also extended the reach to students who live far from campus and those seeking specialized courses that are not commonly available locally. In many cases, online courses are less expensive than in-person courses because of lower fees and savings on commuting expenses. However, online learning is often perceived as being of lower quality, and students frequently face challenges with engagement and course completion. As a result, online courses have experienced failure rates higher than those found in in-person courses. While research has been conducted on the factors that lead to online learner success, a review of this research is needed to provide a more complete description of online learner success factors.

Bruno and Leidecker (1984) defined critical success factors as "characteristics, conditions or variables that, when properly sustained, maintained, or managed, can have a significant impact on the success of a firm competing in a particular industry" (p. 24). In the educational context, critical success factors "assist the online stakeholder groups to be guided in their operation in order to achieve the institution's vision" (Cheawijindakarn et al., 2013, p. 61). Arulkadacham et al. (2021) discussed how learner success may be interpreted differently from different perspectives, including those of the learners, instructors and organizations. The purpose of this systematic review is to synthesize the research published between 2013 and 2024 using a multidimensional lens including learner, course and instructor, program and organization and community to identify key dimensions and factors associated with online learner success.

Systematic Reviews on Success Factors

Online learner success is a frequent focus of research but often researchers fail to define *success.* One challenge to defining success is that it can be contextually dependent and based on both the explicit and implicit goals of the course (Arulkadacham et al., 2021). Like Martin et al. (2020), for the purposes of this research, we defined success broadly "to encompass achieving the desired outcomes of the course" (p. 811). Borup et al.'s (2020) review of the literature found that outcomes are frequently categorized in terms of knowledge, skills, and dispositions "(what students should *know*, be able to *do,* and what they are *becoming*)" (p. 811). While dispositional or "becoming" outcomes are often overlooked due to their subjective nature, they can be especially important. For instance, pre-service teachers taking a course on technology integration can learn the course topics and demonstrate their ability to use technology and integrate it into instruction but if they do not believe that technology integrated pedagogy can benefit student learning they are unlikely to actually apply their learning into their classrooms--the ultimate goal of the course (Ertmer et al., 2012).

Prior research has examined success factors in online, elearning and distance learning across various contexts (Barclay et al., 2018; Bhuasiri et al., 2012; Selim, 2007). Systematic reviews have investigated student success factors in online or elearning environments. Cheawjindakarn et al. (2013) reviewed 19 studies published between 2000-2012 and identified the following five categories of factors: institutional management, learning environment, instructional design, services support, and

course evaluation. Asalla et al. (2017) reviewed 54 journal articles published between 2006 and 2016 to examine critical success factors for elearning in higher education and identified 17 key critical success factors. They found that information technology (IT) infrastructure or the learning management system (LMS) was the most critical success factor, followed by e-learning tools and e-learning models.

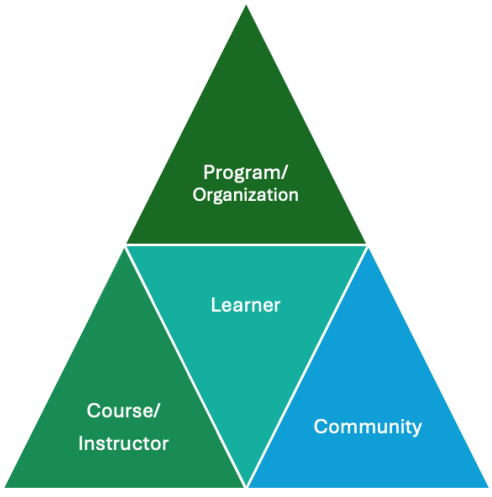
Arulkadacham et al. (2021) conducted a systematic review from 11 studies published between 2009 and 2021 and focus group study to identify predictors of student success in online courses. They identified 29 unique predictors of student success in eight categories: engagement, student characteristics, attitude towards learning and technology, academic history, psychological attributes, course structure, instructional design, and social presence. Muljana and Luo (2019) examined factors influencing student retention in online learning through a systematic review of 40 studies published between 2010 and 2018. They identified institutional support, program difficulty, promotion of a sense of belonging, facilitation of learning, course design, student behavioral characteristics, and demographic variables along with other personal variables as critical factors contributing to retention. Although a few systematic reviews exist, there is a need to examine online learner success from a multidimensional perspective to more comprehensively identify key success factors.

Dimensions of Online Learning

Building on the framework of online learning research themes proposed by Martin et al. (2020), which includes, learner, course and instructor, and organization dimensions, in this framework we extended the model by adding program and community as additional dimensions of online learning. Figure 1 presents a visual representation of the online learner success dimensions.

Figure 1

Online Learner Success Dimensions



Learner

This dimension focuses on the online learner who engages in learning within a digital setting which includes hybrid, blended, online education which is a subaspect of what Zawacki-Richter and

Jung (2023) refers to as open, distance and digital education (ODDE). In the review by Martin et al. (2020), the learner dimension encompassed learner characteristics, learner outcomes, and learner engagement. Learner characteristics are defined as "various measures of learners' psychological, behavioral nature, and attitudes toward everything related to learning" (Nakayama & Santiago, 2012, p. 1745). Specific to the online learning context, Martin et al. (2020) categorized online learner characteristics to demographic, academic, cognitive, affective, self-regulation and motivational characteristics. For instance, the same flexibility that has drawn many learners to enroll in online courses, also requires learners to exercise high levels of self-regulation and independent learning skills and habits. In fact, Roblyer et al. (2007) argued that online learners' ability to be successful in online courses "appears to depend more on motivation, self-direction, or the ability to take responsibility for individual learning" than their ability to learn the course material (p. 11).

Learner outcomes are described as clearly defined statements describing the outcomes learners should achieve after completing a course or program (Martin et al., 2020). Common learner outcomes include dropout, course completion, retention, and learner success. Online learner engagement is defined as "the productive cognitive, affective, and behavioral energy that a learner exerts interacting with others and learning materials and/or through learning activities and experiences in online learning environments (Martin & Borup, 2022). Researchers have examined learner engagement in online contexts through interaction, participation, community, collaboration, communication, involvement and presence.

Course and Instructor

This dimension focuses on both the course offered online and the instructor who teaches it. In Martin et al.'s (2020) review, the course and instructor dimension focused on instructor characteristics, course design and development, course facilitation, course assessment, course evaluation and quality assurance, and course technologies. Instructor characteristics address instructors' experience, satisfaction and roles in online courses. Course design and development refer to the processes used to develop the online courses and meet online learners' needs. Course facilitation emphasizes the effective delivery of the online course, while course assessment examines how learners are assessed in the online course. Course evaluation and quality assurance focus on assessing the overall effectiveness of the course, and course technologies highlight the various applications and tools that support online learning. Faza and Lestari's (2025) review of 121 articles found that technologies such as generative AI and collaborative platforms could improve performance, motivation, and engagement. Instructors should also adapt their support based on learner needs and abilities (Rose et al., 2015).

Program and Organization

The program and organization dimension focuses on the administrative and support structures provided by the program and/or organization that extend beyond and across courses. Learners who are new to online learning "need to learn how to learn online" (Lowes & Lin, 2015, p. 18). While course instructors can help, teaching both the course content and effective online learning strategies can prove overwhelming (Borup & Stimson, 2019). As a result, online programs have long provided orientations for online learners that set clear expectations and provide strategies for successfully meeting those standards (Scagnoli, 2001). Research has shown that such orientations can improve

online learners' readiness and confidence (Liu, 2019; Moon, 2025). Programs and organizations can also provide support to learners throughout their time in program and across courses. For instance, programs and organizations can provide centers where online learners can turn for support (Lehan et al., 2018; Lehan et al., 2020). Learners can also be provided with a mentor or success coach who proactively develops relationships with learners, provides emotional and psychological support, helps them to develop online learning skills, and advocates for their needs (Andersen & West, 2021). Similarly, institutions can facilitate peer mentoring programs (Goodrich, 2021).

The program and organization can also indirectly impact online student success by helping to ensure that courses are designed and delivered in a consistent manner—responsibilities often contracted to online program managers with varying degrees of success (Springer, 2018; Sun & Turner, 2022). They can also help to ensure that instructors and coaches are prepared for the challenges of learning online (Leary et al., 2020).

Community

The community dimension focuses on the personal and professional environments in which students live, work, and learn that can be determining factors in both their decision to enroll and success in online courses. These are the communities in which the learner belongs to independent of their enrollment in their online coursework. Actors within these communities commonly have long—even life-long—relationships with the learner (Borup et al., 2020). As a result, while they may not have an understanding of learning online, they have a more holistic understanding of the learner's needs. Parents play a particularly important role in supporting their children' s online learning (Oviatt et al., 2018). Even in higher education parental and family support and resources can be a determining factor in learners' ability to engage online (Brubacher & Silinda, 2021; Gao et al., 2021). In fact, emotional and tangible family support can positively impact middle aged (aged 50-64) and older adults' (over the age of 65) e-learning efforts (Chu, 2010). Alternatively, Samra et al. (2021) explained that family demands can negatively impact performance if online learners fail to "create boundaries with family members and set clear expectations of what they need," adding that this may require "negotiating and renegotiating support at times of greater need" (p. 95). Online learners are also more likely to complete online coursework when they receive financial support from employers (Lenio, 2021).

Purpose of the Study and Research Questions

Several factors influence the success of online learning relating to various dimensions such as learner, course, community, program/organization. Although a few reviews have been conducted in the past, there remains a need for a recent comprehensive review that focuses on learner success in online learning contexts. The purpose of the systematic review is to examine the literature on online learner success from 2013 to 2024 from a multidimensional perspective, focusing on learner, course and instructor, program and organization, and community dimensions to identify key factors associated with online learner success. The systematic review addressed the following research questions.

1. What are the publication patterns of studies examining online learner success (publication trend, journals, research methods, learning context)?

2. What are the dimensions and factors contributing to the success of online learners as identified in the existing research?

Methods

This review followed the DISCAR systematic review process (Martin, 2025), which involves (a) designing the review, (b) setting inclusion and exclusion criteria, (c) selecting data sources, search strategies, and screening criteria, (d) extracting data from primary studies to address research questions, and (e) analyzing and synthesizing data to report findings. In addition, we used the Preferred Reporting Items for Systematic Reviews and Methods (PRISMA) guidelines to conduct the systematic review on online learning success factors and dimensions.

Inclusion/exclusion criteria

Based on the focus of the review, we established the inclusion and exclusion criteria outlined in Table 1. These criteria were applied during both the search and screening phases. Criteria, such as publication date, type, and language, were set during the search process, whereas others were used during screening. Articles failing to meet any inclusion criteria were excluded. To ensure study quality, we included only peer-reviewed articles and required empirical articles to have a clearly defined "methods" section.

Table 1

Inclusion/Exclusion Criteria

Criteria	Inclusion	Exclusion
Publication date	From Jan 2013 until May 2024	Before 2013 or Published after May 2024
Publication type	Scholarly articles of original research from peer-reviewed journals	Book chapters, technical reports, dissertations, or proceedings
Article focus	Articles focused primarily on online learner success	Articles that did not have online learner success as the primary focus
Research method and results	An identifiable method and results section describing how the empirical study was conducted and the findings. Quantitative, qualitative and mixed-methods were included.	Reviews of other articles, opinion, discussion papers or conceptual articles
Language	Journal articles written in English	Other languages than English were not included

Data Sources and Search Strategies

Five databases including ProQuest Education Database, Academic Search Complete, APA PsychInfo, Education Research Complete and ERIC were used in this review. Searches were conducted in two phases: the ProQuest yielded 1224 results, and the remaining four databases yielded 403 results, for a combined total of 1627 articles.

The following search string was used to conduct the search,

(abstract("online learner success") OR title("online learner success") OR abstract("online student success") OR title("online student success"))

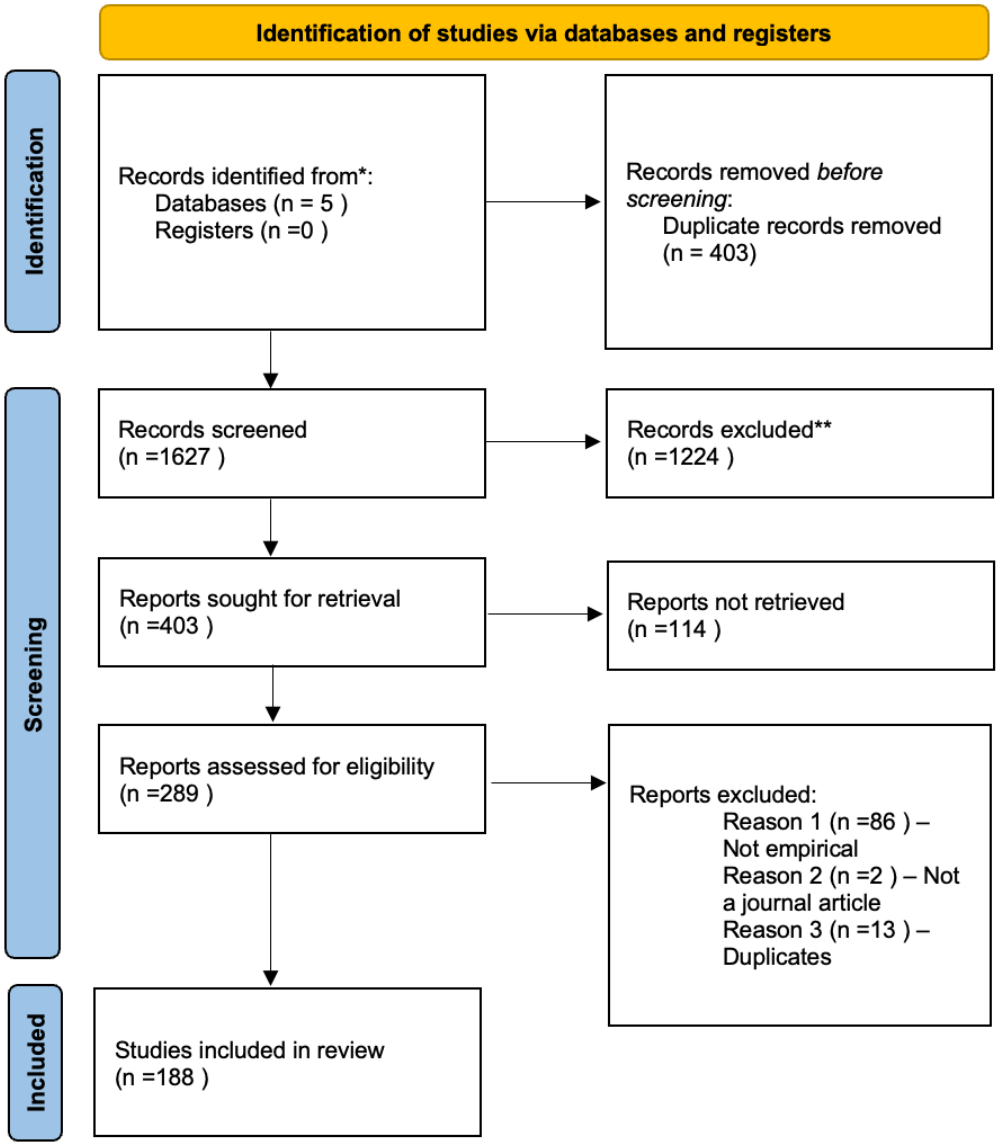
Screening Process

The review followed the PRISMA guidelines proposed by the Ottawa Methods Center for reporting items for systematic reviews and meta-analyses (Moher et al., 2009; Page et al., 2021). The PRISMA flow diagram (Figure 1) illustrates the process flow, and the number of articles reviewed at each stage of the review process, including identification, screening, eligibility, and inclusion.

After removing 403 duplicate records that were identified by two researchers by the title, the initial search resulted in 1627 articles, which records were exported as RIS file into Zotero. After title screening, 403 studies were identified as focusing on online learner success, but we were unable to obtain 114 records and 289 were screened. During abstract screening, additional studies were excluded because they were not empirical (86 studies), were not journal articles (2 studies) or were duplicates (13 studies). This resulted in 188 studies being included for full text review. During screening, articles were put into three categories, yes, maybe and no by two researchers who met periodically to discuss the screening results. The "maybe" articles were reviewed by both researchers before a decision was made.

Figure 2

Process flow using PRISMA flow diagram



Data Extraction

The research team consisted of two researchers who had expertise in educational technology, online learning, and systematic review research methodology. Both researchers were involved in screening and iterative coding using both inductive and deductive methods. Google sheets was used for both screening and coding. Coding was conducted in Google sheets by creating columns for year, journal, dimensions, factors, context, and research design. Year and journal publication data was extracted from Zotero into the codebook.

Codebook is included in Appendix A. The researchers met periodically during the process to discuss questions and resolve any discrepancies. Coding occurred in two cycles. In the first round of coding, data was extracted for context, methodology, dimension and success factors by both researchers. Success factors were inductively coded. In the second round of coding, the success factors were reviewed once again by both researchers and were grouped into 30 categories. Disagreements were refined through discussion during the synchronous meetings.

Data Analysis

Descriptive statistics, including frequencies and percentages were generated for learning context, journals published, research methodology, dimensions, and online learner success factors. In addition, a timeline chart was created to illustrate publication trend by years.

Results

In this section, we first share publication patterns. We then summarize the success factors for each dimension. This systematic review presents the findings of online learner success dimensions and factors from 188 studies. Across the four dimensions, a total of 30 success factors were identified. There were 11 learner-related factors, 10 course and instructor-related factors, five program and organization related factors, and four community related factors.

Publication Patterns

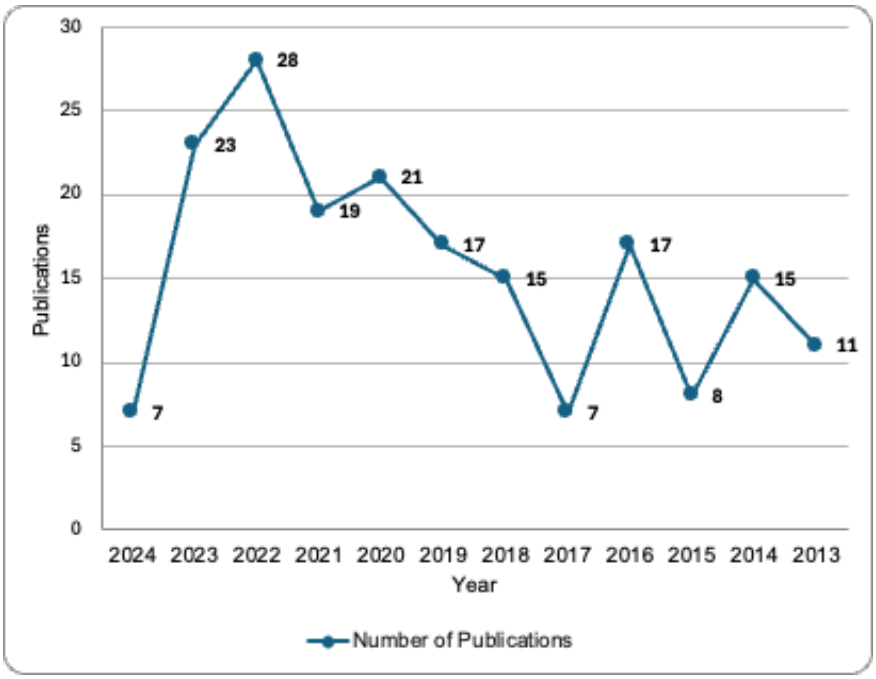
We examined the publication trends, journals of publication, research design and learning context as part of the publication patterns for studies on online learner success examined in this review.

Publication Trends

The year 2022 had the highest number with 28 publications, followed by 2023 with 23 publications. Data for 2024 did not represent a full year because the search was conducted in May. Overall, the trend shows a steady increase in research on online learner success, with brief declines in 2015 and 2017. The years 2023 and 2024 show particularly high levels of research activity, which may be attributed to the increased reliance on online learning during and following the COVID-19 pandemic.

Figure 3

Trends of Publications by Year



Journals

The top five journals that published highest number of studies on online learner success in this review were *Online Learning Journal* (n=13), *International Review of Research on Online and Distributed Learning* (n=8), *Online Journal of Distance Education Administration* (n=7), *Journal of Educators Online* (n=7), and *American Journal of Distance Education* (n=5).

Research Design

Of the studies reviewed, 135 were quantitative (71.81%), 29 were qualitative (15.43%) and 24 employed mixed or multimethod designs (12.77%).

Learning Context

Of the 188 reviewed articles, 160 studies (85.11%) were conducted in the higher education context, 19 studies (10.10%) were conducted in K12 settings, and eight studies (4.26%) in continuing education. One study was conducted across both higher education and K12 settings.

Success Factors

Table 2 summarizes the frequencies of studies across each dimension. The learner and course and instructor were the most studied dimensions, followed by the program/organization when examining online learner success. There were very few studies on the community dimension.

Table 2

Frequency and Percentage of Online Learner Success Studies based on Dimensions

Dimension	Frequency	Percentage
Learner	76	40.43%
Course and Instructor	76	40.43%
Program/Organization	30	15.96%
Community	6	3.19%

Learner

Within the learner dimension, multiple success factors have been examined in research. These include learner readiness, personal and environmental factors, cognitive factors, self-regulation, time management, time on task and learner effort, motivational, self-efficacy, social and emotional factors, and technology skills and use.

Learner Readiness

Learner readiness are essential learner attributes and conditions that enable them to be successful in online courses. Readiness could be assessed through a learner needs or readiness assessment to better understand the learners' needs and requirements (Latheef, 2021; Tainsh, 2023). Students' general lack of readiness was laid bare during the Covid-19 pandemic when students had to rapidly pivot to remote learning and highlighted the importance of which can inform targeted advisement strategies and course orientations. For instance, using insights from corporate onboarding, Latheef (2021) conducted a mixed methods study that found a combination of an online learner readiness self-assessment and targeted preview materials help to set realistic expectations and primed students for success.

Personal and Environmental Factors

Understanding learners' background characteristics is important for promoting learner success. Environmental characteristics can be identified by requesting the students to complete a biographical questionnaire before or at the beginning of the course. These may include items such as location, life pressures, and how they juggle online learning with daily life, work commitments, and study environment (Du et al., 2022; Goad et al., 2021). For instance, Goad et al. (2021) research that included 821 online learners in higher education found a relationship between course completion and hours worked outside of school and organization and study environment.

Cognitive Factors

Cognitive factors reflect learners' intellectual abilities and academic preparedness that influence their capacity to succeed in the online course. These include factors such as learner's self-reported GPA, academic expectations, stage of cognitive development based on age and class standing as well as skills related to memory, comprehension, learning strategies, reading rate and recall (Guidry, 2013; Liu, 2023).

Self-Regulation

Self-regulation refers to learners' ability to manage their learning process by setting goals, monitoring progress to achieve academic success. This factor has been widely examined in online learning research. Studies have focused on goal setting, self-monitoring using performance progress tools, grit, self-directed learning, all of which help learners manage distractions, persist, and remain organized (Feldman-Maggor et al., 2022; Price et al., 2021). Primary and secondary students tend to have low self-regulation abilities and in higher education there is a self-regulation skill gap between undergraduate and graduate students (Tseng et al., 2019).

Time Management

Time management skills are critical for online learners to be successful as it influences how students plan and allocate time to complete the various tasks in the online course. This includes the use of time-management tools, and these skills influence student study habits and overall academic performance (Baker et al., 2019; Feldman-Maggor et al., 2022; McLeod, 2019). Baker et al.'s (2019) found that these skills can be developed when students are provided opportunities to practice them, leading to higher performance, but that these skills can also quickly atrophy if students stop their efforts to develop and use time management skills.

Engagement Level

Learner engagement and participation levels are important indicators of learners' current performance and course success. Engagement can be measured through indicators such as students' interaction frequency, time on task, login patterns, duration of participation, interaction with course materials, time spent on assignments and early detection of students' academic performance (Chen, 2023; Xu, 2023). Research has also worked to identify minimal engagement thresholds for success. For instance, Pazzagilia et al. (2016) large study at the high school level found that students who spent at least 1.5 hours per week on task largely passed the course and students who engaged for two or more hours per week had significantly better course outcomes than those students with less engagement.

Motivational Factors

Student motivation is a critical determinant for online learner success as it influences students' willingness to invest effort in the online course activities. Studies have examined forms of motivation such as autonomous motivation, motivational beliefs, and academic motivation (Basila, 2014; Newhouse & Cerniak, 2016).

Learner Self-Efficacy

Self-efficacy refers to a learner's belief in their ability to complete the various tasks required to succeed in online courses. In online learning, self-efficacy plays an important part as learners must navigate learning management systems, manage learning dependently. Research has examined various forms of self-efficacy, including computer self-efficacy and digital self-efficacy as essential to succeed in the online course (Bahçekapili & Karaman, 2020; Tseng et al., 2019). Successful experiences on assignments and in courses can help to develop learners' self-efficacy (Odabas & Kahramanoglu, 2023). Azizi et al. (2022) research added that learners' development of computer self-efficacy can alleviate their e-learning anxiety.

Emotional Factors

Learner's emotional well-being can play a significant role in shaping learners' experiences and outcomes in online environments. This includes factors such as anxiety, coping strategies, and aspects of emotional health (Breneiser et al., 2018; Idrizi et al., 2021). Online learning may intensify emotional challenges due to factors such as isolation, self-directed learning and technology-related stress. However, there can also be some emotional benefits for learning online. For instance, compared to learning in in-person environments. Idrizi et al. (2021) found an inverse relationship between performance and neuroticism, or students' degree of "instability, impulse control, and anxiety" (p. 209). However, their research also suggested that learning online may help to reduce social pressure and anxiety experienced by students with high neuroticism. This may help to explain why some, especially those in primary schools, have long turned to online learning to avoid bullying and other negative social situations (Beck et al., 2023; Beran & Li, 2007).

Social Factors

Social factors play an important role in supporting learning success in online courses by fostering a sense of belonging and connectedness. Social belonging, social skills, sense of connection with peers, need for affiliation have also been found to support learners to be successful in online courses (Seiver & Troja, 2014).

Technology Factors

Technology factors are critical contributors to online learner success and it includes both learners' access and proficiency with digital devices. Technology related factors include students' technological skills, intention to use technology (Kaur & Gopal, 2022), use of handheld devices to complete homework, digital access (Gravelle et al., 2024), and typing speed/accuracy (Geiger et al., 2014), all of which contribute to online learner success. These factors have long been recognized and Hillman et al. (1994) explained that success in online courses is highly dependent on learners' ability to effectively navigate and interact with technology.

Course and Instructor

Within the course and instructor dimension, several success factors related to course attributes of and instructional activities within the online course have been examined in prior research. These include course design and organization, course materials, instructional approaches, course activities and assessment, accessibility factors, cultural considerations, instructor characteristics, instructor presence and communication, course technology, and course support.

Course Design and Organization

Course design and organization play a central role in supporting online learner success by providing a coherent and purposeful learning structure. This factor includes thoughtful course design, alignment of learning outcomes, sequencing of learning objectives, alignment of instructional resources, and effective use of navigation tools (Aydogdu & Güyer, 2019; Mshayisa & Ivala, 2022; Ren, 2023).

Course Material

Course materials are a critical component of online learner success, as they serve as the primary means through which content is delivered in online environments. This includes teaching materials, online resources, instructional material quality, instructor created videos which have shown

to support learner engagement and understanding (McGuinness & Vlachopoulos, 2019; Sari et al., 2022).

Instructional Approaches

Instructional approaches are the various strategies that are included in the online course and plays a significant role in shaping learner engagement and achievement. Effective instructional approaches include authentic learning, project-based learning, gamification, adoption of pedagogical roles, active learning, concise lectures, just-in time teaching (Bailey et al., 2017; Zheng et al., 2020).

Course Activities and Assessment

Course activities and assessments are central to facilitating learner participation and achievement. These include varied activities and assessments, such as self-assessments, well-structured asynchronous discussions, online simulations, collaborative projects, quizzing and pre-exam quizzes, as well as formative, timely, and personalized feedback (Bognár et al., 2021; Tainsh, 2023). Jacobi's (2017) qualitative research found that well-designed collaborative activities can make students' learning feel more relevant. Zheng et al. (2020) hierarchical linear modeling and content analysis using student-, instructor-, and course-level data in online high-school English language and literacy courses found that project-based learning and high-level knowledge activities were beneficial to learning outcomes. However, these types of activities actually resulted in lower performance for online credit recovery students. As a result, when designing course activities and assessments, student preferences and abilities should be considered.

Accessibility Factors

Accessibility factors are critical to ensure that all learners including those with disabilities can fully participate and succeed in the online course. Learners with disabilities have different needs when taking online courses. Providing appropriate accommodations and accessible course design is essential for supporting their success (Betts et al., 2013; Blieck et al., 2019). However, Chatman et al. (2019) stressed that accessibility needs to be matched with best practices if it is to lead to online learner success.

Cultural Considerations

This factor involves recognizing cultural variables and providing culturally responsive and adaptive instruction to support diverse learners (Gómez-Rey et al., 2016; Newberry & DeLuca, 2014). By addressing cultural differences, instructors can create online courses that are effective for all students.

Instructor Characteristics

Instructor characteristics are key determinants of learner success in online courses and shape the quality of instruction and overall course effectiveness. This includes factors such as faculty expertise, faculty professional training, technology proficiency, instructional commitment, flexibility, rapport, and instructor longevity (Glazier, 2016). Welch et al. (2015) stressed the importance of teacher dispositions and beliefs, stressing that "dispositions manifest into actions and behaviours in the classroom affecting not only their performance as an educator, but also the performance of their students" (p. 7).

Instructor Presence and Communication

Instructor presence and communication are critical factors in supporting learner engagement. This includes instructor involvement, time spent interacting with students, social interactions, teaching presence, emotional presence, online social comfort, student-instructor interactions, sense of community, and overall communication practices (Rosser-Majors et al., 2022; Van Wart, 2020). Developing presence is a skill that can be developed by instructors. For instance, Rosser-Majors et al. (2022) designed and provided seven self-paced modules on establishing instructor presence that proved helpful in instructors' efforts to engage students and increase student success.

Course Technology

Course technology is the backbone for online teaching and learning. This encompasses technology infrastructure, interactive platforms, asynchronous discussion tools, synchronous meeting systems for live group meetings using audio and video, and secure examination systems (Alanazi et al., 2020).

Course Support

Course support encompasses a broad range of resources to help online learners successfully achieve learning outcomes. Support mechanisms include teacher support, teaching assistant support, technical support, peer support, individualized support, virtual online learning communities, aligned instructional support, instructional incentives and policies, program and legal support (Linden et al., 2022).

Program and Organization

For the Program and Organization dimension, multiple factors have been studied in research. This includes student orientation, faculty professional development, student support services, institutional sense of community and belonging and tutoring.

Student Orientation

Learning online can prove challenging in unique ways. As a result, orientation sessions and support modules can help students to develop technical skills, writing skills, and research abilities (Townley et al., 2023). Programs and institutions can also help students to develop motivational and self-regulation abilities.

Faculty Professional Development

Successful online teaching requires different competencies and skills than in-person instruction (Leasure et al., 2020). As a result, professional development provided to online instructors can positively impact their facilitation efforts, and in turn student success (Scarpena et al., 2018) and satisfaction (Kane et al., 2015). This professional development can be offered as courses or faculty-to-faculty mentoring (Zweig, 2016; Drouin et al., 2015).

Student Support Services

Institutions can provide students with both academic and non-academic support structures. Research has highlighted the importance of administrative and academic support including library services to students' academic success (Skelcher et al., 2020). Alkaabi et al. (2022) and Skelcher et al.

(2020) also highlighted the importance of aid and services such as mental health support that can have an impact on student retention.

Institutional Sense of Community and Belonging

Just as students can develop a sense of community within an individual course, students can develop a sense of community to their institution (Skelcher et al., 2020). This is often developed through students' interactions with others at the institutional level such as advisors and service providers who help to nurture a culture of caring, encouragement, and support (Stone & O'Shea, 2019).

Tutoring

Institutions and programs can provide learners with tutoring that extends the support that an online instructor can provide (Devers et al., 2022; Maré & Mutezo, 2021). This tutoring can assist students with general skills such as academic writing or more course specific content support. Tutors can also be more cost effective and available than course instructors (Linden et al., 2022).

Community

For the Community Dimension, research focused on two communities--professional and personal. While these communities do not form a part of the online course or program, they can act as both power sources that fuel persistence and success in online learning. Inversely, they can also act as loads that produce stress and demands that can be determining factors in their failure to achieve their academic goals (González & Blackford, 2022). González and Blackford (2022) warned that "excessive 'loads' or demands' that are not coupled with the required 'resources' or 'power' will hinder engagement and consequently performance (learning/grade)" (p. 3). Despite their importance, relatively few studies mentioned the importance of the environment and community outside of the course and program.

Inter-role Harmony

In addition to their responsibilities as a student, online learners fulfill multiple outside roles in their family, social groups, and employment. As online learners engage in learning activities, they may experience conflict and tension in their other roles that require them to rebalance the time and effort they put into their studies with their other responsibilities. High inter-role conflict can even cause the online learner to step away from their studies altogether. However, those students with autonomy and control in the time, place, pace, and path of their role fulfillment in and beyond the course, are more likely to achieve inter-role harmony because they can better act to balance their learning, professional, and personal responsibilities as their demands in each area ebbs and flows (González & Blackford, 2022).

Emotional Support and Encouragement

Online learners are separated by space and often time from others in their course. This can leave them feeling isolated with low affective engagement. Actors with an online learner's personal and professional communities often share the same physical space and can provide important affective support such as encouragement, understanding, and connection (Curtis & Werth, 2015; Lee et al., 2013).

Positive and Stable Home Environment

While learning online, students require an environment that is conducive to learning. For instance, more than 10% of student participants in Gravelle et al. (2024) shared that learning online proved more challenging due to a noisy home. One student shared, "I can't find a quiet place to sit and learn" (p. 455).

Assistance with Family Responsibilities

Many parents with children in their care, turn to online learning for the flexibility it provides. However, they often require assistance with family responsibilities and childcare so that they can focus on their studies. For instance, one woman in Stone and O'Shea (2019) expressed gratitude for "a husband who helps out with dinner on assignment due nights, so [she] can keep studying" (p. 104).

Online Learner Success Framework

The dimensions and factors identified from the systematic review of research is included as a visual in Figure 4.

Figure 4

Online Learner Success Framework

Learner	**Course and Instructor**
• learner readiness • personal and environmental factors • cognitive factors • self-regulation • time management • engagement level • motivational factors • learner self-efficacy • emotional factors • social factors • technology factors	• course design and organization • course material • instructional approaches • course activities and assessment • accessibility factors • cultural considerations • instructor characteristics • instructor presence and communication • course technology • course support
Program and Organization	**Community**
• student orientation • faculty professional development • student support services • institutional sense of community and belonging • tutoring	• inter-role harmony • emotional support and encouragement • positive and stable home environment • assistance with family responsibilities

Discussion

Success Dimensions and Factors

The course and instructor dimension, and the learner dimension was examined in 40.43% of studies, and the program/organization dimension was examined in 15.96% of studies when studying online learner success. Each of these three dimensions is critical to online learner success. The community dimension, in contrast, was only identified in 3.19% of the articles. This disparity does not suggest that community is less important, rather, community-related factors are often less observable and more difficult to study, especially in higher education. Despite these challenges, there is a clear need for additional research examining community influences through the lens of online learner success. Across the four dimensions, this review identified 11 learner-related factors, 10 course and instructor-related factors, five program and organization related factors, and four community related factors, resulting in a total of 30 success factors that contribute to online learner success.

Comparison with Prior Systematic Reviews

Cheawjindakarn et al. (2013) reviewed 19 studies and identified five factors, institutional management, learning environment, instructional design, services support and course evaluation. These factors largely correspond to course or program level dimensions which were also examined in this review. Arulkadacham et al.'s (2021) review identified eight categories of factors, including engagement, student characteristics, attitude towards learning and technology, academic history, psychological attributes, course structure, instructional design and social presence. These categories reflect a combination of learner and course-related dimensions. Mujjana and Luo (2019) in their review identified institutional support, the level of difficulty of the programs, promotion of a sense of belonging, facilitation of learning, course design, student behavioral characteristics, and demographic variables along with other personal variables as critical factors. These factors emphasized learner, course, and program level dimensions. While these prior reviews highlighted important aspects of online learner success, the present review identified a broader and more comprehensive set of factors within each dimension, offering a more multidimensional perspective on online learner success.

Differences Between Higher Education Learner Success and K-12 Learner Success

Skills such as academic self-efficacy, time management and organizational skills, and metacognitive and self-regulation skills (Abernathy, 2020; Basila, 2014; Lee et al., 2013; Leow et al., 2024)—skills that are often lacking in younger learners. As a result, younger learners tend to require more support than older and more developed learners. For instance, parents or other guardians also have care responsibilities over their children and adolescents and play a critical role in enrolling both in students' enrollment in online courses and their success in those courses (Krishnan, 2023; Sallaffie et al., 2021). However, often parents lack the time, ability, or needed role construction to provide students with adequate support and/or supervision (Hoover-Dempsey et al., 2005). As a result, at the K-12 level, learners taking one or two online courses are increasingly completing those courses at their local brick-and-mortar school in a classroom with an on-site facilitator or mentor who supervises and supports their learning (Borup, 2018). As learners mature into and through adulthood, they no longer require supervision and their learning becomes more independent. Parents can still play an important role at the university level, they have fewer responsibilities than parents of children or adolescents and other support actors such as friends, spouses and partners, and employers become important support sources. The outside demands on their time can also change. For instance, Stone and O'Shea (2019) examined mothers with caring responsibilities and found that they require flexible

and relevant learning responsibilities. Christenson et al. (2012) summarized that "both the individual and the context matter" (p. vi). Those designing, facilitating, and supporting online learning need to carefully consider learners' abilities and needs and provide them with the adequate support they require to be successful.

Limitations

This review has some methodological limitations. First, only five databases that the authors had access to were used in this review, which may have resulted in the omission of some studies. Second, all the articles that were reviewed were published in English, excluding potentially valuable research reported in other languages. Third, the selection of keywords used may have limited the retrieval of additional relevant studies. Adding synonyms of the keywords included could have extended the search and resulted in inclusion of additional relevant studies. Fourth, only two reviewers participated in the coding process. Although the reviewers collaborated closely and met biweekly to discuss the coding decisions, there could be coder bias involved. Finally, a separate quality assessment was not conducted in this review.

Implications and Future Directions

A key contribution of this systematic review is the development of a multidimensional framework for understanding online learner success. This framework identified critical factors across the learner, course and instructor, program and organization, and community dimensions. It benefits online students, instructors, instructional designers and administrators in making sure these factors are included in online courses that are being developed. The framework serves as a holistic lens for students to succeed beyond just academic performance. Online students need to recognize the importance of being ready to participate in online learning, managing their time, staying motivated and engaging with both the course and their peers and instructors. By developing self-regulation, leveraging technology use and seeking social and emotional support when needed, students can take ownership of their learning and be successful in online courses. Online instructors and instructional designers have to be intentional in the design and facilitation of courses, prioritize clear organization, accessible and culturally relevant materials, well-aligned activities and assessments, while maintaining consistent presence through timely communication and feedback. Administrators who lead programs and organizations should invest in effective student orientation, ongoing faculty professional development, intentionally fostering a sense of community and offering various support services including tutoring. For the community, implications include encouraging the learner and providing emotional support, offering a conducive home environment, and assisting with family responsibilities. Implications for policy include the need for institutions to establish clear guidelines for quality online courses.

The proposed framework with the dimensions and associated factors provides a foundation for future research and can be used by scholars to further examine, refine and validate determinants of online learner success in diverse contexts.

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Appendix A - Codebook

Codebook Items	Description
Article Title	Publication title
Publication Year	Year of publication
Journal name	Journal name
Learning Context	K-12 or Higher Ed
Research Methodology	Quantitative, Qualitative or Mixed-Method
Dimensions	Learner, Course and Instructor, Program and Community, Organization
Success Factors	Open-coded in first round, and then closed coded into 30 categories of success factors

Appendix B - List of articles included in review

https://docs.google.com/document/d/15P8FKnKDmunrc1X-sVllWFOWd1SS-V5B/edit?pli=1