



Professional development in digital teaching and learning

IO5 The Design of Course Modules to Enhance Students' Readiness for Digital Learning

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1.0 Introduction

The experience during the COVID-19 pandemic has taught us that learning how to learn online is now a crucial life skill and cannot be left to chance. Readiness for online learning, irrespective of the delivery mode—hybrid, blended or fully online—is essential if students are to get the most out of their studies. Moreover, an early investment in student readiness for online learning is likely to contribute to successful completion and reap longer term benefits supporting lifelong learners to thrive in today’s rapidly changing digital world. The key point is that this world is becoming increasingly complex, digitally mediated and requires an investment in a learning society. For a learner to successfully and continually navigate their way through a plethora of existing and new digital tools and online experiences, they need a well-developed and nuanced learning compass. Prior to the COVID crisis it was well established that online learners have particular needs throughout the study lifecycle and that early support and development opportunities are crucial to their success.

This report documents how the literature on student readiness for online learning informed the response to the COVID crisis. It presents the findings of a systematic literature review focused on the concept of student readiness. The review is based on an analysis of international research on the rapid pivot to online learning appearing in major publication databases during the height of the pandemic. This topic is of great interest, with new publications emerging almost every month following the cut off period of the study (e.g., Cheon, Cheng & Cho, 2021; Power et al., 2022). The review is therefore an assessment of where this literature can be situated, and what lessons can be gleaned from it at the time in which the work was undertaken. Wherever possible the research team has continued to engage with the literature and several publications which fall outside of the review parameters are woven into the discussion in later sections to contextualise the findings in the wider field. The report starts with a brief overview of the pre-existing literature on student readiness for online learning before introducing the specific research questions and describing the search methodology. Several key findings arising from the analysis of literature are presented, followed by a discussion of the need to add a stronger contextual understanding to the concept as well as greater focus on the learner voice and the meaning of readiness from this perspective. The report concludes with an annotated bibliography of the 40 publications identified through the research, which includes an assessment of the methodological quality of the work, how the conception of student readiness is defined and other critical insights.

This study is part of the DigiTeL Pro Strategic Partnership funded by the European Commission’s Extraordinary Erasmus+ Coronavirus Response Grant. The project led by the European Association of Distance Teaching Universities (EADTU) has seven university partners: KU Leuven (Belgium); Fédération Interuniversitaire de l’enseignement à Distance (France); Università Telematica Internazionale (Italy); Open Universiteit (The Netherlands); TU Delft (The Netherlands); Universitat Oberta de Catalunya (Spain); and Dublin City University (Ireland). This report is authored by the DCU team. The project team brings together a group of experienced online educators well-known for their research and innovation in new models of digital education. The main purpose of this report is to learn from the COVID-19 experience in order to add to the collective new knowledge arising from the research community, with a strong emphasis on the student online learning experience.

2.0 Early research on the COVID learning experience

The COVID-19 crisis adversely affected traditional education around the world; millions of students and educators were abruptly pivoted into online delivery. The term ‘online delivery’ is used in this context to denote the range of digitally mediated strategies used to support and provide for student learning during this period. Following on from this rapid pivot a multitude of literature emerged focused on reporting the teaching and learning experience. The COVID-19 Higher Education Literature Database (CHELD) (Butler-Henderson et al., 2021) illustrates the vast number of publications produced since March 2020 reporting on the response to the COVID-19 crisis. Indeed, Version 2 of the CHELD database contains 738 journal articles with a COVID-related learning and teaching focus up until 30th June 2021. Further evidence of the academic and research community’s response to documenting the impact of the pandemic is apparent through the number of COVID-related special issue journals published over this period. Although not fully comprehensive as more special issue journals are still being published, Table 1 lists 20 published before May 1st 2022, with embedded hyperlinks, that have relevance to the present study.

Table 1: Journals with special COVID-related issues in field of education

Journal	Special Issue Focus
Asian Journal of Distance Education	A collection of COVID responses from around the Asia region
British Journal of Educational Technology	Online and blended learning: contexts and conditions for education in an emergency
Canadian Journal of Learning and Technology	Systemic perspectives on new alignments during COVID-19: Digital challenges and opportunities
Distance Education	Research trends in online distance learning during the COVID-19 pandemic
Education and Information Technologies	Special Issue on Education, IT, and the COVID-19 pandemic
Education Sciences	Online and Distance Learning during Lockdown Times: COVID-19 Stories–Series 1
Educational Media International	Education in times of crises: The dilemmas of digital teaching and learning in primary and secondary schools during the COVID-19 pandemic
Educational Technology Research and Development	Shifting to Digital: Informing the Rapid Development, Deployment, and Future of Teaching and Learning
Information and Learning Sciences	Evidence-based and pragmatic online teaching and learning approaches: A response to emergency transitions to remote online education in K-12, higher education, and librarianship
International Journal of Educational Development	Education response to covid-19: evidence from global school closure, solutions for continued learning and school reopening

<u>Irish Educational Studies</u>	COVID-19 and Education: Positioning the Pandemic; Facing the Future
<u>Journal of Computing Assisted Language Learning</u>	Adoption of learning technologies in times of pandemic crisis
<u>Journal of Interactive Media in Education</u>	Learning from lockdown: Special collection
<u>Journal of Open, Flexible and Distance Learning</u>	Online teaching and learning: COVID-19 Special Issue
<u>Journal of Technology and Teacher Education</u>	Preservice and inservice professional development during the COVID-19 pandemic
<u>Online Learning Journal</u>	Special Issue on the COVID-19 emergency Transition to remote learning
<u>Open Learning</u>	Open voices on COVID-19
<u>Student Success</u>	Student success in a global pandemic
<u>Sustainability</u>	Impact of Covid-19 on Students and Teachers in Higher Education Institutions. Proposals and Policies for Improvement
<u>Technology, Pedagogy and Education</u>	Covid-19 and the role of technology and pedagogy on school education during a pandemic
<u>The All Ireland Journal of Teaching and Learning in Higher Education</u>	The Impact of COVID-19 on Irish Higher Education
<u>The Electronic Journal of e-Learning</u>	COVID-19 and the Future of e-Learning

In terms of the student learning experience, the following three publications provide unique insights and are worthy of further consideration as they provide an overview and synthesis of the literature. The first is Khan's (2021) early rapid review of articles which reported on the experience of higher education at the outset of the pandemic in 2020. The study set out: (i) to summarise the impact of COVID-19 as reported in available studies; (ii) to investigate the measures which were put in place following the lockdown of educational institutions; and (iii) to assess gaps in knowledge and understanding and identify possible future research directions. Key findings include the need for more research on lesser developed countries and the need to hear more of the student voice in research and associated decision-making. Khan (2021) also placed a particular focus on the psychological issues such as stress and anxiety associated with the move to online delivery and the wider COVID-19 context, noting that the topic needs to feature more prominently in research moving forward.

The second review, conducted by Bond et al. (2021), drew from a considerably larger sample of publications and included those from the latter half of 2020. This review is framed by three well-crafted research questions: (i) Where, when and by whom has research on teaching and learning in higher education during the COVID-19 pandemic been published? (ii) What are the characteristics of, methods used, and topics studied in teaching and learning research in higher education during the COVID-19 pandemic?(iii) What technology has been used during emergency remote teaching in higher education? Findings raise concerns about the quality and future value of research conducted during the pandemic. Methodological and theoretical

weaknesses led Bond et al. (2021) to conclude that emergency remote teaching resulted in much “emergency remote research”. This finding was also echoed by the team in the National Institute for Digital Learning (NIDL) last year when producing its collection of COVID-related “good reads” published over 2020 (NIDL, 2022). They noted the tendency to reinvent the ‘online learning’ wheel in early COVID-related publications as the pool of educators engaged in online learning research expanded considerably during the pandemic.

Finally, the third publication is a technical report by the Joint Research Committee (JRC) in which Di Pietro et al. (2020) contextualise the impact of COVID-19 on education by reflecting on existing and new research. The authors conclude that education will likely suffer setbacks as a result of the pandemic given the lack of expertise and readiness for online education among educators (Di Pietro et al., 2020). The report also gives consideration to how the cognitive and emotional skills of disadvantaged students are more likely to be seriously impacted by the COVID-19 pandemic both in the short and long term, which is similar to some of the psychological issues highlighted by Khan’s (2021) early rapid review.

These reviews provide an important synthesis of teaching and learning research conducted during the early stages of the pandemic. Thus, they help to frame the present study. The review presented in this report provides a specific focus by delving deeper into one aspect of teaching and learning, namely student readiness for online learning. The aim of the study is to provide researchers and educators with a resource that offers insights into the student perspective and highlights key lessons learned in terms of research, policy and practice as we look to develop new models and practices beyond the pandemic.

3.0 What do we already know about student readiness?

Student readiness for online learning is not a new area of research. Indeed, well before the COVID-19 crisis there was a considerable amount of literature published in this area. In this section, we briefly summarise some of the key learnings from the student readiness literature drawing on a handful of seminal publications. It is widely acknowledged that the concept of student readiness for online learning was first conceived almost 25 years ago by Warner, Christie and Choy (1998). While on the surface the term itself is easily understood, student readiness has been considered through different lenses and perspectives over the years. Consequently, there remains a lack of consensus on its components and dimensions (Martin, Stamper & Flowers, 2020). Less than a decade ago, Farid (2014) conducted a systematic review of tools used to assess students’ readiness for online learning. Notably, the study identified only 10 student readiness tools that had been developed during the 20 year period from 1990 to 2010 (Farid, 2014). However, among the 10 instruments, 31 constructs were examined and the highest number of common constructs in these tools was seven, demonstrating the varying foci of the studies during that period. Interestingly, Farid (2014) also points out that universities, when investigating readiness among their students, tended to develop their own instruments as opposed to using pre-existing ones.

Since then, a number of other instruments have emerged, again with varying foci. Hung et al. (2010) originally developed the Online Learning Readiness Scale (OLRS) for use with a group of Taiwanese students with a focus on the dimensions of: 1) computer/internet self-efficacy, 2) online communication self-efficacy, 3) self-directed learning, 4) learner control, and 5) motivation for learning. Prior to the COVID-19 crisis, the OLRS was one of the scales most

widely cited in the literature. In comparison, Yu and Richardson (2015) developed the Student Online Learning Readiness (SOLR) scale which breaks the construct down into four main facets: 1) social competencies with the instructor, 2) communication competencies, 3) social competencies with classmates, and 4) technical competencies. The emphasis on social competencies with classmates is unique and reflects the focus in the Community of Inquiry (CoI) Framework on the importance of social presence in online learning environments (Castellanos-Reyes, 2020).

The dimensions of online learning readiness encompassed by the instrument developed by Joosten and Cusatis (2020) also differ slightly. They measure the six facets of: 1) online work skills, 2) social technology familiarity, 3) online learning efficacy, 4) self-directedness, 5) organisation skills, and 6) socialisation. This is a notable study for three reasons. Firstly, the work was published in a highly ranked journal at the height of the COVID crisis but data was collected before the pandemic. Secondly, the publication provides a contemporary synthesis of the literature on student online learning readiness. Thirdly, the study reports significant findings for minorities and for students with disabilities, which is an area highly relevant to the pandemic experience and concerns about equity, diversity and inclusion.

Most recently, in an attempt to consolidate common constructs examined by previous instruments, Martin, Stamper and Flowers (2020) developed the Student Readiness for Online Learning (SROL) scale measuring four dimensions of: 1) online student attributes, 2) time management, 3) technical, and 4) communication competencies. This study is once again noteworthy as the research was conducted prior to the COVID-19 crisis but published at a time during the pandemic when student readiness for online learning was particularly topical. More to the point, the study provides a contemporary synthesis of the literature that should have been easily accessible to those doing research on student readiness during the COVID-19 pandemic. It offers a summary of nine existing instruments designed to measure student readiness for online learning, which is reproduced below in Table 2. Additionally, Martin, Stamper and Flowers (2020) describe eight student online readiness instruments developed by various universities to help illustrate the unpublished and unvalidated nature of many of the tools being claimed to measure this construct.

Table 2: Summary of existing online student readiness survey instruments (Martin, Stamper & Flowers, 2020)

Name of Instrument	Authors/Year	Number of Survey Items	Constructs Measured	Validated by
Distance Learning Survey	Mattice and Dixon (1999)	25 items	Student readiness, student assess to/use of technology, and student interest in distance education, demographic questions	Muse (2003); Osborn (2001)
Readiness for Online Learning (ROL)	McVay (2000/2001, 2003)	13 items	Self-management of learning (time management and self-discipline), comfort with e-learning (technical skills and use of discussion boards)	Smith, Murphy, and Mahoney (2003); Smith (2005)
E-learner Readiness Self-assessment	Watkins, Leigh, and Triner (2004)	27 items	Technology access, online relationships, motivation, online video/audio, internet discussions, importance to success	Watkins, Leigh, and Triner (2004)
Test of Online Learning Success (TOOLS)	Kerr, Rynearson, and Kerr (2006)	45 items	Computer skills, independent learning and dependent learning preferences, need for online learning, academic skills	Kerr, Rynearson, and Kerr (2006)
Online Learning Readiness Survey (OLRS)	Dray and Miskiewicz (2007)	40 items	Learner characteristics, technology capabilities, online skills, self-management	Dray and Miskiewicz, (2007)
Online Learning Readiness Scales (OLRS)	Hung, Chou, Chen, and Own (2010)	18 items	Computer/internet self-efficacy, online communication self-efficacy, self-directed learning, learner control, motivation for learning	Hung, Chou, Chen, and Own (2010)
Questionnaire for Predicting Online Learning Achievement	Bernard, Brauer, Abrimi and Surkes (2004)	38 items	Confidence in prerequisite skills, self-direction and initiative, desire for interaction beliefs about distance education	Hall (2011)
Student Online Learning Readiness (SOLR)	Yu and Richardson (2015)	20 items	Social competencies with the instructor, communication competencies, social competencies with classmates, and technical competencies)	Yu and Richardson, (2015); Yu (2018)
Online Learning Self-Efficacy scale (OLSES)	Zimmerman and Kulikowich (2016)	22 items	Learning in the online environment, time management, technology use	Zimmerman and Kulikowich, (2016)

Each of the publications and measures in Table 2 add to the body of knowledge around the concept of student readiness. In theory, this literature should help to inform how researchers and higher education institutions responded to the rapid pivot to online learning. However, Hung et al. (2010) make a crucial point in their seminal study about the need to continuously examine and re-examine the concept of online learning readiness as the delivery mode continues to change and evolve. Thus, a basic premise underpinning this literature review is that student online learning readiness is not a fixed concept and needs to be understood in terms of the educational context and changing nature of the tools and delivery platforms being used for the provision of online delivery. As we know, the COVID-19 pandemic has been the impetus for the widespread uptake of online education as well as new and on-going

developments to online teaching and learning approaches and related infrastructure. Given identified links between online learning readiness and academic success (Davies & Graff 2005; Joosten & Cusastis, 2020; Lee & Choi, 2013; Yu, 2018), the investigation of student readiness during this period has the potential to inform future conceptions of readiness as well as the types of interventions and practices employed by higher education institutions to support and enhance the student online learning experience.

4.0 Framing research questions

Anchored in what is already known about student readiness for online learning, and the emerging literature reporting the COVID-19 experience, this study addresses the following research questions:

1. What research has been published reporting student readiness for online distance learning during the COVID crisis?
2. How strong is the “learner voice” in COVID-related research reporting on student readiness for online distance learning?
3. What lessons can be taken from the COVID-related literature on student readiness for new models of digital education?

5.0 Research design

In order to provide insights into the student online learning readiness research that has been conducted during the COVID-19 pandemic, a two pronged approach was adopted to identify the relevant literature. First, a systematic review of the literature published from 1 March 2020 to 31 August 2021 was conducted. The Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) guidelines were followed for this systematic review (Moher et al., 2009). Preliminary guidelines produced by Polanin, Maynard and Dell (2017) following their critique of research syntheses in the field of education were also taken into consideration, in particular, when reporting on the review methodology and eligibility criteria. Secondly, to account for publishing time-lags and the “rapidly changing nature of the research landscape” (Bond 2020, p. 195) the study crowdsourced recommendations from the academic community drawing in particular on the networks of our project partners. Individuals could share recommendations by completing a short online form.

5.1 Eligibility criteria

Publications were restricted to peer-reviewed empirical studies published during the 18 month period in the English language.

5.1.1. Types of participants

Only studies that focused on higher education students were included. Participant gender, race, age, and other demographic information were not subject to limitation. Studies focusing on teachers or students at other levels of education were excluded.

5.1.2. Types of study

All studies had to investigate the presence, related factors, antecedents, or effects of online readiness in the context of COVID-19. Studies focusing on other forms of readiness, or those conducted under alternative conditions, were excluded. Summary and review papers were excluded.

5.2 Search strategy

Two search strings were developed focusing on key phrases and their variations and using * for truncations (See Appendix A). While online readiness can be investigated through a variety of theoretical lenses (e.g. student engagement, student success, academic literacy), searches focused on publications that explicitly used the terms 'readiness' or 'preparedness' in the title or abstract. Incorporating the wider scope of online and digital readiness literature would have been difficult to delineate, resulting in an unmanageable and potentially incomplete sample with a large number of irrelevant results.

Table 3: Summary of inclusion and exclusion criteria

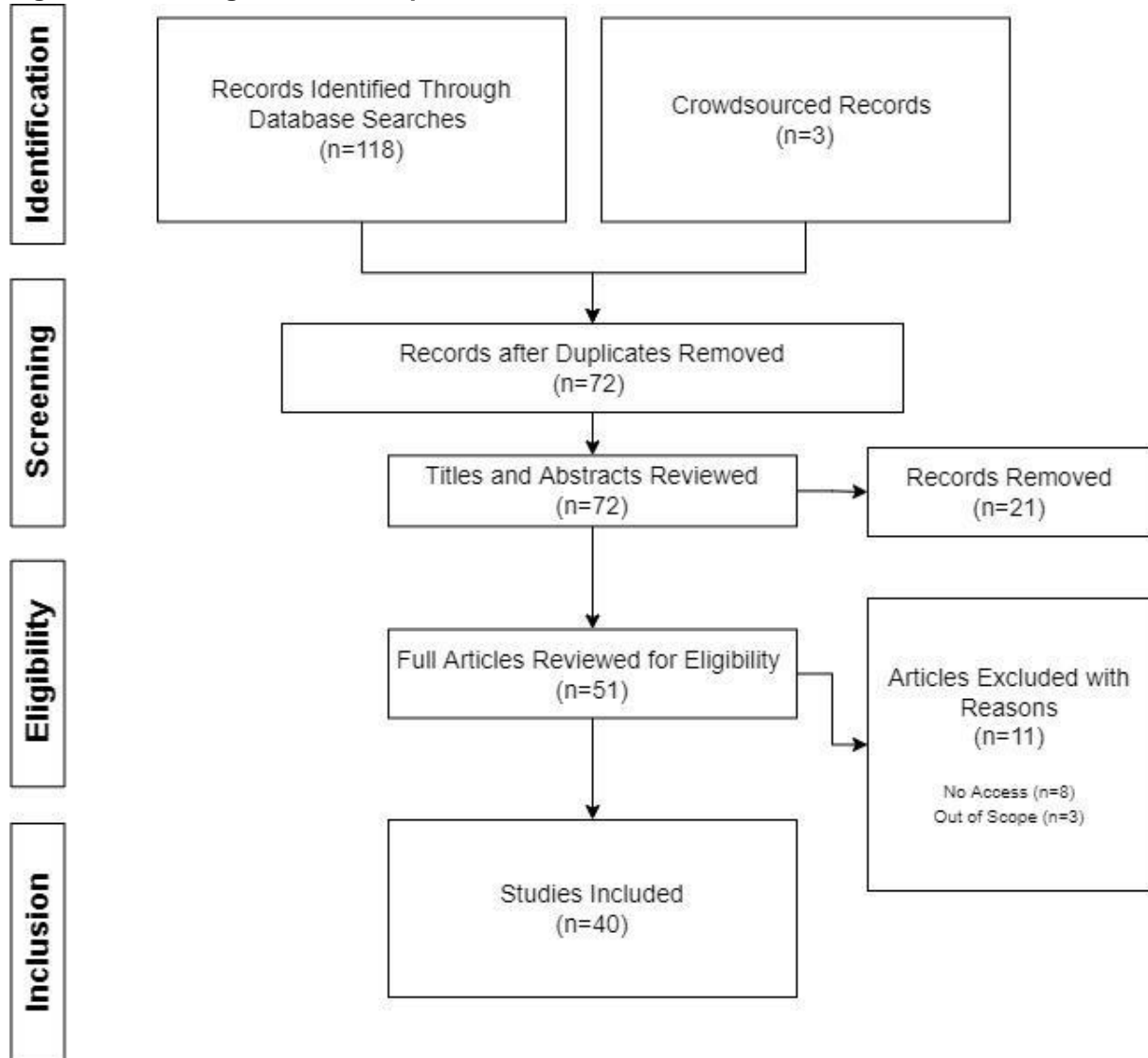
Inclusion Criteria	Exclusion Criteria
Investigates readiness or preparedness for digital/online learning	Investigates readiness (or related construct) for face-to-face learning
Investigates readiness or preparedness among students	Investigates readiness (or related construct) among teachers or institutions
Investigates readiness or preparedness in the context of Covid-19	Investigates readiness or preparedness outside of Covid-19 context
Higher education focus	Other education levels (e.g. second level, K-12)
Empirical papers, defined as those that analyse primary or secondary data	Theoretical, conceptual or review papers
Journal articles from January 2020 to August 2021	Journal articles prior to 2020
Conference proceedings from January 2020 to August 2021	Conference proceedings prior to 2020
Peer-reviewed	Non-peer reviewed

The platforms and databases searched were Scopus and Web of Science. These databases were chosen as they are considered well-suited to evidence synthesis (Gusenbauer & Haddaway, 2019). The CHELD V2 database was also searched for studies that met the inclusion criteria and to identify publications that were not duplicates of previous searches.

The initial search strategy resulted in 118 findings. Figure 1 shows the process flow involved in the screening of articles. Following the automatic removal of duplicates, the results were filtered by title and abstract. The entire texts of the remaining relevant publications were then reviewed for inclusion and exclusion using the criteria outlined above in Table 3.

In total, the systematic review yielded 40 empirical studies with a research focus on student online learning readiness during the COVID-19 pandemic (until September 2021). An annotated bibliography of these studies appears in Appendix B.

Figure 1: Flow diagram of review process



5.3 Data extraction

The following information was extracted from each included study using a data abstraction form: (1) country where study was conducted, (2) research methods, (3) subject discipline and sample size, (4) underpinning theoretical framework, if present, (5) dimensions of online/digital readiness investigated, (6) implications for practice, and (7) overall quality rating.

6.0 Key findings

6.1 Description of the sample

A brief descriptive analysis of the literature is initially provided to illustrate the breadth of the sample before progressing to a critical analysis that more directly addresses the research questions.

6.1.1. Geographic distribution

To determine the geographic distribution of the sample, studies were classified 1) by the country in which the study was conducted and 2) by the associated region. The majority of studies were conducted in the Asia-Pacific region (n=22), which accounted for 55% of the articles. Comparatively fewer studies were reported in North America or Africa (Table 4).

Table 4: Regional distribution

Region	n	%
Africa	1	2.5
Asia-Pacific	22	55.0
Europe	7	17.5
Middle East	6	15.0
Multiple	1	2.5
North America	3	7.5
	40	100

Furthermore, Table 5 shows that the publications were predominantly from developing and non-Western countries. This finding may limit the applicability of the research to contexts in more developed regions and countries due to important differences from cultural, economic, and social perspectives. Nevertheless, this published research is an important addition to many Western-centred academic discourses relating to COVID. As Khan (2021, p. 4) notes “research issues must be discovered all around the world, regardless of a country’s standing since this may give a different discussion and context to the argument on COVID-19’s influence on educational institutions”.

Table 5: Distribution by country

Country of Initiative	n	%
Bangladesh	2	5.0
Germany	2	5.0
Germany and the USA	1	2.5
Ghana	1	2.5
Hong Kong	1	2.5
India	2	5.0
Indonesia	8	20.0
Jordan	2	5.0
Malaysia	6	15.0
Pakistan	1	2.5
Philippines	2	5.0
Qatar	1	2.5

Saudi Arabia	3	7.5
Turkey	4	10.0
Ukraine	1	2.5
United States	3	7.5
	40	100

6.1.2. Research methods

The research methods used in the sample of publications were classified into quantitative, qualitative, and mixed methods. The studies were also categorised by the number of methods used and the type of data collection method. Table 6 illustrates that over two thirds of the studies adopted a quantitative method (70%), with a quarter adopting mixed methods. Qualitative methods account for the smallest portion, with just two studies identified using a purely qualitative methodology (5%). We return to this finding later in the report when reflecting on the need to strengthen the learner voice in research on student readiness.

Table 6: Methodology utilised

Type of Data	n	%
Both qualitative and quantitative	10	25.0
Qualitative	2	5.0
Quantitative	28	70.0
	40	

The majority of the studies used a single data collection method (85%) and none used more than two, as shown in Table 7. Online questionnaires were the most popular data collection method, utilised by over 92% of the studies, possibly due to lockdowns, the convenience of data collection and other COVID-19-related safety measures in place.

Table 7: Data collection method utilised

	Count	% (n=40)
Survey	37	92.5
Interview	6	15.0
Self-Study	1	2.5
Data logs or online posts	1	2.5
Secondary Data Analysis	2	5.0
	47	

Given the high proportion of survey based research, the sample of publications was also categorised by the instrument adopted for measuring online learning readiness. Table 8 demonstrates that the majority of studies developed their own bespoke instruments to measure online learning readiness as opposed to using pre-existing ones. This finding echoes

conclusions from the review conducted by Farid (2014) nearly a decade ago and the conclusion drawn by Bond et al. (2021) that the pandemic generated a lot of emergency remote research. Furthermore, among the studies that adopted pre-existing scales or instruments, the Online Learning Readiness Scale (OLRS) developed by Hung et al. (2010) was the instrument most commonly employed, as illustrated in Table 9.

Table 8: Instrument type

Instrument/ Scale	n	%
New	25	62.5
Existing	14	35.0
N/A	1	2.5
	40	100

Table 9: Pre-existing instruments adopted

Instrument	Author(s)	Used by
Online Learning Readiness Scale (OLRS)	Hung et al., 2010	7
The Scale of e-Learning Readiness	Yurdugül & Demir, 2017	2
Student Online Learning Readiness (SOLR)	Yu & Richardson, 2015	1
TOOLS: Test of Online Learning Success	Kerr et al., 2006	1
Combination of interaction, Internet self-efficacy, and self-regulation scales developed by other studies	Kuo et al., 2014	1
E-learning Competencies Scale	Parkes, et al, 2013; 2014	1
Readiness Learning Online Questionnaire	Penn State, 2020	1

6.1.3. Discipline

Table 10 shows that the sample of publications were largely cross-disciplinary, drawing on data from higher education students across multiple degree programmes (42.5%). Among the studies assessing specific disciplines, STEM subjects were the most researched (20%), followed by Health (12.5%) and Teacher Education (10%). Notably, only one study conducted research with student participants from Business.

Table 10: Discipline of study

Discipline	n	%
Business	1	2.5
Cross-disciplinary	17	42.5
Health	5	12.5
Humanities & Social Sciences	3	7.5
No indication of field of study	2	5.0
STEM	8	20.0
Teacher Education	4	10.0
	40	100.0

6.1.4 Sample Size

The publications were also categorised according to their sample size. Over 62% of the studies drew on samples of between 100 and 500 participants (Table 11). Given the millions of students learning online during the COVID-19 crisis, it is noteworthy that fewer than 10 publications had sample sizes larger than 500 participants. On the other hand and perhaps reflecting the dearth of qualitative studies, only 10% of the studies had samples of less than 50 participants.

Table 11: Sample size

Sample Size	n	%
0-10	1	2.5
10-50	3	7.5
50-100	2	5.0
100-500	25	62.5
500+	9	22.5
	40	100.0

6.2 Critical analysis of the sample

This section offers a critical analysis of the literature structured around the original research questions. It aims to identify where the literature studying online readiness could be advanced to generate further insights for educators and researchers whilst also illustrating where gaps remain.

1. *What research has been published reporting student readiness for online distance learning during the COVID crisis?*

Firstly, it is important to highlight that online readiness was conceptualised in different ways across the studies. Although pre-existing scales were adopted by 35% of the sample, little engagement with the underlying constructs was reported. In addition, most research accepted definitions used in prior study contexts without consideration of unique contextual elements

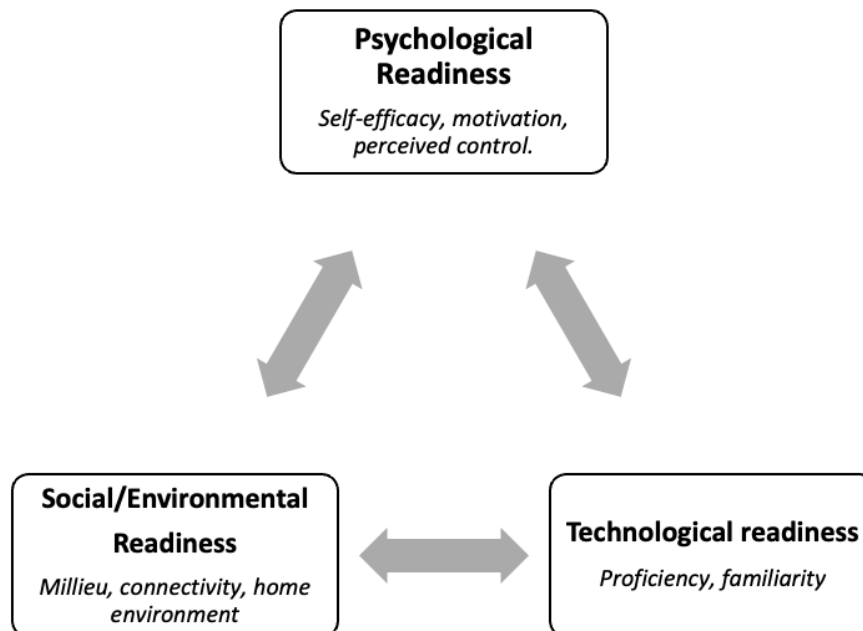
associated with COVID-19. Table 12 presents an interpretation and collation of the dimensions of online learning readiness investigated by the studies in our sample.

Table 12: Descriptive analysis of dimensions

Dimension	Description	n	%
Technology Proficiency	Perceived competence and confidence using technology and applications to perform course-related tasks online. Also termed computer and internet self-efficacy	25	62.5
Online Communication Self-Efficacy	Perceived competence and confidence communicating in an online environment	15	37.5
Self-directedness	Ability to manage and direct one's own learning	14	35.0
Learning Motivation	Intrinsic or extrinsic drivers	14	35.0
Learner Control	Autonomy over learning schedule/ sequence	12	30.0
Perceptions and Experience	Prior experiences and preconceptions of learning online.	12	30.0
Device Access and Connectivity	Access to Internet, Access to Devices for Learning	11	27.5
Not specified	No domains listed	6	15.0
Online Learning Efficacy	Belief that online learning can be as effective as traditional classroom learning.	5	12.5
Academic Skills	Perceived competency completing academic tasks irrespective of modality	4	10.0
Emotion	Attitudes or feelings toward learning online	3	7.5
Self-Regulation	Ability to understand and control one's learning environment	3	7.5
Online learning Self-Efficacy	Perceived competence and confidence learning online.	2	5.0
Organisation/ Time Management	Ability to manage time and workload / Ability to approach tasks in an organized and goal-oriented way	2	5.0
Social Technology Familiarity	Familiarity with social technologies or degree of familiarity based on frequency of performing tasks using a computer or mobile device	1	2.5
Home Environment	Access to quiet space to work	1	2.5
Social Competencies	Ability to evaluate social situations and determine what is expected or required. Relates to interactions with instructors and peers	1	2.5

The publications in the sample explored a range of ambiguously related factors; ‘technology proficiency’ was the most common dimension considered (62.5%), followed by ‘online communication self-efficacy’ (37.5%), ‘self-directedness’, and ‘learning motivation’ (35%). While many of the dimensions differ somewhat in their meaning it is possible to group them into wider categories or themes. For instance, dimensions such as motivation, control, and self-efficacy, are broadly ‘psychological’, while others, such as technology proficiency and familiarity, reflect the practical online work skills or competencies associated with online learning. A third theme reflects the social or environmental aspects of online learning and encompasses dimensions such as device access and connectivity and home environment. These three broad themes are represented in Figure 2.

Figure 2: Readiness...for what?



The issue for both researchers and practitioners is the lack of clarity as to whether these elements are facets of a single underlying dimension or reflect distinct constructs. At best all we can say is they measure what they measure, which is likely to encompass some dimensions of the evolving concept of student online learning readiness. In a COVID-19 context, particular challenges emerged which might not be captured in pre-existing measures. As acknowledged previously, many of the studies used Hung et al.’s (2010) scale to measure online learning readiness. However, Hung et al.’s (2010) work, while in pursuit of a measure to reflect a holistic conception of student readiness, was exploratory in nature and recognised that the dimensions were likely to evolve over time. This important point does not appear to have been recognised by the studies using this measure of student readiness.

Notably, studies with varying dimensions of readiness (e.g., Tang et al., 2021) demonstrate that some factor loadings/intercorrelations are modest, implying the construct is not necessarily unitary. If correlations between (for example) self-directedness and access to adequate technology are low, then it is questionable whether it is useful to refer to them both as facets of a single concept (OLR). Perhaps it is better to think of them as *two* elements, reflecting a) psychological and self-oriented, and b) social, resource-based, aspects. It is easy to imagine that in some cases, psychological/self-related aspects, relating to control, self-

regulation and motivation, might be a dominant issue concerning educators. Alternatively, in environments where students have limited experience learning online, discomfort with technology, including social elements, may be more inhibiting. In the COVID-19 context, where a rapid pivot to emergency instruction has occurred, availability of adequate technology and internet access may command significant attention, as evidenced by those studies arising from developing countries and the social contexts of inequality.

Moving forward there is a need for closer consideration of factor intercorrelation and factor analysis in quantitative research to determine the relevancy of distinguishing between different dimensions. There is also a need to consider different types of outcome or dependent variables in analyses. Only half of the studies identified adopted a theoretical framework and the absence of conceptualised links between readiness and measurement or consideration of some desired outcome is problematic, if the intention of research is to study such links. Learners must be ready to *do something* as readiness is not an end in and of itself, but an evolving process. Assessing whether students have sufficient levels of online learning readiness requires understanding what they are expected to be ready *for* and as this changes and evolves, their readiness will too. For example, readiness for online learning takes on a different meaning if the student learning experience is intentionally designed to promote high levels of interactivity as distinct from merely reading PDFs or passively watching recorded videos.

This is a crucial point that appears to be missing in much of the literature. Another missing aspect in the design of measures assessing student readiness is the potential to better harness institutional learning analytics along with incorporating outcome variables. For example, future research could include:

- Academic achievement-related variables - previous grades, current and future attainment, progression and completion rates, employability, and graduate destinations
- Socio-emotional-related variables - learner satisfaction, perceived wellbeing, positive emotionality, sense of engagement and institutional belonging, change in self-efficacy
- Technology engagement-related variables - frequency of accessing the learning management system, number of posts to discussion fora, use of online resources including the library

The importance of conducting research into these outcome variables more generally was highlighted during the pandemic. Discourses placed a focus on humanising teaching with technology and adopting a 'pedagogy of care' (Bali, 2015) as it is also referred. This focus derived from evidence that students' mental health and wellbeing declined during the pandemic (see Kohls et al., 2021). Further to this point, Joosten and Cusatis (2020) illustrate the importance of more targeted studies designed to understand the needs of minority students, including those with disabilities and learners from disadvantaged or marginalised backgrounds. Finally, better examining the relationship between online readiness and new and emerging variables might help to provide for a more nuanced conceptualisation of the concept of student readiness, whilst also potentially influencing and refining the development of practical pedagogical interventions.

2. How strong is the “learner voice” in COVID-related research reporting on student readiness for online distance learning?

A stark, though not unexpected, finding was the dominant use of cross-sectional survey methodologies. Only a small proportion of studies made use of qualitative data collection methods, such as interviews, online posts, or even open-ended survey questions (see Table 7). The corresponding dearth of qualitative data using interviews, student diaries and other more innovative data collection techniques raises questions about the depth and trustworthiness of the research, and arguably limits more nuanced insights into the nature of the student experience. The lack of qualitative methodologies may also be reflective of time-poor researchers unable to dedicate the necessary time and effort associated with conducting robust and well-designed qualitative studies. In assessing the strength of the learner voice across publications, no example of a “strong” study was identified, and the vast majority were rated “weak”, as shown in Table 13.

Table 13: Presence of student voice

Student Voice	n	%
Strong	0	0
Moderate	8	20.0
Weak	32	80.0
	40	100

This weakness makes it difficult to assess the practical utility of the literature. Almost 60% of the studies in the sample professed to have implications for practice, as reported in Table 14. However, it is questionable whether a literature so oriented towards cross-sectional surveys, incorporating so little of the student perspective can have the type of impact required to be useful for either educators or indeed students. We return to this crucial issue towards the end of the report.

Table 14: Stated implications for practice

Implications for Practice	n	%
No	10	25.0
Yes, both	12	30.0
Yes, policy	7	17.5
Yes, practice	11	27.5
	40	100.0

Although students are the primary focus of the studies in this sample, notably few of the publications adopt a more inclusive research design which actually asks the learners what dimensions they perceive to be the most important in relation to being ready to study online. Instead, the student is framed as the subject of research rather than being seen as an active partner who can contribute their own unique insights and help to triangulate findings and offer suggestions for future practice. Indeed, as Table 15 illustrates, of those studies with specific

recommendations only around a quarter focus on the student experience. The greatest attention is placed on institutions, which arguably reflects an inherently institutionally-centric approach to research on student readiness. This observation mirrors growing critique of the literature on student engagement where the concept is rarely positioned from a learner's perspective (Gourlay et al., 2021).

Table 15: Focus of any recommendations

Focus of Recommendations	n	% (n=30)
Institutions	19	63.3
Teachers	16	53.3
Government	8	26.7
Students	8	26.7
	51	100.0

3. What lessons can be taken from the COVID-related literature on student readiness for new models of digital education?

At the highest level, this literature contains some headline lessons for educators and researchers but presents limited practical applications. In rating the quality of research, the research team did so not in a pejorative sense, or to question the validity of research, but rather through asking whether the study would prove relevant for other researchers and practitioners, by displaying a level of coherence and quality through design and implementation.

Table 16: Quality of the research

Quality of Research	n	%
Fair	22	55.0
Good	6	15.0
Poor	12	30.0
Total	40	100

Given the gaps in the literature and critical observations about the sample of publications discussed previously, it is important to acknowledge that a small number of studies (n=6) were categorised as “good” by the reviewers (see Table 16). While a larger number of studies were categorised “poor”, due to limited relevance, unclear methodological approach, and/or incomplete analysis, the majority of studies (n=22) were categorised as “fair” based on the same criteria.

Table 17 reports the number of studies that are underpinned by an explicit theoretical framework. Almost half of the publications in the sample offer no theoretical framework and those that do were found to sometimes draw on constructs from the literature more generally. For example, Al-Nofaie (2020) adopts the seminal root metaphors of learning first proposed

by Sfard (1998) that were not intended to apply to the notion of student readiness. To put this finding in perspective, Bond et al. (2021) report following a systematic mapping review of 282 primary empirical studies with a COVID-19 higher education focus that only 10% adopted a theoretical framework. Hence their observation mentioned earlier concerning the prevalence of emergency remote research.

Table 17: Studies underpinned by theoretical framework

Underpinned by Theoretical Framework	n	%
No	19	47.5
Yes	21	52.5
	40	100.0

Unsurprisingly, a cross-tabulation by quality rating and theoretical underpinning (see Table 18) revealed that studies underpinned by a theoretical framework were rated as being of higher-quality than those without. Furthermore, although only a handful of the publications provide a detailed literature review to support their study, suggesting many authors were unfamiliar with the literature on student readiness. This last point is something we develop further in the next section.

Table 18: Cross-tabulation of quality rating by theoretical framework

Underpinned by Theoretical Framework	Poor	Fair	Good	n
No	9	8	2	19
Yes	3	14	4	21
Total	12	22	6	40

7.0 Learning from the “good” publications

To help summarise the key lessons that can be learned from this sample of COVID-19 related literature, this section focuses on the six publications that were rated as “good” by reviewers (see Table 19). The intention is to take a closer look at those studies which presented more theoretically anchored and in-depth data and perspectives on student readiness.

Table 19: Studies rated ‘good’ by reviewers

Bibliography reference	Full academic citation
2	Rafique, G. M., Mahmood, K., Warraich, N. F., & Rehman, S. U. (2021). Readiness for Online Learning during COVID-19 pandemic: A survey of Pakistani LIS students. <i>The Journal of Academic Librarianship</i> , 47(3), 102346.
3	Händel, M., Stephan, M., Gläser-Zikuda, M., Kopp, B., Bedenlier, S., & Ziegler, A. (2020). Digital readiness and its effects on higher education students’ socio-

	emotional perceptions in the context of the COVID-19 pandemic. <i>Journal of Research on Technology in Education</i> , 1-13.
14	Tang Y.M., Chen P.C., Law K.M.Y., Wu C.H., Lau. (2021). Comparative analysis of Student's live online learning readiness during the coronavirus (COVID-19) pandemic in the higher education sector. <i>Computers and Education</i> , 168.
18	Suliman, W., Abu-Moghli, F., Khalaf, I., Zumot, A., and Nabolsi, M. (2021). Experiences of nursing students under the unprecedented abrupt online learning format forced by the national curfew due to COVID-19: A qualitative research study. <i>Nurse Education Today</i> , 100, 1-6.
19	Cinar, M., Ekici, M., and Demir, O. (2021). Medication or band aid? Revisiting University Students' Readiness for Online Education. <i>Turkish Online Journal of Distance Education (TOJDE)</i> , 22(2), 176-191.
31	Latheef, Z.I., Robinson, R., & Smith, S. (2021). Realistic job preview as an alternative tool to improve student readiness for online learning. <i>Online Learning</i> , 25(2), 208-232.

Four of the studies report on quantitative research methods, one (Latheef et al., 2021) employed mixed methods, and one (Suliman et al., 2021) was qualitative in nature. Study contexts differed across this subsample, with two being European-based, two Asia-Pacific, and single studies in North America, and the Middle East. Four noteworthy features of these six studies are discussed in the following subsections.

7.1 Performing robust analysis

Two of the six studies (Händel et al., 2020, Tang et al., 2021) had more than 500 participants. These studies had reasonable sample sizes to test hypotheses, statistically analyse data, and report findings which were both cogent and valuable for further research and educational practices.

Tang et al. (2021) conducted a confirmatory factor analysis (CFA) using data from an array of Hong Kong-based institutions. A valuable aspect of the analysis was that the authors compared students at varying study levels - sub-degree, undergraduate and postgraduate. The latter cohort of students demonstrated higher levels of control and motivation although the effect sizes of these differences were modest. This comparison indicates that learners of different experiences may well differ in their readiness levels. It is also interesting to note that students' self-directedness differed modestly across the cohorts while there were no significant differences in comfort communicating online.

Rafique et al. (2021) also deploy a CFA with data collected from a sample of Pakistani students of library information systems (LIS). However, unlike Tang et al. (2021), the research team found that two of the dimensions of online learning readiness differed significantly by gender, with male students reporting higher levels of computer and internet self-efficacy and online communication self-efficacy. In addition, students at higher levels of study generally demonstrated greater levels of readiness, particularly regarding learner control and motivation, a finding that is comparable to Tang et al. (2021). This finding suggests that future research would benefit from not only considering the level of study but also previous output achievement data as a potential predictor of student readiness for online learning.

Both studies demonstrate strong, well-grounded quantitative analysis and compare diverse learners using established scales previously published in the literature. As such, they represent good cases of detailed and well-constructed methodological studies with a wider empirical focus.

7.2 Towards relational student readiness

The study by Händel et al. (2021) is a strong example of how readiness can be viewed relationally, within a wider frame of reference, rather than being divorced or abstracted from situational contexts. Contextualising the literature to a specific COVID-19 context, the study focuses on students' socio-emotional perceptions related to online distance learning and whether those perceptions depend on their readiness for online learning (Händel et al., 2021). Employing a cluster analysis approach, the researchers describe two groupings of learners, those who were ready for online learning and those who were not. Students' socio-emotional perceptions, that is stress and loneliness, differed significantly due to group membership, leading Händel et al. (2021) to conclude that:

Students who were ready for digital learning reported less tension, overload, worries, social, and emotional loneliness, but higher joy. Although these effects were of only small effect size, this indicates that students who are not ready for digital learning might not only suffer from lacking equipment and skills to participate in digital distance courses but also that they might suffer from higher stress and loneliness (p. 8).

An important note is that this study is cross-sectional, and therefore does not assess the strengths of relationships between constructs. That said, literature claiming causal relationships is highly problematic due to the conglomerate of covariates and the fundamental point that statistical significance does not infer cause. Nevertheless, the general association of readiness with an actionable and relevant construct such as socio-emotional aspects is an interesting line of research which should be further explored in future studies. General wellbeing, student satisfaction, sense of belonging, and positive emotion (hope, joy, happiness) are all possible variables for further exploration in this context. These dimensions further underscore the point that student readiness for online learning is relational to the context.

The crucial role that the situated context plays in online readiness is further illustrated in two more recent publications which fell outside the scope of the current review. Firstly, Gravett and Ajjawi (2021) argue that the related and much researched concept of belonging needs to be understood as situated practice. The authors propose a reframing of belonging in the post-COVID-19 era as situated, relational and processual. More to the point, this line of theorising recognises that traditional:

...conceptions fail to consider the impact of space, place, time or of a wider assemblage of non-human actors upon students' engagement, and they also omit a discussion of the multiplicity of experiences, values and connections that constitute belonging (Gravett and Ajjawi, 2021, p. 1390).

Secondly, an Irish study of student teachers published outside of the data collection period is also worthy of mention. Power et al. (2022) report a counter-intuitive finding where student readiness actually decreased over the COVID-19 pandemic, which challenges the thesis that maturity or increased online experience contributes to greater levels of perceived student

online readiness. They suggest that the pandemic experience resulted in a reassessment of each learner's own capabilities:

It is reasonable to assume that their rapid immersion in online learning spaces as a student prompted a re-evaluation of self-perceived competence or overall online readiness when confronted with advanced tasks across multiple platforms in an 'only digital' learning environment (Power et al., 2022, p. 12).

While other explanations could also exist, this relational line of research indicates that measures of online readiness would benefit from incorporating key contextual factors. It also highlights that the pandemic itself has played a role in recalibrating what is meant by the concept of readiness for online learning. Overall, Power et al.'s study is a rare example of research based on the COVID-19 experience that has truly offered new knowledge on student readiness and potentially opens a new line of inquiry.

7.3 Listening and engaging with the student voice

Suliman et al. (2021) provide an example of a study designed to both investigate and listen to the student voice through a qualitative investigation of nursing students (n=18) in a Jordanian context. Similar to Händel et al. (2021), the study explores emotional elements of readiness, but does so through contrasting positive and negative emotions. The study painted a picture of learners who faced burnout, helplessness, and additional burdens because of distance online learning. The cultural tensions identified, such as marital and childcare difficulties, support Veletsianos and Houlden's (2019) recent critique of the concept of "flexibility" as failing to consider social and gendered realities.

To further illustrate the need for more insightful methodologies, Brown et al. (2015) used video diaries of first time distance learners to better understand their readiness for study and how they experienced online education in their own words. There remains a dearth of this type of qualitative phenomenological research where learners have a high level of personal agency as part of the research design. This is why the inductive approach adopted by Suliman et al. (2021) which respects student participation as partners stands out and the study offers suggestions from learners as to how they could be assisted in improving their levels of readiness. As the following quote illustrates, students can play a valuable role in helping to improve their own learning experience:

Finally, the students in the current study mentioned several suggestions to improve online learning so that it would be more satisfying for them. They demanded that the university should provide a platform that can accommodate the expected number of users to make it easier to upload assignments and answer quizzes. They also requested training courses on the use of e-learning in the first year of their studies. Additionally, they requested specialized technicians to provide technical support for them when needed (Suliman et al., 2021, p. 5).

7.4 Constructive interventions

Lastly, the research conducted by Latheef et al. (2021) is unique in that it conceptually links online learner readiness to an intervention. Drawing on research highlighting the benefits of creating realistic role expectations and the on-boarding practices of businesses, the authors developed a video providing a realistic preview of online learning. The study sought to

compare the video with another common tool for supporting online learning readiness: a self-assessment questionnaire with personalised feedback and recommendations. Participants, undergraduate business studies students (n=146), engaged with both tools and were asked to report how helpful each instrument would be in preparing someone for an online course. The authors reported that participants found that both tools contributed to their readiness for online learning but in different ways suggesting that students may benefit from both approaches to online learning readiness (Latheef et al., 2021). The valuable contribution of this study is not simply analysing dimensions of readiness, but in providing a tangible example of how it might be enhanced in practice. The study also includes detailed recommendations, with innovative and constructive examples that could be adopted in other contexts.

8.0 Strengthening the student voice

Drawing upon the lessons discussed in the previous section, we return to a critical element absent in the majority of literature reviewed, namely, incorporating the student voice. A growing recognition that learners have a valuable voice in the decisions that impact their learning has become a phenomenon known as 'student voice' (Matthews & Dollinger, 2022). Growing use of the term signals a mind-set shift which provokes new types of conversations and aims to reconfigure the traditional power dynamic so that students are not passive recipients in learning but rather co-producers, co-designers, or co-creators. The concept can be considered in multiple and nuanced forms and Table 20 outlines possible examples of how the student voice can be framed in the context of online learning.

Table 20: Theoretical dimensions of learner voice

Dimension	Elaboration
<i>Learning voice</i>	Voice relating to learning context - spaces, places, motivation and engagement
<i>Cognitive voice</i>	Voice regarding identity and self-regulation, as well as perceived capabilities
<i>Social voice</i>	Voice regarding participation and interaction with both peers and instructors
<i>Emotional voice</i>	Voice regarding affect - struggles and highpoints, self-esteem and connection
<i>Technology voice</i>	Voice regarding engagement with technology and how this is positioned in the learning experience

Only a few studies sought first-hand accounts of learner experiences or perceptions of online learning readiness, as evidenced by the small number of qualitative or even mixed method studies in the sample. This proved somewhat surprising given the fact that online learning readiness is an inherently student-centred concept and the impact or assessment of its contours is only possible to explore by engaging students in their own particular contexts. Important questions arise when considering student co-construction and participation, such as power and ethical considerations. Students need to have the confidence and trust that their opinions will be listened to and acted upon.

The following are some examples of research, conducted outside the field of online learning readiness, but in the wider context of the student online learning experience during COVID-19, that have innovatively engaged with the 'student voice' and underscore the potential for future research in the field. In Wilson et al. (2020), students were engaged not simply as survey respondents or interviewees but as research partners, co-constructing an account of students' experiences of online learning during the pandemic. The authors, who functioned as mentors to the students, argue that the approach allowed students to critically evaluate their experience within COVID-19 without pre-existing scholarly assumptions held by higher education researchers. Similarly, Gourlay et al. (2021) presents staff-student partnership research. The student voice was captured through focus groups and an online survey but a bottom up approach to project design and data collection was also adopted, with two student representatives identifying key issues raised by their peers as the basis for the research. Highlighting the value of the student voice the authors conclude that:

...the student accounts challenge some of the mainstream assumptions about constructs such as student 'inclusivity', academic 'community' online, and teaching which encourages 'questioning', requiring us to think more deeply about what constitutes a meaningful and rich online educative experience (Gourlay et al., 2021, p. 1).

A final Irish initiative of note conducted during the pandemic was the *Your Education, Your Voice, Your Vision* campaign run by the Irish University Association (EDTL, 2021). This initiative was part of the Enhancing Digital Teaching and Learning (EDTL) an Irish Universities project. The study creatively crowdsourced student's perspectives of their ideal post-COVID learning experience using a variety of social media platforms such as Twitter, Tik Tok and Snapchat. Results highlight that flexibility is key with students valuing both face-to-face and online instruction for different reasons. Open-ended responses revealed that students placed value on in person interactions with peers, campus facilities, and the 'college experience', but they also valued the flexibility, accessibility and efficiency of online learning (EDTL, 2021, p. 8). These insights demonstrate the value of empowering and harnessing the student voice to inform approaches to teaching and learning.

9.0 Conclusion and recommendations

This review demonstrates the COVID-19 related literature on student readiness for online learning is relatively diverse. Overall, the literature lacks deeper conceptualisation, reflects relatively narrow research methodologies, and misses broader awareness of what readiness means in the rapidly evolving field of online learning, especially from a learner's perspective. Students are central to the learning design process and both their *voice* and *engagement* needs to be woven throughout the fabric of course development, delivery, and evaluation – irrespective of the delivery mode.

While practitioners are the primary target audience for this report, it is difficult to draw wider actionable recommendations for practice from the studies reviewed, given their diversity in terms of geographical context, instrument use, and relatively small sample sizes. This point is accentuated by a lack of intervention studies in the sample, meaning that there were few examples of demonstrable improvements in readiness. Nevertheless, the studies do highlight

that online learning readiness cannot be taken for granted and that students vary in terms of their readiness for learning online across many factors. Context is an important factor for online learning readiness and institutions need to take intentional and proactive steps to design for readiness within their own context.

Advancing understanding of online learning readiness through research is the only avenue through which we can identify more concrete recommendations for practice. Therefore, this report concludes by providing recommendations for research based on the analysis of the studies reviewed under the following three categories:

- Reconceptualising readiness
- Reorienting towards practice
- Repositioning the student voice

Table 21: Summary of recommendations

Recommendation	Sub-recommendations
<i>Reconceptualising readiness</i>	<ul style="list-style-type: none"> • Tailor for a post-COVID-19 world: challenges and opportunities • Explore factorial relations more closely • Measure more diverse outcomes, including wellbeing
<i>Reorienting towards practice</i>	<ul style="list-style-type: none"> • Readiness as a means, not an end • Assessment of interventions to increase readiness
<i>Repositioning the student voice</i>	<ul style="list-style-type: none"> • Students as co-constructors and co-authors • Qualitative study of student understanding of readiness • Consideration of cross-cultural and cross-class differences

The above recommendations summarised in Table 21 are intended to provoke debate, and thought regarding where precisely more research should be generated, and what type of questions and form this research should take. We elaborate on each recommendation in this final section.

9.1 Reconceptualising readiness

This review indicates most research was cross-sectional, and focused rather little on the *impact* of COVID-19 upon online learning readiness, being typically descriptive and under theorised and uncritical. Future research should consider differences between students by date of commencement, as flagged in a recent study by Mostafa et al. (2022) exploring self-efficacy and performance. This study found that amongst STEM learners at a HBCU (Historically Black College/University) in the United States, continuing students reported a significantly-higher improvement in their grades than those who commenced during COVID-19 (p.17). While this finding differs from the illusions of readiness reported by Power et al. (2022) as counter-intuitively more experience did not lead to increased self-reported readiness, it provides more evidence that the experience of COVID-19 did not occur across all students equally. On a related note, tailored interventions may be required to support those who started learning online during COVID-19, without previous face-to-face experiences. More generally, it raises the value of personalisation in terms of targeted interventions for student readiness and underscores the work of Joosten and Cusatis (2020) and their focus on the needs of minority students, those with disabilities and from disadvantaged backgrounds.

Regarding factorial relations, a pervasive finding of early research during COVID-19 was of students reporting they experienced anxiety, ambiguity, uncertainty, and greater levels of depression and loneliness (e.g. Kohls et al., 2021). Academic staff are typically neither qualified nor responsible to serve as counsellors, but awareness of the emotional and social impact of prolonged isolation is critical when conceptualising readiness. As noted by Wilson et al. (2020, p. 14):

If student success is paramount to the perceived success of institutions, then so too is the need to engage in activities and support structures that can support and enable positive well-being and student flourishing.

Thus, a narrow decontextualised focus on skills and competencies for learning online is inadequate, if not paired with concern for the social, relational, and emotional elements of readiness. A future research agenda should focus, as Händel et al. (2021) does, on the practical links and application of readiness in a more holistic and context specific manner.

9.2 Reorienting towards practice

A second series of recommendations is for research to move beyond descriptions and efforts to measure different dimensions of student readiness by embracing actionable interventions that can support the student online learning experience in practice. Examples such as Latheef et al. (2021) are rare, and literature regarding an applied construct such as “readiness” should provide actionable evidence of ways to improve this readiness, however conceptualised. It is not enough to set out to measure readiness and report the findings in academic journals. A research agenda should include both the challenges and opportunities of promoting readiness, including the types of interventions, teacher-student interactions, and institutional supports which are found to increase and improve readiness. In this vein, anecdotal feedback and learner interactions during the Massive Open Online Course (MOOC), *A Digital Edge: Essentials for the Online Learner*, offered as part of the DigiTEL Pro project, illustrate how such learning opportunities early in the study lifecycle may be able to play a valuable role in developing readiness (Beirne, Brown & Nic Giolla Mhichíl, 2020). The course, which has so far attracted over 10,000 learners, was developed and delivered by the authors drawing on the findings of this review and previous literature on online learning readiness.

9.3 Repositioning the student voice

Finally, students are (in general), the focus of studies regarding readiness, insofar as even when research is directed towards educators, or policy-makers, it is students who ultimately are expected to be (or become) ready. The insightful autoethnographic research of Wilson et al. (2020) provides a strong example of the contested and complex issues raised when students are queried about their experiences, including feelings of alienation and disconnection. Future studies should frame research questions relevant to learners, consider students as active participants, incorporate their perspectives regarding readiness and adopt more phenomenological-type methods. Understanding students in such a manner may enable educators to more-closely and effectively understand the practical impacts of their work, and to foster improvement in student performance in online settings, but as importantly, their wellbeing, preparing for, and fostering, flourishing lives. To paraphrase the Roman philosopher Seneca,

“Success comes when opportunity meets readiness”.

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11.0 Appendix A: Search strings and results

Database: Scopus Search date: 27/08/2021					Results
"Student Readiness" OR "Student preparedness"	AND	Digital OR Online OR E-learning OR Distance	AND	Covid-19 OR pandemic	46

Database: Scopus Search date: 31/08/2021					Results
"Digital readiness" OR "Digital preparedness" OR "Online learning readiness" OR "online learning preparedness"	AND	Student* OR "Higher Education" OR College OR University	AND	Covid-19 OR pandemic OR post-covid	25 documents

Database: Web of Science Search date: 27/08/2021					Results
"Student Readiness" OR "Student preparedness"	AND	Digital OR Online OR E-learning OR Distance	AND	Covid-19 OR pandemic	33

Database: Web of Science Search date: 31/08/2021					Results
"Digital readiness" OR "Digital preparedness" OR "Online learning readiness" OR "online learning preparedness"	AND	Student* OR "Higher Education" OR College OR University	AND	Covid-19 OR pandemic OR post-covid	14 documents

12.0 Appendix B: The Annotated Bibliography

This section contains the full annotated bibliography of 40 publications identified through the literature search methodology. Included in each individual bibliography is the full citation, web link to the publication, geographical location of the study, discipline context, type of methodology and instrument(s) adopted, sample size, focus in terms of the conception of student readiness, whether there are stated implications for policy and practice, original Abstract, and lastly a brief interpretative analysis with key takeaways.

1. Do Turkish student teachers feel ready for online learning in post-Covid times? A study of online learning readiness	
Authors	Ates Cobanoglu, A., & Cobanoglu, I.
Date	2021
Full Citation	Ates Cobanoglu, A., & Cobanoglu, I. (2021). Do Turkish student teachers feel ready for online learning in post-Covid times? A study of online learning readiness. <i>Turkish Online Journal of Distance Education</i> , 22(3), 270-280.
URL	https://dergipark.org.tr/en/download/article-file/1857751
Region	Asia / Europe
Country	Turkey
Discipline	Teacher Education
Theoretical Framework	Yes
Methodology	Quantitative Survey
Measure / Instrument	Existing Scale
Sample Size	100-500
Readiness Dimensions Investigated	Technology Proficiency; Self-directedness; Learning Motivation; Learner Control; Online Communication Self-Efficacy
Implications for Practice	No
Implications for Policy	No

Keywords	Online Learning Readiness; Student Teachers; Distance Learning; Distance Education
Abstract	
<p>The purpose of this descriptive study is to investigate on-line learning readiness levels of student teachers according to several variables. By using purposive sampling method, the sample consisted of 270 (200 female and 70 male) student teachers in Turkey. Data collection tools include (i) Student Demographics Form with 18 items, (ii) On-line Learning Readiness Scale with 18 items and five factors. Statistically, the quantitative data were analyzed via ANOVA, t-test and ANCOVA. The findings suggest that mean of on-line learning readiness levels of student teachers is at good level. On-line learning readiness levels of student teachers are significantly different according to their departments [$F(4,265)=3.450$, $p=0.09$]. Namely, the mean scores for the students from Elementary Education and Pre-school Education departments were significantly higher than those from Social Science Education department. Besides, student teachers who has Internet access had higher on-line learning readiness scores ($M= 67.27$, $SD=9.86$) than did those without access ($M= 60.14$, $SD=10.64$), $t(268)=3.16$, $p=.002$. There are also significant differences between student teachers' on-line learning readiness scores per their perceived information and communication technology use competency and departments after differences in accessibility to the Internet is controlled ($p<.001$). As mentioned by International Society for Technology in Education in 2019 standards, on-line learning readiness needs to be considered in detail to assist learners in using digital media in 21st century for learning; teaching; gathering, producing, sharing information for educational purposes. In conclusion, it is suggested that practitioners should increase online, distance or blended (both on-line and face-to-face) learning experiences of their students who are prospective teachers of the 21st century learners. Therefore, it is strongly suggested contributing development of learning and teaching skills of student teachers by getting them more familiar with on-line learning environments especially in post-Covid times.</p>	
Key Takeaway	
<p>Digital readiness among student teachers is an important area of inquiry and the paper positions itself among other pre-pandemic studies conducted with this cohort. Digital readiness is investigated using an adapted version of the Online Learning Readiness Scale developed by Hung, Chou, Chen & Own (2010). Contribution to knowledge is largely contextual. Differences in OLR identified across teaching departments are difficult to meaningfully compare and the use of Perceived ICT Competency as an independent variable is questionable. The paper provides limited insights or implications for practice.</p>	

2. Readiness for online learning during COVID-19 pandemic: A survey of Pakistani LIS students	
Authors	Rafique, G. M., Mahmood, K., Warraich, N. F., & Rehman, S. U.
Date	2021
Full Citation	Rafique, G. M., Mahmood, K., Warraich, N. F., & Rehman, S. U. (2021). Readiness for online learning during COVID-19 pandemic: A survey of Pakistani LIS students. <i>The Journal of Academic</i>

	<i>Librarianship</i> , 47(3), 102346.
URL	https://www.sciencedirect.com/science/article/pii/S0099133321000379
Region	Asia-Pacific
Country	Pakistan
Discipline	Library and Information Sciences
Theoretical Framework	Yes
Methodology	Quantitative Survey
Measure / Instrument	Existing Scale
Sample Size	100-500
Readiness Dimensions Investigated	Technology Proficiency; Self-directedness; Learning motivation; Learner Control; Online Communication Self-Efficacy
Implications for Practice	Yes
Implications for Policy	No
Keywords	Online learning; COVID-19; Library and Information Science; Online Learning Readiness; Students Pakistan
Abstract	
<p>This study was designed to determine the perceived online learning readiness (OLR) of LIS (Library and Information Sciences) / IM (Information Management) students in Pakistan during COVID-19 pandemic. A quantitative approach based on survey method was used to collect data from 340 LIS students from nine public sector universities of Pakistan through an online questionnaire. The collected data was analyzed using the SPSS and AMOS. The findings revealed that LIS students were not fully personalized and successful in decisions about their online educational activities during COVID-19 pandemic. However, they were motivated to learn through online learning and felt confident in performing basic functions of computers and internet. A significant difference of opinion was observed on 'computer/internet self-efficacy' and 'online communication self-efficacy' based on respondents' gender. Similarly, students from different levels of degree programs reported significantly different computer, internet, and online communication self-efficacy and learning motivation. Moreover, the age and grades of respondents were noted to be strong predictors of their OLR. These findings would be helpful for library schools, universities, and faculty members in Pakistan to improve the quality of online education and implement clear policies and guidelines. This study provides some theoretical and practical implications based on the findings.</p>	

Key Takeaway

This is a very comprehensive study that is well grounded in existing online learning readiness (OLR) literature. Hung et al.'s (2010) scale with modifications relating to the context of the pandemic is used to investigate online learning readiness. A number of student demographic variables are found to influence OLR levels among the students investigated. The authors discuss good theoretical and practical implications of their findings.

3. Self-regulated resource management in emergency remote higher education: Status quo and predictors

Authors	Naujoks, N., Bedenlier, S., Gläser-Zikuda, M., Kammerl, R., Kopp, B., Ziegler, A., & Händel, M.
Date	2021
Full Citation	Naujoks, N., Bedenlier, S., Gläser-Zikuda, M., Kammerl, R., Kopp, B., Ziegler, A., & Händel, M. (2021). Self-regulated resource management in emergency remote higher education: Status quo and predictors. <i>Frontiers in Psychology</i> , 12,
URL	https://www.frontiersin.org/articles/10.3389/fpsyg.2021.672741/full
Region	Europe
Country	Germany
Discipline	Cross-disciplinary
Theoretical Framework	No
Methodology	Quantitative Survey
Measure / Instrument	New Scale
Sample Size	500+
Readiness Dimensions Investigated	Online Communication Self-Efficacy; Home Environment; Device Access and Connectivity; Perceptions and Experience
Implications for Practice	No

Implications for Policy	No
Keywords	COVID-19; Online Learning; emergency remote teaching; digital readiness
Abstract	
<p>Because of the COVID-19 pandemic in the spring term 2020, students faced a sudden change from on-campus learning to online learning with synchronous and asynchronous online courses (emergency remote teaching). To study successfully, students not only needed to be prepared in terms of digital readiness (workspace, IT equipment, previous online learning experiences, and sharing information online), they also faced challenges that pertained to the self-regulated management of external resources (environment structuring, time management, and help-seeking). In the current study, we investigated students' digital readiness for the sudden switch to online learning; differences between students' intended and actual use of external resource management strategies; and the influence of students' digital readiness on their actual use of resource management strategies. Students enrolled in a full-scale, German university ($N = 662$) answered two online questionnaires (before and in the middle of the term). Descriptive statistics indicated that students seemed to be ready to study online. However, repeated measures ANOVA showed that students were not able to manage their resources during the term as frequently as intended. Finally, separate regression analyses revealed that availability of workspace and IT equipment predicted the use of environment structuring strategies. Additionally, IT equipment and information sharing behavior predicted students' help-seeking. Based on the current results, we discuss implications for the promotion of student self-regulated learning (SRL) in online emergency remote teaching based on both external resources and digital readiness.</p>	
Key Takeaway	
<p>This is one of only a few studies identified that investigate the influence of OLR on learning during the pandemic. In this case, OLR was found to significantly predict students' resource management strategies. However, the conceptualisation and measurement of digital readiness in this study is not grounded in existing research. The primary focus of the paper is Online Self-Regulated Learning.</p>	

4. Assessing undergraduate students' e-learning competencies: A case study of higher education context in Indonesia	
Authors	Martha, A. S. D., Junus, K., Santoso, H. B., & Suhartanto, H.
Date	2021
Full Citation	Martha, A. S. D., Junus, K., Santoso, H. B., & Suhartanto, H. (2021). Assessing undergraduate students' e-learning competencies: A case study of higher education context in Indonesia. <i>Education Sciences</i> , 11(4), 189.
URL	https://www.mdpi.com/2227-7102/11/4/189

Region	Asia-Pacific
Country	Indonesia
Discipline	Cross-disciplinary
Theoretical Framework	No
Methodology	Quantitative Survey
Measure / Instrument	Existing Scale
Sample Size	100-500
Readiness Dimensions Investigated	Not specified
Implications for Practice	Yes
Implications for Policy	No
Keywords	e-Learning; Students' e-Learning Preparedness; e-Learning Competency; Rasch Analysis
Abstract	
<p>The COVID-19 pandemic that occurred in early 2020 around the world has implications for Indonesia's education sector. This pandemic led to the Indonesian government policy to study from home at all academic levels using a distance learning approach. Studies on e-learning preparedness in Indonesia involving more comprehensive samples of universities during the pandemic are still limited. This study extended samples from several public and private universities in Indonesia to get a broader picture of e-learning readiness in various faculties with diverse university online learning cultures. This study used Rasch analysis to determine the validity and reliability of the instrument and differential item functioning (DIF) analysis to identify responses based on students' demographic profiles. The results show that most students were ready to study online, but a few were not ready. Moreover, the results show significant differences in students' e-learning readiness based on the academic year at university, the field of study, the level of organizational e-learning culture of the university, gender, and region. This work provides an insight into student readiness to study online, especially in higher education in Indonesia. The article presents the implications of online learning practices in universities and recommendations for future e-learning research.</p>	
Key Takeaway	
<p>This study conducts an in-depth quantitative analysis of digital readiness and its antecedent variables, although no specific research questions or hypotheses are identified by the authors. Digital readiness is measured using a pre-existing instrument developed by Parkes, Reading and Stein (2013). The importance of building an e-learning culture within a university is identified as a key</p>	

takeaway by the authors. Other implications for practice are ambiguous.

5. Readiness towards online learning among physiotherapy undergraduates

Authors	Ranganathan H., Singh D.K.A., Kumar S., Sharma S., Chua S.K., Ahmad N.B., & Harikrishnan K.
Date	2021
Full Citation	Ranganathan H., Singh D.K.A., Kumar S., Sharma S., Chua S.K., Ahmad N.B., & Harikrishnan K. (2021). Readiness towards online learning among physiotherapy undergraduates. <i>BMC Medical Education</i> , 21, p. 376.
URL	https://bmcmmededuc.biomedcentral.com/track/pdf/10.1186/s12909-021-02803-8.pdf
Region	Asia-Pacific
Country	Malaysia
Discipline	Health
Theoretical Framework	No
Methodology	Quantitative Survey
Measure / Instrument	Existing Scale
Sample Size	100-500
Readiness Dimensions Investigated	Technology Proficiency; Social Competencies; Online Communication Self-Efficacy
Implications for Practice	No
Implications for Policy	No
Keywords	Online Learning; Physiotherapy Undergraduates; Readiness

Abstract

Background: Online learning is an attractive option for educators, especially as means of overcoming the challenges posed by the global pandemic. Although it is best to evaluate student readiness prior to commencement of an online course, to ensure successful development and delivery of student-centric teaching and learning strategies, readiness towards online learning among physiotherapy undergraduates is unknown. The main aim of this study was to examine physiotherapy undergraduates' readiness towards online learning. **Methods:** In this cross-sectional study, participants were selected through a combination of total population and convenience sampling. The Student Online Learning Readiness questionnaire was distributed among physiotherapy undergraduates from two public and two private universities in Malaysia to investigate their technical, social and communication competencies. Information about device characteristics were obtained to evaluate their equipment readiness. Descriptive and group comparisons were conducted using independent t-test, and analysis of variance with $p < 0.05$ as level of significance. **Results:** A total of 352 physiotherapy undergraduates participated. The response rate was 81.6%. The results showed that physiotherapy undergraduates in these four institutions had moderate levels of readiness towards technical competencies ($M = 3.7 \pm 0.5$), social competencies with instructor ($M = 3.7 \pm 0.6$), social competencies with classmates ($M = 3.8 \pm 0.6$) and communication competencies ($M = 3.6 \pm 0.5$) related to online learning. The overall readiness for these four competencies was moderate ($M = 3.7 \pm 0.4$), however the physiotherapy undergraduates had high ($> 80\%$ possessed smartphones and laptop) level of equipment readiness. Institution and gender had no significant effect on the level of readiness ($p > 0.05$). Year 1 and 2 had significantly higher levels of social competencies with instructor compared to final year physiotherapy undergraduates ($p < 0.05$). **Conclusion:** Physiotherapy undergraduates in these four institutions had moderate to high levels of readiness towards online learning. Technical, social and communication competencies could be further enhanced with appropriate strategies. **Significance:** This study provides an insight into the level of readiness towards online learning among physiotherapy undergraduates. The findings of our study shed light on issues to consider when designing online courses. A pre-course training for undergraduates prior to the commencement of online courses may be useful.

Key Takeaway

Contribution to knowledge in this study is weak. Despite the large sample size, nearly all relationships investigated are non-significant. The study has little to contribute in the form of implications for practice or policy. There is no theoretical framework employed and the conceptualisation of digital readiness is also narrow with no consideration for the psychological dimensions of digital readiness for example.

6. Enablers and barriers to online learning among medical students during COVID-19 pandemic: An explanatory mixed-method study

Authors	Roslan N.S., & Halim A.S.
Date	2021
Full Citation	Roslan N.S., & Halim A.S. (2021). Enablers and barriers to online learning among medical students during COVID-19 pandemic: An explanatory mixed-method study. <i>Sustainability</i> , 13, 1-15.

URL	https://www.mdpi.com/2071-1050/13/11/6086
Region	Asia-Pacific
Country	Malaysia
Discipline	Health
Theoretical Framework	No
Methodology	Both qualitative and quantitative
Measure / Instrument	New Scale
Sample Size	100-500
Readiness Dimensions Investigated	Home Environment; Self-Regulation; Device Access and Connectivity
Implications for Practice	No
Implications for Policy	No
Keywords	Online Learning; e-Learning; Blended Learning; Distance Education; COVID-19; Self-regulation; Online Learning Readiness; Sustainable Medical Education
Abstract	
<p>As the coronavirus disease 2019 (COVID-19) trajectory remains unknown, online learning (OL) has replaced face-to-face teaching strategies in education institutions. Research and training focus on harnessing educators, but less is understood at the students' ends. This study examines the OL readiness components, self-regulation, enablers, and barriers to OL at home among medical students during the COVID-19 pandemic through an explanatory mixed-method study. We conducted a cross-sectional study with 178 students and an in-depth interview with 10 students from a public medical school in Malaysia. We found that while all students owned at least one learning device, 22.5% of the students did not have a learning space at home. 21.9% students did not have Wi-Fi access, and 11.2% did not receive mobile broadband coverage at home. Despite these barriers, students had a suitable OL self-regulation level. Significantly higher self-regulation was observed among pre-clinical year students, students with higher grades, and students who had designated learning space at home. We found high-immediate and low-bandwidth applications such as WhatsApp and Telegram, and YouTube as the most accessible and easiest platforms to navigate in OL. Our qualitative findings yielded a conceptual model of OL enablers at learners, educators, and institution levels. This framework may serve as one of the guides in faculty development planning and policymaking, especially in promoting a more socially inclusive OL.</p>	

Key Takeaway

This study is descriptive in nature and interviews were used to enhance quantitative responses and to develop a conceptual model explaining the enablers of online learning in the medical curriculum. While this framework is a good output, the study demonstrates little engagement with existing digital readiness literature and even online learning literature more generally. Readiness was conceptualised in terms of access to internet, devices, quiet space to work, and support, as well as prior experience working on online platforms. In the quantitative reporting some measures lacked detail and were difficult to interpret. It is also noted that the framework could be enhanced further with the inclusion of a social environmental factor.

7. Development and validation of online classroom learning environment inventory (OCLEI): The case of Indonesia during the COVID-19 pandemic

Authors	Rahayu, W., Putra, M., Faturachman, M., Sulaeman, E., & Koul, R.
Date	2021
Full Citation	Rahayu, W., Putra, M., Faturachman, M., Sulaeman, E., & Koul, R. (2021). Development and validation of online classroom learning environment inventory (OCLEI): The case of Indonesia during the COVID-19 pandemic. <i>Learning Environments Research</i> , 25. 97-113.
URL	https://link.springer.com/content/pdf/10.1007/s10984-021-09352-3.pdf
Region	Asia-Pacific
Country	Indonesia
Discipline	Cross-disciplinary
Theoretical Framework	Yes
Methodology	Quantitative Survey
Measure / Instrument	New Scale
Sample Size	500+

Readiness Dimensions Investigated	Device Access and Connectivity; Online Communication Self-Efficacy; Academic Skills; Educator Support
Implications for Practice	Yes
Implications for Policy	No
Keywords	Online Learning Readiness; Academic Resilience; School from Home; Students

Abstract

Learning readiness is considered as a supporting factor in academic resilience. Since the situation of school closure and learning from home due to the COVID-19 pandemics, there have been changes in learning methods that require students to readily use online learning. Unfortunately, students' readiness in online learning has not been widely discussed in terms of its effect on the student's academic resilience. The purpose of this study was to provide information on whether there was a significant relationship between online learning readiness and students' academic resilience during the school-from-home period. Participants in this study consisted of 1.681 students from five high schools in Bandung, Indonesia. The research used questionnaires that were based on the online learning readiness scale and the academic resilience scale. The questionnaires were distributed online. The data in this study were then analyzed using correlational and regression methods. The results showed that there was a moderately significant relationship between student readiness in online learning and student academic resilience during the school-from-home period. Also, online learning readiness significantly predicted student academic resilience through the dimensions of motivation for learning and self-directed learning. This study emphasized the importance of student readiness in online learning as a new learning strategy during school from home in increasing academic resilience and success.

Key Takeaway

The primary purpose of this study is to develop a new instrument for assessing students' perceptions of the online learning environment specifically during the Covid-19 pandemic. The development and validation process is outlined in good detail but no descriptive statistics are provided to describe the sample used for testing. In addition, scale items are only provided in Indonesian making it difficult to ascertain how they relate to each construct or assess their relevance for other contexts. Overall, this study demonstrates good engagement with wider online learning readiness literature.

8. COVID-19 response: Students' readiness for shifting classes online

Authors	Kundu, A., & Bej, T.
Date	2021
Full Citation	Kundu, A., & Bej, T. (2021). COVID-19 response: students' readiness for shifting classes online, <i>Corporate Governance</i> , 21(

	6), pp. 1250-1270.
URL	https://www.emerald.com/insight/content/doi/10.1108/CG-09-2020-0377/full/pdf?title=covid-19-response-students-readiness-for-shifting-classes-online
Region	Asia-Pacific
Country	India
Discipline	Cross-disciplinary
Theoretical Framework	Yes
Methodology	Mixed Methods
Measure / Instrument	New Scale
Sample Size	50-100
Readiness Dimensions Investigated	Emotion; Perceptions and Experience
Implications for Practice	No
Implications for Policy	Yes
Keywords	India; Online Education; Good Governance; COVID-19; F2F Mode of Instruction
Abstract	
<p>Purpose: Coronavirus disease 2019 (COVID-19) pandemic has led education institutions to move all face-to-face (F2F) courses online across the globe. The purpose of this study was to investigate Indian students' perception of readiness for this sudden shift and at the same time, report a possible approach of good institutional governance to respond to such an unprecedented crisis. Design/methodology/approach: This study followed a mixed approach combining both quantitative (e.g. survey) and qualitative (e.g. interview) methods. A survey was distributed among 100 purposively selected students out of which 50 were college students and 50 were from secondary schools following heterogeneous purposive sampling techniques. In total, 30 participants were interviewed as per a set interview protocol. Data were analyzed descriptively and inferentially based on several demographic differences. Findings: Findings revealed that students were neither satisfied nor ready for this sudden shift toward online education; rather they felt fear, uncertainties, and several challenges owing to a deep digital divide to adapt to this unprecedented shift. They were found absorbed in memories of F2F mode before the COVID outbreak and take this online shift as a temporary adjustment owing to respond to the pandemic finding no possible alternate.</p>	

Originality/value: This study contributes and extends corporate governance literature by offering new evidence of perception differences between the company and customers as well. Education providers often assume that students desire online courses for their convenience and believe it equivalent to or better than F2F courses. This study challenges these managerial perceptions by examining students' studies empirically and the findings will help regulators and policymakers to change accordingly.

Key Takeaway

This study investigates digital readiness through the lens of corporate governance. It is one of only a few studies identified that includes emotion, in this case, fear, as a dimension of digital readiness. Nevertheless, the overall conceptualisation of digital readiness is weak. Despite the stated intention of making recommendations for good institutional governance during a pandemic, recommendations in this regard are weak.

9. Engineering students' readiness to transition to emergency online learning in response to COVID-19: Case of Qatar

Authors	Naji, K., Du, X., Tarlochan, F., Ebead, U., Hasan, M., & Al-Ali, A.
Date	2020
Full Citation	Naji, K., Du, X., Tarlochan, F., Ebead, U., Hasan, M., & Al-Ali, A. (2020). Engineering students' readiness to transition to emergency online learning in response to COVID-19: Case of Qatar. <i>EUARASIA. Journal of Mathematics, Science and Technology Education</i> , 16(10). 1-17.
URL	https://www.ejmste.com/download/engineering-students-readiness-to-transition-to-emergency-online-learning-in-response-to-covid-19-8474.pdf
Region	Middle-East
Country	Qatar
Discipline	STEM
Theoretical Framework	Yes
Methodology	Mixed Methods

Measure / Instrument	New Scale
Sample Size	100-500
Readiness Dimensions Investigated	Online Learning Efficacy; Self-directedness; Technology Proficiency; Learning motivation; Perceptions and Experience
Implications for Practice	Yes
Implications for Policy	No
Keywords	Engineering Students; Readiness for Change; Emergency Online Learning; COVID-19; Qatar
Abstract	
<p>This study examined engineering students' initial readiness to transition to emergency online learning in response to COVID-19 in Qatar. A theoretical framework is proposed for understanding the factors influencing students' readiness for change. Sequential explanatory mixed-method research was conducted, with 140 participants completing an online survey, of which 68 also contributed written reflections and 8 participated in semi-structured interviews. Exploratory factor analysis displayed a four-factor structure, including initial preparedness and motivation for online learning, self-efficacy beliefs about online learning, self-directed learning online, and support. The qualitative outcomes supported the four factors and provided further insight into their varied and nuanced manifestation. In accounting for the perceived impact of the factors on readiness, significant differences were identified regarding pedagogical mode, with students enrolled in PBL courses reporting higher readiness than those from non-PBL courses. The practical implications for preparing students for future emergency online learning are discussed.</p>	
Key Takeaway	
<p>This is a well-written paper that demonstrates meaningful engagement with the wider literature on digital readiness. The authors describe the study as a sequential explanatory mixed-methods. The quantitative scales underwent rigorous validity testing. However, use of the terms 'Factor 1' and 'Factor 2' in the text as opposed to named subscales makes interpreting the results difficult for the reader. The use of extended quotes from the qualitative responses gives great insight into the learner perspective. However, this insight is limited somewhat by the deductive, theory-driven, coding methodology employed.</p>	

10. Digital readiness and its effects on higher education students' socio-emotional perceptions in the context of the COVID-19 pandemic	
Authors	Händel, M., Stephan, M., Gläser-Zikuda, M., Kopp, B., Bedenlier, S., & Ziegler, A.

Date	2020
Full Citation	Händel, M., Stephan, M., Gläser-Zikuda, M., Kopp, B., Bedenlier, S., & Ziegler, A. (2020). Digital readiness and its effects on higher education students' socio-emotional perceptions in the context of the COVID-19 pandemic. <i>Journal of Research on Technology in Education</i> , 1-13.
URL	https://www.tandfonline.com/doi/full/10.1080/15391523.2020.1846147
Region	Europe
Country	Germany
Discipline	Cross-disciplinary
Theoretical Framework	No
Methodology	Quantitative Survey
Measure / Instrument	New Scale
Sample Size	500+
Readiness Dimensions Investigated	Technology Proficiency; Device Access and Connectivity; Perceptions and Experience
Implications for Practice	Yes
Implications for Policy	No
Keywords	Readiness for Digital Learning; COVID-19 Pandemic; Cluster Analysis; Socio-emotional Perceptions
Abstract	
<p>The current study investigated how ready higher education students were for emergency remote teaching due to the COVID-19 pandemic and how this influenced their socio-emotional perceptions. Results of $N = 1,826$ higher education students indicate that they seem to be ready for digital learning. A k-means cluster analysis revealed two groups of students that significantly differed with respect to their readiness for digital learning (in terms of technology equipment availability, prior experiences with e-learning, and skills for digital learning). Finally, students' socio-emotional perceptions, that is, stress-related emotions (worries, tension, joy, and overload) as well as social and emotional loneliness significantly differed due to cluster membership. Hence, the study points to a need for</p>	

support of higher education students in successfully coping with the challenges of emergency remote studying.

Key Takeaway

This study is notable in that research on emotion and digital readiness is limited even beyond the Covid-19 context. Digital readiness and socio-emotional perceptions of digital distance learning were measured before the summer 2020 semester. The negative correlational relationships identified indicate that students who are not ready for digital learning might suffer the double burden of also experiencing higher stress and loneliness, although effect sizes were small. The authors indicate that these results come from the first phase of a larger longitudinal study where the concepts are also measured in the middle and end of the semester.

11. Examining Saudi EFL university students' readiness for online learning at the onset of Covid-19 pandemic

Authors	Ghobain, E., & Zugaibi, A.
Date	2021
Full Citation	Ghobain, E., & Zugaibi, A. (2021). Examining Saudi EFL university students' readiness for online learning at the onset of Covid-19 pandemic. <i>Arab World English Journal (AWEJ) Special Issue on CALL, (7)</i> , 3-21.
URL	https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3904435
Region	Middle-East
Country	Saudi Arabia
Discipline	Cross-disciplinary
Theoretical Framework	Yes
Methodology	Quantitative Survey
Measure / Instrument	New Scale
Sample Size	500+

Readiness Dimensions Investigated	Technology Proficiency; Learning motivation; Perceptions and Experience
Implications for Practice	No
Implications for Policy	No
Keywords	English Learners; Online Learning; Saudi Learners; Learner Autonomy; University Students
Abstract	
<p>Nowadays, especially after the COVID 19 crisis lockdown, the heavy reliance on technology and online platforms led to a greater expectation of more learning autonomy among English learners in EFL contexts such as Saudi Arabia. The sudden shift to online learning requires an investigation into students' readiness and willingness for such a mode of learning. This can provide educators with many prospects about learning outcomes achievement and assessment, test performance, and interaction during classes. Therefore, the current study seeks to contribute to the well-known area of learner autonomy research, which is still lacking in the context of the study, by exploring the readiness of Saudi first year undergraduate English learners towards online education. Participants' level of readiness is identified according to their autonomous behaviours and activities. The study will also assess the investigated concept considering the influence of gender and field of study of the participants on their autonomy levels. A total of 802 students participated in this study. It was found that Saudi first year university students are moderately autonomous, that both males and females have similar levels of aptitude and readiness for taking responsibility for their learning, and that English major and non-English major groups showed comparatively similar levels across different learning autonomy dimensions. Yet interestingly, English major participants displayed a relatively lower autonomy level than students of other majors.</p>	
Key Takeaway	
<p>This study demonstrates poor engagement with digital readiness literature, focusing instead on the related but distinct concept of Learner Autonomy. A Learner Autonomy Questionnaire is also used to determine learners' readiness. Details pertaining to the analysis of data is limited and there are no descriptive statistics provided for the sample. It is also noted that some conclusions drawn are over generalised.</p>	

12. Factors influencing computing students' readiness to online learning for understanding software engineering foundations in Saudi Arabia	
Authors	Alhubaishy, A.
Date	2020
Full Citation	Alhubaishy, A. (2020). Factors influencing computing students' readiness to online learning for understanding software

	engineering foundations in Saudi Arabia. <i>International Journal of Advanced Computer Science and Applications</i> , 11(12), 755-761.
URL	https://thesai.org/Downloads/Volume11No12/Paper_86-Factors_Influencing_Students_Readiness.pdf
Region	Middle East
Country	Saudi Arabia
Discipline	STEM
Theoretical Framework	Yes
Methodology	Qualitative & Quantitative
Measure / Instrument	Existing Scale
Sample Size	100-500
Readiness Dimensions Investigated	Online Learning Efficacy; Self-directedness; Learning Motivation; Learner Control; Online Communication Self-efficacy
Implications for Practice	Yes
Implications for Policy	Yes
Keywords	Readiness to Online Learning; Software-engineering
Abstract	
<p>The spread of Coronavirus disease (COVID-19) has enforced most universities/institutions over the world to transform their educational models (face-to-face and blended) bearing in mind the online educational environments as a temporary substitute. Consequently, all universities/institutions in Saudi Arabia have requested their students to continue the learning process using online environments. This transition has provided an opportunity to deeply investigate possible challenges as well as factors that influence the adoption of online learning as a future educational model for undergraduate students. This research measures the current undergraduate students' readiness for online learning and investigates factors that influence their level of readiness. Firstly, the research proposes the adoption of a validated multidimensional instrument to measure undergraduate students' readiness for online learning in different universities. Secondly, the research elaborates the findings by an in-depth study that highlights the main obstacles that hinder computing students' readiness to learn Software Engineering (SE) foundations using online learning. The research adopts survey research to measure students' readiness and analyzes the data to extract the readiness levels of different dimensions of the adopted instrument. Furthermore, interviews were conducted to specify the influential factors on computing students' readiness levels regarding learning SE foundations.</p>	

Results show that students' readiness level for online learning is within the acceptable range while some improvements are needed. Furthermore, the study found that students' cognition, willingness, ignorance, and the amount of assistance and help they receive play a significant role in the success/failure of the adoption of learning SE foundations through online environment.

Key Takeaway

This mixed method study uses the Hung et al. (2010) online learning readiness scale to quantitatively measure online learning readiness among students. The main contribution of the paper is the use of qualitative interviews to identify barriers to online learning. However, the authors do not include any extracts from learners in their analysis, reducing the overall impact of the findings and weakening the learner voice. Recommendations for practice are short and quite generic.

13. Learning readiness as a predictor of academic resilience in online learning during school from home.

Authors	Ramadhana, M., Putra, A., Pramonojati, A., Haquu, R., Dirgantara, P., Ismail, O., & Wijaksono, D.
Date	2021
Full Citation	Ramadhana, M., Putra, A., Pramonojati, A., Haquu, R., Dirgantara, P., Ismail, O., & Wijaksono, D. (2021). Learning readiness as a predictor of academic resilience in online learning during school from home. <i>Library Philosophy and Practice</i> , No. 5362.
URL	https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=9951&context=libphilprac
Region	Asia-Pacific
Country	Indonesia
Discipline	STEM
Theoretical Framework	Yes
Methodology	Quantitative Survey
Measure / Instrument	New Scale
Sample Size	500+

Readiness Dimensions Investigated	Online Learning Efficacy; Self-directedness; Learning Motivation; Learner Control; Online Communication
Implications for Practice	No
Implications for Policy	No
Keywords	Online Learning Readiness, Academic Resilience; School from Home; Students

Abstract

Learning readiness is considered as a supporting factor in academic resilience. Since the situation of school closure and learning from home due to the COVID-19 pandemics, there have been changes in learning methods that require students to readily use online learning. Unfortunately, students' readiness in online learning has not been widely discussed in terms of its effect on the student's academic resilience. The purpose of this study was to provide information on whether there was a significant relationship between online learning readiness and students' academic resilience during the school-from-home period. Participants in this study consisted of 1.681 students from five high schools in Bandung, Indonesia. The research used questionnaires that were based on the online learning readiness scale and the academic resilience scale. The questionnaires were distributed online. The data in this study were then analyzed using correlational and regression methods. The results showed that there was a moderately significant relationship between student readiness in online learning and student academic resilience during the school-from-home period. Also, online learning readiness significantly predicted student academic resilience through the dimensions of motivation for learning and self-directed learning. This study emphasized the importance of student readiness in online learning as a new learning strategy during school from home in increasing academic resilience and success.

Key Takeaway

This is a detailed investigation of a pre-established variable relationship under new conditions. Online learning readiness is measured using Hung et al.'s (2010) instrument. Interestingly, motivation and self-directedness had the strongest influence on students' academic resilience while working from home. The effects of learner control, internet self-efficacy and online communication self-efficacy were not as important in this context. Another interesting finding was that learner control positively predicted anxiety among learners. The authors provide a couple of practical recommendations for educators to improve online learning readiness among students.

14. Comparative analysis of Student's live online learning readiness during the coronavirus (COVID-19) pandemic in the higher education sector

Authors	Tang Y.M., Chen P.C., Law K.M.Y., Wu C.H., & Lau.
Date	2021

Full Citation	Tang Y.M., Chen P.C., Law K.M.Y., Wu C.H., & Lau. (2021). Comparative analysis of Student's live online learning readiness during the coronavirus (COVID-19) pandemic in the higher education sector. <i>Computers and Education</i> , 168.
URL	https://pubmed.ncbi.nlm.nih.gov/33879955/
Region	Asia-Pacific
Country	Hong Kong
Discipline	Cross-disciplinary
Theoretical Framework	Yes
Methodology	Quantitative Survey
Measure / Instrument	Existing Scale
Sample Size	500+
Readiness Dimensions Investigated	Online Learning Efficacy; Self-directedness; Learning Motivation; Learner Control; Online Communication
Implications for Practice	No
Implications for Policy	Yes
Keywords	Live Online Learning; Learning Readiness; Multi-group Analysis; Post hoc Test; Heterotrait-monotrait; Higher Education; Coronavirus; COVID-19 Pandemic
Abstract	
<p>Amid the coronavirus outbreak, many countries are facing a dramatic situation in terms of the global economy and human social activities, including education. The shutdown of schools is affecting many students around the world, with face-to-face classes suspended. Many countries facing the disastrous situation imposed class suspension at an early stage of the coronavirus outbreak, and Asia was one of the earliest regions to implement live online learning. Despite previous research on online teaching and learning, students' readiness to participate in the real-time online learning implemented during the coronavirus outbreak is not yet well understood. This study explored several key factors in the research framework related to learning motivation, learning readiness and student's self-efficacy in participating in live online learning during the coronavirus outbreak, taking into account gender differences and differences among sub-degree (SD), undergraduate (UG) and postgraduate (PG) students. Technology readiness was used instead of conventional online/internet self-efficacy to determine students' live online learning readiness. The hypothetical model was validated using confirmatory factor analysis (CFA). The results revealed no statistically significant differences</p>	

between males and females. On the other hand, the mean scores for PG students were higher than for UG and SD students based on the post hoc test. We argue that during the coronavirus outbreak, gender differences were reduced because students are forced to learn more initiatives. We also suggest that students studying at a higher education degree level may have higher expectations of their academic achievement and were significantly different in their online learning readiness. This study has important implications for educators in implementing live online learning, particularly for the design of teaching contexts for students from different educational levels. More virtual activities should be considered to enhance the motivation for students undertaking lower-level degrees, and encouragement of student-to-student interactions can be considered.

Key Takeaway

This study is well-grounded in contemporary literature and draws on Hung et al.'s (2010) conceptual framework for online learning readiness (OLR). The authors attempt to differentiate their study by investigating OLR for what they term as 'live online teaching' or in other words synchronous teaching. However, this is not as novel as the authors claim. Results regarding the influence of OLR on gender and education level are unsurprising and consistent with other investigations.

15. Explaining the adoption of technology-based design of higher education during and after COVID 19 period from a developing country perspective.

Authors	Kabir, M. R., Islam, M. A., & Deena, S. A.
Date	2020
Full Citation	Kabir, M. R., Islam, M. A., & Deena, S. A. (2020). Explaining the adoption of technology-based design of higher education during and after COVID 19 period from a developing country perspective. <i>Interaction Design and Architecture Journal</i> , 46, 88-119.
URL	http://www.mifav.uniroma2.it/inevent/events/idea2010/doc/46_5.pdf
Region	Asia-Pacific
Country	Bangladesh
Discipline	Cross-disciplinary
Theoretical Framework	No
Methodology	Quantitative Survey

Measure / Instrument	New Scale
Sample Size	100-500
Readiness Dimensions Investigated	Technology Proficiency; Learner Control; Online Communication Self-Efficacy
Implications for Practice	Yes
Implications for Policy	Yes
Keywords	Bangladesh; COVID 19; Distance Learning; Higher Education; SEM; Technology
Abstract	
<p>COVID 19 has a severe impact in every sphere of life, and education is not an exception to this. Hence, the education sector in developing countries like Bangladesh needs a quick transformation from traditional to technology- based distance learning. The factors influencing online education adoption are explained in this research with a Structural Equation Model (SEM). A survey of 405 students from the universities across Bangladesh revealed that faculty readiness, student readiness, and economic solvency positively impact the students' intention to adopt a technology-based design of higher education. Simultaneously, the online assessment system is a challenge for the students having a negative effect on their intention to adopt technology-based learning. Again, students' intention to adopt technology is substantial in explaining the adoption of online classes by them. The study suggests combining the classroom model with the e-learning model to create a cohesive learning system in the long run. Thus, the model proposed in this research has a crucial implication, which recommends the policymakers to consider it to design a new form of technology-based education in Bangladesh.</p>	
Key Takeaway	
<p>This is an in-depth quantitative study which could be enhanced by some qualitative student narratives. Nevertheless, a key finding is that student perceptions of online learning and their engagement with online learning is influenced by their own online learning readiness but also their perceptions of faculty readiness for online learning. Online learning engagement, however, is self-assessed and may not reflect actual behaviours. Recommendations for practice include the need for digital skills development across both faculty and students in order to encourage student engagement in online learning. The impact of the lack of basic requirements such as access to the internet and devices for learning is also highlighted.</p>	

16. Factors affecting student's perceived readiness on abrupt distance learning adoption: Indonesian higher-education perspectives	
Authors	Hasani, L. M., Adnan, H. R., Sensuse, D. I., & Suryono, R. R.

Date	2020
Full Citation	Hasani, L. M., Adnan, H. R., Sensuse, D. I., & Suryono, R. R. (2020). Factors affecting student's perceived readiness on abrupt distance learning adoption: Indonesian higher-education perspectives. <i>3rd International Conference on Computer and Informatics Engineering (IC2IE)</i> , pp. 286-292.
URL	https://ieeexplore.ieee.org/document/9274640
Region	Asia-Pacific
Country	Indonesia
Discipline	Cross-disciplinary
Theoretical Framework	Yes
Methodology	Quantitative Survey
Measure / Instrument	New Scale
Sample Size	100-500
Readiness Dimensions Investigated	Not Specified
Implications for Practice	Yes
Implications for Policy	No
Keywords	Distance Learning; e-Learning; Adoption; Abrupt; Readiness; Student
Abstract	
<p>Widespread lockdowns across the globe during Covid-19 outbreak forced the universities to abruptly adopt full online distance learning. Such unprecedented abrupt adoption requires a degree of student readiness to ensure the success of distance learning delivery. However, prior research about student readiness of e-Learning adoption is still limited to discussing proactive adoption in normal conditions. To address this issue, this study investigated the factors that affect the student's perceived readiness for abrupt distance learning adoption. By applying Structural Equation Modelling (SEM) using the Partial Least Square algorithm, this study found that self-competence, comfort with e-Learning, uncertainty avoidance, financial ability, and technological facilitating conditions are factors that significantly affect student's perceived readiness. Based on this finding, faculties are recommended</p>	

to be an early adopter of e-Learning, to provide an e-Learning platform with excellent usability and effective instructional design for the students, to provide clear instructions for both students and instructors, and to provide needed resources (e.g. internet connection) to the students. Moreover, future studies could be focused on lecturers' or faculties' readiness for abrupt distance learning adoption.

Key Takeaway

This study presents a detailed conceptual framework for its investigation that draws on a number of theories including distance learning, factors that influence the adoption of e-Learning, Unified Theory Acceptance and Use of Technology (UTAUT), and Hofstede's Culture Dimensions. However, there is no acknowledgement of existing digital readiness literature. As a result, the conceptualisation and measurement of digital readiness is unclear and arguably overlaps with conceptualisations of other independent variables.

17. Factors influencing the formation of consumer engagement and consumer satisfaction with e-learning activities

Authors	Santoso, S., & Wacana, D.
Date	2021
Full Citation	Santoso, S., & Wacana, D. (2021). Factors influencing the formation of consumer engagement and consumer satisfaction with e-learning activities. <i>Innovative Marketing</i> , 137-148.
URL	http://dx.doi.org/10.21511/im.17(2).2021.13
Region	Asia-Pacific
Country	Indonesia
Discipline	Cross-disciplinary
Theoretical Framework	No
Methodology	Quantitative Survey
Measure / Instrument	New Scale
Sample Size	100-500

Readiness Dimensions Investigated	Technology proficiency
Implications for Practice	Yes
Implications for Policy	No
Keywords	Special Region of Yogyakarta, Indonesia; AMOS-SEM; Engagement; Satisfaction
Abstract	
<p>The COVID-19 pandemic that plagued the world has resulted in many e-learning software that drove virtual learning activities to jump sharply and began to replace face-to face meetings. This paper aims to find out the influence of digital readiness, technical and information quality, instructor quality, e-learning adoption and attitude on consumer engagement, and consumer satisfaction with e-learning performance. The study was conducted in the form of a quantitative survey at Duta Wacana Christian University in the Special Region of Yogyakarta, Indonesia, over the period from June 2020 to September 2020. The study sample using the purposive random sampling technique consisted of 175 students as respondents. Various statistical methods, including descriptive and structural equation modeling, were used to analyze the data and test the hypotheses of the model. Key findings were that there is a statistically direct impact of digital readiness, technical and information quality, e-learning adoption and attitude, and instructor quality on consumer engagement, and thus consumer engagement influences consumer satisfaction positively and significantly. With these results, tutorial activities need to be implemented for the use of popular e-learning software and related technological literacy, because the need for e-learning software will be even more massive in the future.</p>	
Key Takeaway	
<p>This paper explores the factors that influence students' engagement with e-learning software such as Zoom, Google Meet, Microsoft Teams, etc. and their subsequent satisfaction with e-learning activities. Digital readiness, narrowly conceptualised as the knowledge and skills needed to operate the software, was one of three factors found to influence learners' engagement. However, no details are provided on how the concepts are measured. Discussion regarding theoretical and practical implications is brief.</p>	

18. Experiences of nursing students under the unprecedented abrupt online learning format forced by the national curfew due to COVID-19: A qualitative research study	
Authors	Suliman, W., Abu-Moghli, F., Khalaf, I., Zumot, A., & Nabolsi, M.
Date	2021
Full Citation	Suliman, W., Abu-Moghli, F., Khalaf, I., Zumot, A., & Nabolsi, M. (2021). Experiences of nursing students under the unprecedented abrupt online learning format forced by the national curfew due to

	COVID-19: A qualitative research study. <i>Nurse Education Today</i> , 100, 1-6.
URL	https://www.sciencedirect.com/science/article/pii/S0260691721000861
Region	Middle East
Country	Jordan
Discipline	Health
Theoretical Framework	No
Methodology	Qualitative
Measure / Instrument	New Scale
Sample Size	10-50
Readiness Dimensions Investigated	Helplessness and Burnout; Social and Technological Support; Online Learning as a Positive Opportunity; Deficiencies in Fulfilling Educational Outcomes
Implications for Practice	Yes
Implications for Policy	No
Keywords	Abrupt Online Learning; Experience; Nursing Students; COVID-19; Jordan
Abstract	
<p>Background: The unprecedented abrupt shift to remote online learning (OL) within the context of the national lockdown due to the 2019 coronavirus disease (COVID-19) highlights the importance of addressing students' preparedness in managing their first experiences with OL. Purpose: To investigate the experiences of undergraduate nursing students during their first uses of OL to increase the understanding of their encountered opportunities and challenges. Design: A descriptive qualitative design guided by a phenomenological approach was used. Methods: The study used a purposive sampling technique to recruit 18 undergraduate nursing students from two universities. Data were collected using two focus group discussions, and the discussions with participants were audio/video recorded through the online platform Zoom due to the national imposed curfew. Content analysis employed Colaizzi's steps to derive the themes/categories. Results: The study revealed four themes: experience of helplessness, burdens, and burnout; the need for social and technical support to manage OL; the propensity to consider OL as a positive opportunity; and the deficiency of OL in fulfilling the educational outcomes of clinical courses. Conclusions: Abrupt remote OL was a</p>	

challenge to clinical encounters. This format was very stressful; however, it was also useful. The current study highlighted the need for further research on the effectiveness of remote OL platforms in regard to the achievement of the intended learning outcomes of clinical courses.

Key Takeaway

This study uses the term preparedness as opposed to readiness and the authors do not engage with the existing online learning readiness literature. Nevertheless, this study provides good insights into the student voice. The findings are interesting and contain learnings for other contexts but there is limited explanation of how the data was analysed. Difficulties with balancing other commitments is a finding that has not been identified in other accounts of readiness. The study also touches on the challenge of teaching skills-based courses online.

19. Medication or band aid? Revisiting university students' readiness for online education

Authors	Cinar, M., Ekici, M., & Demir, O..
Date	2021
Full Citation	Cinar, M., Ekici, M., & Demir, O. (2021). Medication or band aid? Revisiting university students' readiness for online education. <i>Turkish Online Journal of Distance Education</i> , 22(2), 176-191.
URL	https://files.eric.ed.gov/fulltext/EJ1290800.pdf
Region	Asia / Europe
Country	Turkey
Discipline	Cross-disciplinary
Theoretical Framework	Yes
Methodology	Quantitative Survey
Measure / Instrument	Existing Scale
Sample Size	100-500
Readiness Dimensions Investigated	Technology Proficiency; Online Learning Efficacy; Self-directedness; Learning motivation; Learner Control; Online

	Communication Self-Efficacy
Implications for Practice	Yes
Implications for Policy	Yes
Keywords	Distance Education; Online Education; Readiness; Undergraduate Students; COVID-19 Pandemic

Abstract

In the pandemic period we are currently in, online education has replaced face-to-face learning activities on a global scale. Institutions that pursue online education programs commonly assume that online learners are ready for this mode of learning. However, online education programs attract attention due to their remarkably high drop-out rates. This begs the question as to why some students are more able to benefit from online education, and demands to reveal the underlying reasons for such a situation. In this regard, the present study explores students' e-readiness for the changeover phase to online education, and how this differs in terms of a range of variables. 428 volunteer undergraduate students from 59 departments across 33 universities in Turkey were recruited to the study. The data collection tools consist of a personal information form and an online education readiness scale. The results indicate that university students' readiness levels for online education were above medium level of the scale. As for the factors which determine online education readiness, it was found that university students have a high level of internet self-efficacy, yet their motivation towards online education is considerably low. In addition, their online education readiness differs significantly in terms of personal computer ownership, internet connection at home, major, and daily internet usage duration, gender, and online education experience, whereas no statistically significant difference was identified in terms of grade year at the university. A significant interaction between gender and online education experience was ascertained as well.

Key Takeaway

This study is well-grounded in existing online learning readiness literature. The literature review provides a useful overview of the dimensions of online learning readiness that have been investigated by studies over the years. The online education readiness scale developed by Yurdugul and Demir (2017) is used to measure students' online learning readiness. Independent variables investigated are similar to those chosen by others in the field. Unsurprisingly, device and internet access had an impact on readiness, however, level of education did not.

20. First-year students' preparedness for an online dental curriculum

Authors	Patterson, E., Barizan Bordin, T., & Stephens, M.
Date	2021
Full Citation	Patterson, E., Barizan Bordin, T., & Stephens, M. (2021). First-year students' preparedness for an online dental curriculum.

	<i>Journal of Dental Education</i> , 85(8), pp.1325-1328.
URL	https://pubmed.ncbi.nlm.nih.gov/33937980/
Region	North America
Country	United States
Discipline	Health
Theoretical Framework	No
Methodology	Qualitative & Quantitative
Measure / Instrument	New Scale
Sample Size	100-500
Readiness Dimensions Investigated	Not specified
Implications for Practice	No
Implications for Policy	No
Keywords	COVID-19; Dental Education; Diversity Equity Inclusion; Online Learning; Student Attitudes
Abstract	
<p>The COVID-19 pandemic has forced dental schools to rapidly adapt complex curricula for distance learning. In order to design high-quality and effective online educational interventions and adapt dental curricula to the post pandemic "new normal," it is crucial to understand students' preparedness for and attitudes toward this rapid and unanticipated pedagogical shift. This survey study (58% response rate) explored entering first-year dental students' attitudes and beliefs regarding online learning and their prior experiences with various online activities. Students' experiences varied widely, but concern about the impact of personal or life stressors on their academic performance and fear of cheating on online exams were common. Students in academic programs immediately preceding dental school were significantly more confident in their computer-based learning skills. Additional interventions may be needed that prepare students for success in future online courses and to lessen potential disparities among students from diverse social and educational backgrounds.</p>	
Key Takeaway	

This is a short paper resulting in little elaboration on the theoretical and conceptual grounding of the study. Preparedness for online learning appears to be conceptualised and measured as students' levels of comfort with various commonly used engagement and teaching activities for online learning although this is not clear. Descriptive statistics show that students reported varying levels of discomfort engaging in learning activities and interactions online. The most interesting findings stem from students' attitudes and beliefs about online learning. Students feared that they might be perceived as cheating in their exams in an online environment. They also had concerns about the potential impact of personal or life stressors on their academic performance given the distractions, social isolation, and lack of space while learning at home.

21. Exploring the factors influencing the readiness of faculty and students on online teaching and learning as an alternative delivery mode for the new normal

Authors	Callo, E., & Yazon, A.
Date	2020
Full Citation	Callo, E., & Yazon, A. (2020). Exploring the factors influencing the readiness of faculty and students on online teaching and learning as an alternative delivery mode for the new normal. <i>Universal Journal of Educational Research</i> , 8(8), 3509-3518.
URL	https://www.hrpub.org/journals/article_info.php?aid=9556
Region	Asia-Pacific
Country	Philippines
Discipline	Cross-disciplinary
Theoretical Framework	No
Methodology	Quantitative Survey
Measure / Instrument	New Scale
Sample Size	500+
Readiness Dimensions Investigated	Technology Proficiency; Device Access and Connectivity
Implications for Practice	Yes

Implications for Policy	Yes
Keywords	Readiness on Online Teaching and Learning; Familiarity and Capability; Device Access and Connectivity; Preparedness; Self-efficacy; Experience with Technology
Abstract	
<p>The Laguna State Polytechnic University (LSPU) joins the Philippine government with all its actions by launching an initiative to take care of its students and employees, and the academic community amid the spread of the COVID-19 disease. This descriptive-correlational study investigated the factors influencing the readiness in online teaching and learning as an alternative delivery mode to continue the teaching-learning process, even the absence of face-to-face interactions between teachers and students. The content-validated and researchers-made online survey instrument, which reported an excellent reliability index of Cronbach $\alpha = 0.95$, was administered via a google form. Responses from 348 faculty and 7,205 students at the university were analyzed using descriptive statistics such as frequency count, percent, mean, and standard deviation. Multiple linear regression analysis was employed to determine the significant predictors of respondent readiness. The results revealed that respondent familiarity and capability, preparation, device and access connectivity, self-efficacy, and experience with technology significantly influence their readiness on the conduct of online teaching and learning modality. It is concluded that faculty and student readiness on online teaching and learning is determined by their competence, accessibility of ICT tool, preparedness, confidence in their ability to use technology, and exposure to e-learning materials. Hence, the university and in the broader scope, the Commission on Higher Education (CHED), may conduct series of training for teachers as a capacity building to equip them with knowledge and competencies on the use of flexible or blended learning. Further, a university-wide learning system may be designed, adopted, and implemented in case the Enhanced Community Quarantine will not be lifted for a longer period.</p>	
Key Takeaway	
<p>The most notable aspect of this study is the large sample. Despite demonstrating an awareness of existing literature, the authors develop their own conceptual framework and instruments. In this regard, it is noted that some of the independent variables investigated are often included as dimensions of online learning readiness in other studies e.g. technology familiarity and capability. Discussion and interpretation of the results is limited and the style used to report results is also difficult to follow, reducing the overall impact of the paper.</p>	

22. ICT-supported students' independent work in the ESP context: The new reality of tertiary education	
Authors	Shumeiko, N., & Nypadymka, A.
Date	2021
Full Citation	Shumeiko, N., & Nypadymka, A. (2021). ICT-supported students' independent work in the ESP context: The new reality of tertiary

	education. <i>Advanced Education</i> , 18, 79-91.
URL	https://www.researchgate.net/publication/353742728_ICT-SUPPORTED_STUDENTS%27_INDEPENDENT_WORK_IN_THE_ESP_CONTEXT_THE_NEW_REALITY_IN_TERTIARY_EDUCATION
Region	Europe
Country	Ukraine
Discipline	Humanities & Social Sciences
Theoretical Framework	No
Methodology	Qualitative & Quantitative
Measure / Instrument	New Scale
Sample Size	100-500
Readiness Dimensions Investigated	Social Technology Familiarity; Technology Proficiency; Perceptions and Experience
Implications for Practice	No
Implications for Policy	No
Keywords	Information and Communication Technology; Webucation; English for Specific Purposes; Independent Work; Tertiary Education; Coronavirus Pandemic.
Abstract	
<p>The article aims at conducting empirical research of university students' readiness to handle independent work while studying the English for Specific Purposes (ESP) course, subject to the availability of Information and Communication Technologies (ICTs). In order to accomplish the objective of the article, a mixed methods research was applied. According to the research methodology, the questionnaires were conducted during the first semester of the academic year 2019/20 and then in the first semester of the academic year 2020/21 at the Kyiv National University of Trade and Economics. The investigation covered the period before the outset of the pandemic when a blended learning approach included instructor-led classroom training and e-learning elements; and then during the time of the COVID-19 pandemic in Ukraine when webucation was in line with the priorities of the training process. The participants of the study were first-year and second-year students of non-linguistic specialities. The scientific research reflected that teaching ESP was</p>	

focused on enhancing foreign language learning in the particular field of study such as IT, law, trade, marketing, management or economics, to equip students with the oral and written comprehension and speaking skills that they would need to leverage partnerships with international interlocutors in the business community. The obtained results confirmed the high value of the resources available online for studying ESP as an academic discipline in university-level curricula. The analysis of data showed that during the pandemic almost equal percentages of the respondents faced the challenges that accompanied the process of learning English online. Students noted all four proposed options that characterised the disadvantages of completing the assignments independently, namely the communication vacuum, difficulties in choosing supplemental instructional materials, as well as a lack of self-discipline and control. The outcome confirmed the need to assist students' independent work. To meet that demand, the authors carried out a Strength, Weakness, Opportunity, and Threat (SWOT) Analysis related to the use of ICTs within the organising framework of students' independent work while teaching ESP during a pandemic. It has been concluded that the opportunities and threats, as well as the strengths and weaknesses, identified through the SWOT analysis, characterise the advantages, drawbacks and peculiarities that emerge in the process of providing guidance for students' independent work in the study of ESP, integrating them into a coherent whole.

Key Takeaway

Although the authors describe this study as mixed methods, qualitative data is only obtained from open-ended questions in the survey and there is no reference to such data in the text. There is no engagement with existing literature and no conceptual or theoretical framework is described. Analysis was largely descriptive in nature. SWOT analysis is an innovative takeaway.

23. Impacto de la preparación de profesores y estudiantes en la adopción del aprendizaje virtual en medio de Covid-19 [Impact of Faculty and Student Readiness on Virtual Learning Adoption amid Covid-19]

Authors	Kabir, M. R.
Date	2020
Full Citation	Kabir, M. R. (2020). Impacto de la preparación de profesores y estudiantes en la adopción del aprendizaje virtual en medio de Covid-19. <i>Revista Internacional de Educación para la Justicia Social</i> , 9(3), 387-414.
URL	https://revistas.uam.es/riejs/article/view/riejs2020_9_3_021/13129
Region	Asia-Pacific
Country	Bangladesh
Discipline	Cross-disciplinary

Theoretical Framework	No
Methodology	Quantitative Survey
Measure / Instrument	New Scale
Sample Size	100-500
Readiness Dimensions Investigated	Technology Proficiency; Learner Control; Online Communication Self-Efficacy
Implications for Practice	No
Implications for Policy	Yes
Keywords	COVID-19; Higher Education; Social Imbalance; Technology Adoption; Virtual Learning
Abstract	
<p>The deadly effect of Covid-19 has changed the world dramatically. The education sector is one of the worst sufferers due to the official closures of educational institutions worldwide. The government of Bangladesh has declared all the on-campus activities shut in March 2020. This paper explains the effect of faculty and student readiness in adopting virtual classes considering the mediating effect of technology adoption intention. Teachers and students from private and public universities in Bangladesh are surveyed for this research. The findings revealed that the private universities are well ahead of providing online education as their faculty and students are ready with logistics and mindset to adopt technology-based virtual learning while the public university stakeholders are yet to initiate it. It is concluded that the lack of readiness of public universities will create a massive gap between public and private university education and rural and urban students as well. The proposed model of this research can help the policymakers and the government in formulating policy guidelines for bringing all the students and teachers on virtual education platforms irrespective of their university affiliations.</p>	
Key Takeaway	
<p>The findings of this study highlight the differences between private and public universities in Bangladesh, in terms of the adoption of online learning during Covid-19. Given the relationship identified between readiness levels and online learning adoption, the authors attribute the higher levels of online learning adoption in private universities to higher levels of faculty and student readiness in such institutions. However, they fail to acknowledge other factors that may be contributing to these differences.</p>	

24. New Norms of Online Teaching and Learning: Covid-19 Semester Experience for

Universiti Malaysia Terengganu Students	
Authors	Mansor, N. R., Ab Rahman, A. H., Azza J., A. T., Abd Rashid, R., & Ain Chua, N.
Date	2021
Full Citation	Mansor, N. R., Ab Rahman, A. H., Azza J., A. T., Abd Rashid, R., & Ain Chua, N.(2021). New Norms of Online Teaching and Learning: Covid-19 Semester Experience for Universiti Malaysia Terengganu Students. <i>Academic Journal of Interdisciplinary Studies</i> , 10(4), 248.
URL	https://eric.ed.gov/?id=EJ1267359
Region	Asia-Pacific
Country	Malaysia
Discipline	Fisheries
Theoretical Framework	No
Methodology	Quantitative Survey
Measure / Instrument	New Scale
Sample Size	100-500
Readiness Dimensions Investigated	Technology Proficiency; Device Access and Connectivity
Implications for Practice	Yes
Implications for Policy	Yes
Keywords	Pandemics; New Norms; Online Teaching and Learning
Abstract	
<p>The COVID-19 pandemic has affected the national education agenda at all levels of education. New Teaching and Learning (T&L) online norms have been executed except for specific academic programs and subjects only since 18 March 2020 when the Movement Control Order (MCO) was administered and continued to this day. To guarantee students' continuity of education without online T&L dropout, online face-to-face (Synchronous) or not face-to-face (Asynchronous) is now become</p>	

the primary approach and method platform with many virtual education applications. Therefore, this research examined students' readiness to follow online teaching and learning and analysed the impact of online T&L on the national education agenda. This study involved 133 students of Diploma in Fisheries, Universiti Malaysia Terengganu, for the first semester of 2020-21. Data were obtained through a questionnaire using Google Form and presented to students by sharing links to their WhatsApp group in the final week of study. The questionnaire was adapted from several instruments related to various aspects of online T&L during the COVID-19 pandemic. The outcomes revealed that most students were among Gen-Z with digital literacy background. Thus, it was assisting them having a high level of readiness to face online T&L. In terms of the availability of device infrastructure, internet access, e-Learning, and computers, most (80%) have mastered it. Only (20%) have low proficiency due to limited experience using computers and gadgets due to family constraints and their literacy levels. The research conclusion recommends a consecutive enhancement in curriculum structure flexibility, delivery, evaluation; internet accessibility and digital gap, and self-motivation of students entering the era of the self-regulated learner. Transformation demands the strategic cooperation of various parties in educational institutions, government agencies, the private sector, NGOs, and people's leaders in the interest of the country's advancing education relevant to the era of global technology-oriented education and digital infrastructure.

Key Takeaway

The main contribution of this paper appears to be its engagement with the national education agenda in Malaysia. However, from a digital readiness perspective there is no engagement with existing literature. The authors provide no theoretical or conceptual framework for their investigation and there are important methodological details omitted. As a result the impact of this study is difficult to ascertain.

25. Impact of online learning readiness on students satisfaction in higher educational institutions

Authors	Kumar, S.P.
Date	2021
Full Citation	Kumar, S.P. (2021). Impact of online learning readiness on students satisfaction in higher educational institutions. <i>Journal of Engineering Education Transformations</i> , 4, pp. 64-70.
URL	http://www.i-scholar.in/index.php/JEETRIT/article/view/205961/191975
Region	Asia-Pacific
Country	India

Discipline	Cross-disciplinary
Theoretical Framework	Yes
Methodology	Quantitative Survey
Measure / Instrument	Existing Scale
Sample Size	100-500
Readiness Dimensions Investigated	Technology Proficiency; Self-directedness; Learning motivation; Learner Control; Online Communication Self-Efficacy
Implications for Practice	No
Implications for Policy	No
Keywords	Online Learning Readiness; Satisfaction; Smartpls; Higher Educational Institutions
Abstract	
<p>Recent pandemic has fueled the growth of online learning like never before among the students of all levels. It has opened up tremendous opportunity to evaluate teaching practices through empirical investigation. The purpose of this paper is to examine the relationship between the learners' readiness and their satisfaction towards online education. Online learning readiness is defined as skills needed by students to learn. It emphasises on self-learning management and understanding experiences of self-learning (Smith, 2005). Literature suggests that there are studies that explored the relationship between online learning readiness, academic motivation, perceived learning, cooperative working, achievement and continuation of education (Davis, 2006; Horzum, Kaymak & Gungoren, 2015). However, scholars paid less attention to the relationship between online learning readiness and student satisfaction among undergraduate engineering students. Research by Gunawardena and Duphorne (2000) has identified a direct connection between learning readiness and satisfaction of learning experiences. However, their study was on the adult who had undergone distance study through computer conferencing model. The present study considers a blended online learning model. Data were collected from 155 students who are studying an undergraduate course in Indian universities. The proposed causal relationship was examined with SmartPLS 3, as it is more suitable for the moderate sample size. The research showed a positive relationship between students' online learning readiness and satisfaction. The findings demonstrated a significant relationship between the increasing levels of online learning readiness and student satisfaction. Administrators who are at the helm of responsibility of educational institutions should provide all the required facilities for the teachers to embrace online teaching.</p>	
Key Takeaway	
<p>This study sought to ascertain to what extent the five dimensions of OLRs scale (Hung et al. 2010) independently predict student satisfaction with online learning and which one is the strongest predictor. It draws on a relatively small convenience sample of 155 students at Indian universities.</p>	

While the paper reports detailed statistical analysis of the data and claims to have made a unique contribution to the existing knowledge base, the study fails to acknowledge several important research limitations. Importantly, statistical significance is not causal, although at least the author does caution against generalising the findings. The most useful aspect of the findings is illustrating the importance of self-efficacy for learning online.

26. Improving student engagement in online learning: How the online learning readiness scale and self-assessment matter?

Authors	Cholifah, P. S., Rini, T. A., Nuraini, N. L. S., Satriani, F. Y., & Saidah. K.
Date	2020
Full Citation	Cholifah, P. S., Rini, T. A., Nuraini, N. L. S., Satriani, F. Y., & Saidah. K. (2020). Improving student engagement in online learning: How the online learning readiness scale and self-assessment matter? 6th International Conference on Education and Technology (ICET), 2020, pp. 218-223, doi: 10.1109/ICET51153.2020.9276570.
URL	https://ieeexplore.ieee.org/abstract/document/9276570
Region	Asia-Pacific
Country	Indonesia
Discipline	Teacher Education
Theoretical Framework	Yes
Methodology	Quantitative Survey
Measure / Instrument	Existing Adapted Scale
Sample Size	100-500
Readiness Dimensions Investigated	Technology Proficiency; Organisation/ Time Management; Self-directedness

Implications for Practice	No
Implications for Policy	No
Keywords	Online Learning; Online Readiness Level; Learning Management System; Self-assessment
Abstract	
<p>This study aims to: (1) analyze students' online learning readiness to carry out the online learning process; and (2) photograph the implementation of online learning related to the student self-assessment rubric. The research is quantitative descriptive research. Participants are Elementary School Teacher Education students, which consists of 9 classes (N = 346) who are students of the 3rd semester and 5th semester of the year 2020. Questionnaires used is a modification of Penn State University on Questionnaire Readiness Learning Online (2020) tested the validity in each item and meets the instrument reliability test (KR20 = 0.867). The result shows most respondents fall into the high readiness category in online learning (60%). Students have demonstrated the ability to complete the task at the scheduled time and meet the appropriate criteria and rate themselves in SIPEJAR (MOODLE-based).</p>	
Key Takeaway	
<p>The main findings of this study are that participants report high levels of readiness for online learning, although it is noted that they were familiar with a blended learning format prior to the pandemic. This seems to be a crucial factor but the type of past experience is not well described in the paper. Insead, the authors claim with limited evidence the findings concur with past research showing students are likely to engage with the internet due to their generation. Overall the validity and usefulness of the results are difficult to judge due to the lack of contextual information.</p>	

27. Geospatial analysis of SICS students readiness for online learning	
Authors	Malian, R., Nabos, J., Nabos, C., & Mandalihan, J.
Date	2020
Full Citation	Malian, R., Nabos, J., Nabos, C., & Mandalihan, J. (2020). Geospatial analysis of SICS students readiness for online learning. <i>IEEE 12th International Conference on Humanoid, Nanotechnology, Information Technology,</i>
URL	https://ieeexplore.ieee.org/document/9400124
Region	Asia-Pacific

Country	Philippines
Discipline	IT and Computing Sciences
Theoretical Framework	No
Methodology	Quantitative Survey
Measure / Instrument	New Scale
Sample Size	500+
Readiness Dimensions Investigated	Internet capability; Device Access and Connectivity; Perceptions and Experience
Implications for Practice	Yes
Implications for Policy	No
Keywords	Online Learning; Student Readiness; Geospatial Analysis
Abstract	
<p>In March 2020, the world was shocked by the COVID-19 pandemic; this situation challenged the education system across the world. Many academic institutions that were earlier reluctant to change their traditional pedagogical approach had no option but to shift entirely to online learning. However, the readiness of students to adopt the new system is left behind. This study explores geographic profile of students, internet capability, learning resources and prior knowledge in online learning. The researchers employ emerging platform and algorithm for collecting and analyzing geospatial data in order to determine student readiness for online learning. The results show that the SICS students are ready for internet access and learning resources required in online learning. Finally, this paper argues for further data gathering to improve the analysis to understand all students' situation better.</p>	
Key Takeaway	
<p>The research is localised to the Philippines. There is no acknowledgement of the existing literature on readiness for online learning or explicit theoretical framework underpinning the study. The most interesting feature of the research is the use of Geospatial Analysis to identify where the survey participants reside in the Philippines and what can be inferred from their physical location. The research does suggest that the main barrier to online learning readiness in the Philippines is good access to the Internet in the first place.</p>	

28. Online learning readiness among university students in Malaysia amidst COVID-19	
Authors	Chung, E., Subramaniam, G., & Dass, L. C.
Date	2020
Full Citation	Chung, E., Subramaniam, G., & Dass, L. C. (2020). Online learning readiness among university students in Malaysia amidst COVID-19. <i>Asian Journal of University Education</i> , 16(2), 46-58.
URL	https://eric.ed.gov/?id=EJ1267359
Region	Asia-Pacific
Country	Malaysia
Discipline	Cross-disciplinary
Theoretical Framework	Yes
Methodology	Quantitative Survey
Measure / Instrument	Existing Scale
Sample Size	100-500
Readiness Dimensions Investigated	Technology Proficiency; Self-directedness; Learning motivation; Learner Control; Online Communication Self-Efficacy
Implications for Practice	Yes
Implications for Policy	Yes
Keywords	Online Learning; Student Readiness; Internet Access; Malaysia
Abstract	
Universities around the world have been directly and indirectly affected due to the Covid-19 pandemic. Within the span of less than one month, the traditional face-to-face learning has been replaced by online learning to ensure education continuity. This paper sets out to examine online learning readiness among university students who have been thrown in at the deep end. It aims to investigate if demographic factors make any difference in their readiness to learn, online learning experiences and intention to continue using online learning. It also examines their preferred methods	

of online learning and challenges they face. Data collected from 399 students in two different online learning courses in Malaysia showed that respondents are generally ready for online learning. However, females are found to be more ready than male, degree students are more ready than diploma students while female students and degree students are more satisfied with online learning and have better learning experiences compared to male and diploma students. More than half of the respondents indicated that if given a choice, they do not want to continue with online learning in the future. Most respondents preferred online learning via pre-recorded lectures uploaded to Google Classroom and YouTube. While the biggest challenge for degree students is internet connectivity, for diploma students, it is the difficulty in understanding the content of the subject. Moving forward, government, telecommunication companies and universities should invest in developing internet infrastructure across the country as online learning will be the new norm in the foreseeable future. University also needs to provide further training to enhance academics' online teaching skills to ensure lessons are delivered more effectively.

Key Takeaway

This study is anchored in Hung et al. (2010) 'Online Readiness Scale' that provides a theoretical framework for analysing data, but there are no citations of more contemporary literature on the concept of student readiness. While the study provides a detailed quantitative analysis of the findings based on this scale, there is no qualitative data offering first-hand insights into the student experience. The most valuable aspect of the study is confirmation that lack of adequate internet access is a real and significant barrier to online learning before other dimensions of readiness become important factors.

29. Pandemic pedagogy in online hands-on learning for IT/IS courses

Authors	Zha, S., & He, W.
Date	2020
Full Citation	Zha, S., & He, W. (2020). Pandemic pedagogy in online hands-on learning for IT/IS courses. <i>Communications of the Association for Information Systems</i> , 48, DOI: 10.17705/1CAIS.04811
URL	https://aisel.aisnet.org/cais/vol48/iss1/13/
Region	North America
Country	United States
Discipline	IT and Computing
Theoretical Framework	No

Methodology	Self-study
Measure / Instrument	None
Sample Size	NA
Readiness Dimensions Investigated	Not specified
Implications for Practice	Yes
Implications for Policy	No
Keywords	Hands-on learning; Online Communication; Equity and Inclusiveness; Readiness Assurance
Abstract	
<p>Due to the COVID-19 pandemic, many educational institutions have transitioned to online instruction. As a result, instructors need to investigate online small group learning opportunities to bond with their students who feel isolated from their peers because of social distancing guidelines. In this article, we discussed three key issues in online hands-on learning. These issues were interactions, equity and inclusive participation, and students' readiness for hands-on or higher cognitive-level learning. We reflected our teaching experience during the COVID-19 and offered suggestions to help instructors plan and implement online small group hands-on learning.</p>	
Key Takeaway	
<p>This paper reports the experiences of two academics as they taught online during the first period of the COVID-19 crisis. It does not report data from students or share any empirical evidence to support these personal reflections. The three main findings generally resonate with what is reported elsewhere in the literature but there is a weak conception of student readiness. The most original aspect of the paper is the focus on promoting 'hands on' learning and small group interaction in online learning contexts.</p>	

30. Prospective elementary teachers' perspectives on online mathematics learning during Coronavirus outbreak	
Authors	Putra, Z., Witri, G. Sari, I.
Date	2020

Full Citation	Putra, Z., Witri, G. Sari, I. (2020). Prospective elementary teachers' perspectives on online mathematics learning during Coronavirus outbreak. <i>Journal of Physics: Conference Series</i> , 1655 012057. doi:10.1088/1742-6596/1655/1/012057
URL	https://iopscience.iop.org/article/10.1088/1742-6596/1655/1/012057/pdf
Region	Asia-Pacific
Country	Indonesia
Discipline	STEM
Theoretical Framework	Yes
Methodology	Qualitative
Measure / Instrument	New Scale
Sample Size	10-50
Readiness Dimensions Investigated	Device Access and Connectivity; Online Learning Efficacy
Implications for Practice	No
Implications for Policy	Yes
Keywords	Initial Teacher Education; Mathematics; Online Learning; Student Readiness
Abstract	
<p>Coronavirus disease (COVID-19) outbreaks have changed learning models from face-to-face to online learning. This change has an impact on students' readiness in participating in learning. To deal with this situation, this study aims to investigate prospective elementary teachers' perspective on online mathematics learning. Thirty-eight prospective elementary teachers from a public teacher institution in Pekanbaru, Riau, Indonesia, participated in this study. The informants were asked to answer an open question at the end of the course related to their views on online mathematics learning during COVID-19 pandemic. The findings showed that the online course was less effective due to poor internet connection and limited internet quota. Those problems affected their performance on understanding the mathematics contents, interacting with the teacher and other students, and doing assignments. However, few prospective teachers provided positive attitude toward online mathematics learning. An implication for this study was the government must intervene and provide support for online learning success.</p>	

Key Takeaway

A very small scale study drawing on a sample of student teachers with a focus on mathematics education. The main strength of the study is the inclusion of direct quotes from students which does help to convey a sense of learner voice. The main finding is consistent with other studies in developing countries where poor or inadequate internet access is the main barrier to online learning. Additionally, student perceptions of the inferior quality of online learning is another barrier to how they engage with instructors. While the study is anchored in the TPACK framework there is no evidence of the literature on student online readiness informing the research design or data analysis.

31. Realistic job preview as an alternative tool to improve student readiness for online learning

Authors	Latheef, Z.I., Robinson, R., & Smith, S.
Date	2021
Full Citation	Latheef, Z.I., Robinson, R., & Smith, S. (2021). Realistic job preview as an alternative tool to improve student readiness for online learning. <i>Online Learning</i> , 25(2), 208-232.
URL	https://olj.onlinelearningconsortium.org/index.php/olj/article/view/2216
Region	North America
Country	United States
Discipline	Business
Theoretical Framework	Yes
Methodology	Quantitative & Qualitative
Measure / Instrument	Existing Scale
Sample Size	100-500
Readiness Dimensions Investigated	Technology Proficiency; Self-directedness; Need for Online Learning; Academic Skills

Implications for Practice	Yes
Implications for Policy	Yes
Keywords	Online Readiness; Realistic Job Preview; Self-assessment
Abstract	
<p>Readiness for online learning has been established as a key component of student success in online classes. In addition, the COVID-19 pandemic has underscored how vital being prepared for online can be. This paper highlights an orientation technique widely used in the business field, namely Realistic Job Preview (RJP), as a method to prepare students for what online learning might be like. Our research proposes an RJP would help students adapt to their new role as online learners. For the purposes of this study, we developed a video providing a realistic preview of online learning following recommendations from RJP research. We then conducted a mixed methods study to examine student perceptions of our realistic preview video and an online readiness self-assessment. Overall, our findings provide strong evidence for the use of RJP as a strategy to improve student readiness for online learning.</p>	
Key Takeaway	
<p>An innovative well-conceptualised and well-grounded study. It demonstrates a critical understanding of existing measures of student readiness and develops an innovative solution to better prepare students for online learning success. More specifically, it develops and then collects feedback from learners using a technique widely used in the business field, namely Realistic Job Preview (RJP), as a method to prepare students for what online learning might be like. This video technique is perceived to be a valuable strategy for improving student readiness. Thus, the study opens up a new line of inquiry and demonstrates how new technology can also be used to help prospective online students to learn how to learn online.</p>	

32. Saudi university students' perceptions towards virtual education during Covid-19 pandemic: A case study of language learning via Blackboard	
Authors	Al-Nofaie, H.
Date	2020
Full Citation	Al-Nofaie, H. (2020). Saudi university students' perceptions towards virtual education during Covid-19 pandemic: A case study of language learning via Blackboard. <i>Arab World English Journal (AWEJ)</i> , 11(3), 4-20. DOI: https://dx.doi.org/10.24093/awej/vol11no3.1
URL	https://awej.org/saudi-university-students-perceptions-towards-virtual-education-during-covid-19-pandemic-a-case-study-of-

	language-learning-via-blackboard/
Region	Middle-East
Country	Saudi Arabia
Discipline	Humanities & Social Sciences
Theoretical Framework	Yes
Methodology	Quantitative & Qualitative
Measure / Instrument	New Scale
Sample Size	10-50
Readiness Dimensions Investigated	Technology Proficiency
Implications for Practice	Yes
Implications for Policy	No
Keywords	Blackboard; Language Learning; Perceptions; Saudi University Students; Virtual Education
Abstract	
<p>Following the spread of COVID-19, many parts of the world have fully shifted to virtual education. Issues regarding students' readiness for this mode of education have been the main concerns in countries where students are not used to virtual classes. This article presents a case study that investigated the perceptions of Saudi university students towards learning via Blackboard, during the unusual mode of delivering education caused by Covid-19. The aim was to identify the merits and challenges of online learning in order to understand the students' learning experiences during the pandemic period and suggest practical solutions. The participants were 25 university students majoring in the English language at the bachelor of arts level. The instructor (the author) taught them classes on morphology. Based on an analysis of the students' learning logs, the students preferred the asynchronous environment to the synchronous one due to its flexibility. However, unlike research findings identified in relevant studies on virtual education for language learning, the present study reveals that virtual education is not always appealing for students. This study is one of the few studies that compare the synchronous and asynchronous aspects of BB in the Arabian contexts. It is hoped that this study will help university authorities to set out more practical educational plans in the case of emergencies. Also, this study will inform the practices of university instructors and designers of professional development courses in the near future.</p>	

Key Takeaway

An interesting study drawing on student logs to provide 'in time' analysis of the online learning experience. While the research is not anchored in the literature on student readiness for online learning, it does locate the analysis in seminal theoretical work on learning metaphors (Sfard, 1998). The use of these metaphors adds a richer pedagogical dimension to the study. However, the small sample size and context limits wider generalisability and contribution to the student readiness literature. Nevertheless, the research makes a useful contribution to understanding how to design learning for both synchronous and asynchronous dimensions.

33. Physics undergraduate students' perceptions of online learning during the transition period to the new normal era

Authors	Surahman, E., & Sujarwanto, E.
Date	2021
Full Citation	Surahman, E., & Sujarwanto, E. (2021). Physics undergraduate students' perceptions of online learning during the transition period to the new normal era. <i>Journal of Physics: Conference Series</i> , 1869 012159. doi:10.1088/1742-6596/1869/1/012159
URL	https://iopscience.iop.org/article/10.1088/1742-6596/1869/1/012159/pdf
Region	Asia-Pacific
Country	Indonesia
Discipline	STEM
Theoretical Framework	No
Methodology	Quantitative Survey
Measure / Instrument	New Scale
Sample Size	100-500
Readiness Dimensions Investigated	Technology Proficiency; Device Access and Connectivity; Perceptions and Experience; Online Learning Efficacy; Emotion

Implications for Practice	No
Implications for Policy	Yes
Keywords	Physics; Undergraduate Students; Online Learning; Readiness; Indonesia
Abstract	
<p>The Covid-19 pandemic forced the Indonesian government to release learning from home policy. This policy also applies to the Physics Education of Siliwangi University. This study aims to know undergraduate students' perceptions of online learning during the transition period from face-to-face learning to online learning in Physics context. Undergraduate students' perceptions of online learning are seen from aspects of access to technology, technology for learning, online learning readiness, and attitude towards digital technology literacy. The data is collected by an online survey method. This research shows that most undergraduate students have sufficient facilities for online learning and have a positive attitude towards digital technology literacy. Another finding from the study is that the majority of students have difficulty accessing the fast internet (83.87%). Undergraduate students like a combination of online media learning and offline media learning (90.32%), but they do not like full online learning (98.06%). This research indicates that teachers should support students at online learning by providing proper Physics learning material and media. This research is expected to suggest better online learning and literacy technology in Physics context in the new normal era.</p>	
Key Takeaway	
<p>The main contribution of this small study at a policy level is illustrating how poor quality internet access is a significant barrier to online learning. Unfortunately, the research does not draw on the existing published literature on student readiness for online learning, which therefore limits its wider value beyond the local context. While the research reports that students are not predisposed to learning online, this finding is no doubt linked in part to the level of internet access. Of course, it may also be an outcome of the pedagogical model being adopted to teach online, but the paper does not elaborate on this aspect of the online learning experience.</p>	

34. Students' readiness for e-learning during the COVID-19 pandemic in a South-East Asian university: A Rasch analysis	
Authors	Adams, D., Chuah, K.M., Sumintono, B., & Mohamed, A.
Date	2021
Full Citation	Adams, D., Chuah, K.M., Sumintono, B., & Mohamed, A. (2021). Students' readiness for e-learning during the COVID-19 pandemic in a South-East Asian university: A Rasch analysis. <i>Asian Education and Development Studies</i> , 11(2), pp. 324-339. https://doi.org/10.1108/AEDS-05-2020-0100

URL	https://www.emerald.com/insight/content/doi/10.1108/AEDS-05-2020-0100/full/html
Region	Asia-Pacific
Country	Malaysia
Discipline	No Indication
Theoretical Framework	Yes
Methodology	Quantitative Survey
Measure / Instrument	New Scale
Sample Size	100-500
Readiness Dimensions Investigated	Technology Proficiency; Self-directedness; Device Access and Connectivity
Implications for Practice	Yes
Implications for Policy	Yes
Keywords	eLearning; Online Learning; COVID-19; University; Rasch Analysis
Abstract	
<p>Universities have shifted from face-to-face learning environments to e-learning in response to the COVID-19 pandemic. However, the sudden change to online teaching has raised concerns among lecturers about students' readiness for e-learning. This study investigates students' readiness for e-learning during the COVID-19 pandemic and specifically assesses any significant differences between students' gender, age, ethnicity, level of education, field of study and their readiness for an e-learning environment. The study employed a non-experimental quantitative research design. Data were gathered from a sample of 298 undergraduate and 101 postgraduate students. WINSTEPS Rasch model measurement software was used to determine the reliability and validity of the research instrument. Descriptive, inferential statistics and differential item functioning (DIF) test were used to assess students' readiness for an e-learning mode of instruction with the latter specifically analysing students' demographic factors and their readiness for an e-learning environment. Findings identified that most students are ready for an e-learning mode of instruction. Further analysis indicated that there were differences in students' readiness for e-learning based on their demographic profiles. This study provides insights on students' readiness towards e-learning, discusses implications for e-learning practices in higher education institutions during the COVID-19 pandemic and offers recommendations for future research. This study provides evidence of students' readiness for e-learning in respect to their gender, age, ethnicity, level of education and field of study. This information could help lecturers to reflect on their own teaching practices, adjust their teaching approaches and subsequently, develop appropriate e-learning methods that best suit the student</p>	

diversity in their classrooms.

Key Takeaway

A lengthy and well-written article drawing on a selected review of the literature. Unfortunately, the review overlooked some seminal publications in the area. Nevertheless, the research and subsequent analysis are grounded in five key domains of readiness which do cover some aspects defined in more contemporary literature. The study is notable for the way it analyses the data by demographic variables, with undergraduate students having more readiness for online learning than postgraduate students; but limited information is given on the field of study. Overall the findings reveal students were ready for an online learning mode of instruction but they struggled in self-directed activities. Notably, the paper also concludes that there is a need to engage students more as their voices could provide essential information for institutions to gauge their readiness and thus provide relevant interventions.

35. The effect of e-learning experience on readiness, attitude, and self-control / self-management

Authors	Hamutoglu, N., Unveren-Bilgic, E. N., Salar, H. C., & Sahin, Y. L.
Date	2021
Full Citation	Hamutoglu, N., Unveren-Bilgic, E. N., Salar, H. C., & Sahin, Y. L. (2021). The effect of e-learning experience on readiness, attitude, and self-control / self-management. <i>Journal of Information Technology Education: Innovations in Practice</i> , 20, 93-120. https://doi.org/10.28945/4822
URL	https://www.informingscience.org/Publications/4822?Source=%2FJournals%2FJITEIP%2FOverview
Region	Asia / Europe
Country	Turkey
Discipline	Instructional Technology
Theoretical Framework	Yes
Methodology	Quantitative & Qualitative
Measure / Instrument	Existing Scale

Sample Size	50-100
Readiness Dimensions Investigated	Technology Proficiency; Self-directedness; Learning motivation Learner Control; Online Communication Self-Efficacy; Online Learning Self-Efficacy
Implications for Practice	Yes
Implications for Policy	Yes
Keywords	e-learning Experience; Readiness; Attitude; Self-control; Self-management; Mixed-method

Abstract

This study aimed to reveal the effect of the previous Internet-based education (IBE) experiences of the students' readiness, attitude, and self-control / self- management variables towards the e-learning process, and also to determine their opinions. The institutions have made efforts to ensure the continuity of education through their learning management systems and the necessity of addressing the e-learning process from the perspective of students once again showed itself as an undeniable fact. Accordingly, the necessity to consider holistically the variables of readiness, attitude, and self-control/self-management, which affect students' adaptation to e-learning process, has once again emerged based on the relevant literature. This research based on the simultaneous mixed method considering the previous IBE experiences of 75 Computer Education and Instructional Technology (CEIT) students taking part in the study in Turkey. The quantitative results of the study were analyzed based on the single-group pre- and post-test weak experimental design. Qualitative results were obtained through the structured inter- view form and set an example for the case study.

The results showed that regardless of students' previous Internet-based education (IBE) experience, it is seen that increasing and continuous experience has a significant effect on the readiness, attitude and self-control / self-management variables towards the e-learning process. The main contribution of experimental results showed that IBE experience is effective on individuals' perceptions of internet self-efficacy, and has an impact on the self-learning skills of individuals. In addition to this, the e-learning experience has an impact on individuals' self- evaluation. It is also seen that the certificate presented to learners in the e-learning environment has a positive effect on students' attitudes towards e-learning processes. Finally, the experiences of e-learning processes, the methods used to transfer the content in the learning environment, the motivation and feedback provided to the learner also support the significant difference obtained in terms of readiness, attitude and self-control / self-management.

After the findings were analyzed holistically in depth, it has been observed that; if the contents offered to students in e-learning environments support their professional development, in this case, their attitudes, readiness (excluding the sub- dimension of learner control), and self-control/self-management skills for these environments differ significantly in the post-test. It is also among the results that students having previous IBE experience have not higher awareness levels on online communication self-efficacy, technology use self-efficacy, readiness for e-learning, e-learning predisposition, self-reinforcement, self-control management, although significantly found. The findings regarding the effectiveness of the experimental process are as follows: Although it is possible for the students having previous IBE experience to use these experiences within the course for their personal development, it has been seen that the observed differences regarding students' readiness, attitude, and self-control/self-management towards e-learning processes arise from the experimental operation.

It is recommended for the policy-makers and practitioners that while e-learning platforms were

designing, using different methods for delivering the content is as important as making the interaction meaningful and sustainable. In addition to this, to develop a positive attitude it is recommended that individuals' participation of an e-learning platform should be supported with a certificate. Researchers should test the obtained results by a well-structured e-learning platform with their recorded activities on the platform (e.g. in which section was used mostly by a learner etc.). Hence, the impact of IBE experiences might be discussed in an up level framework. Actually, this study is based on a mix design and the results were also meaningful especially considering the implacable global pandemic. It is clearly understood by this process that e-learning is very important. In line with this, to support the e-learning process (e.g. with the method while delivering the content, well-structured feedback, motivation strategies etc.) and make it sustainable, the increasing of individual's readiness, attitude, and self-control through the IBE would be indispensable. Future studies might focus on the longitudinal methods. It is worth to find out how the students' experiences affect the sustainability of the course content, and what should the program developer make to improve their course content in line with the findings of longitudinal studies.

Key Takeaway

A long article containing a lot of quantitative data with only short quotes from students providing more qualitative insights. The work is well-grounded in some of the contemporary literature citing several seminal studies on student readiness for online learning. However, the application of the methodology is unclear as is whether data was collected before or after the start of the COVID-19 crisis. There is no consideration given to ethical dimensions. The lesson that experience of learning online and more generally of using online technologies has an impact on readiness confirms previous studies. The implications and recommendations arising from the research are very general.

36. The factors predicting students' participation in online English courses

Authors	Suat, K.
Date	2021
Full Citation	Suat, K. (2021). The factors predicting students' participation in online English courses. <i>Eurasian Journal of Educational Research</i> , 91, 301-320.
URL	https://eric.ed.gov/?id=EJ1284059
Region	Asia / Europe
Country	Turkey
Discipline	Civil Aviation; Translation and Interpreting
Theoretical Framework	Yes

Methodology	Quantitative Survey
Measure / Instrument	Existing Scale
Sample Size	100-500
Readiness Dimensions Investigated	Technology Proficiency; Self-directedness; Learning motivation; Learner Control; Online Communication Self-Efficacy
Implications for Practice	Yes
Implications for Policy	Yes
Keywords	COVID-19; Online Learning Readiness; Turkey
Abstract	
<p>Due to the COVID-19 pandemic, which restricted face to face instruction, most of the educational institutions have been obliged to continue their education through distance education without examining the conditions necessary for effective online learning. The researcher who offered more than 100 class hours of English instruction realized that the students did not participate in online courses as much as expected. Therefore, this study aimed to examine the level of students' online learning readiness (OLR) and the factors predicting their participation in online English courses. The study employed a correlational research design to discover the relationship between variables. The sample included 177 students selected from the Departments of Civil Aviation and Translation and Interpreting. Data were collected using a validated and reliable OLR scale. This instrument was conducted as an online form, which included an additional part to obtain information about some characteristics of the sample, which were used to examine relationships. Data were analyzed using descriptive statistics and binary logistic regression. The findings revealed that the students had an average level of OLR. The results of logistic regression analysis indicated that students' department type, previous experience in online courses, computer ownership, computer/internet self-efficacy (CIS) and motivation for learning (ML) influenced students' participation in online courses, while internet limit, self-directed learning (SDL), learner control (LC) and online communication self-efficacy (OCS) were not significant variables influencing their participation frequency. Further research was suggested to examine the relationship between different predictors and the outcome variable. It was suggested to take actions to maximize students' participation for more learning gains.</p>	
Key Takeaway	
<p>A well-written study grounded in Hung et al. (2010) conception of readiness student, although more contemporary research is overlooked. The research would have been greatly enhanced by the addition of qualitative narratives to go with the numbers. Two interesting findings emerge from the research. Firstly, students who experienced distance education before tended to participate less frequently than the students who did not. A related finding is the students having a higher motivation to learn tended to participate less than the students who had less motivation. The paper suggests this may be due to the students not having a computer to use or they did not have sufficient computer/internet self-efficacy, which hindered their participation.</p>	

37. The impact of COVID-19 lockdown on UiTM Melaka Students' learning session	
Authors	Mazlan, N.A., Zolkapli, N.M., Ismail, W.M.W., Norwahi, N.A., & Saad, M.F.M.
Date	2021
Full Citation	Mazlan, N.A., Zolkapli, N.M., Ismail, W.M.W., Norwahi, N.A., & Saad, M.F.M. (2021). The impact of COVID-19 lockdown on UiTM Melaka Students' learning session. <i>Journal of Language and Linguistic Studies</i> , 17(2), 1045-1057. Doi: 10.52462/jlls.73
URL	https://www.jlls.org/index.php/jlls/article/view/2728/858
Region	Asia-Pacific
Country	Malaysia
Discipline	Cross-disciplinary
Theoretical Framework	No
Methodology	Quantitative Survey
Measure / Instrument	New Scale
Sample Size	100-500
Readiness Dimensions Investigated	Not specified
Implications for Practice	Yes
Implications for Policy	No
Keywords	COVID-19; Open Distance Learning; Restriction Movement Order; Student Understanding; Teaching Approach and Student Readiness; Technology Acceptance
Abstract	
The purpose of this study was to determine the impact of the Restricted Movement Order (RMO) due to COVID-19 to March - July 2020 semester students of Universiti Teknologi MARA (UiTM) Malacca. Through a confirmatory factor analysis, the student understanding scale was validated in three	

dimensions: technology acceptance, teaching approach and student readiness in the practice of Open and Distance Learning (ODL). The article also analysed the relationship between student understanding and the three variables. A total of 370 respondents had been selected using the purposive sampling method using SPSS analysis. The result showed that there is a weak relationship between the teaching approach and student understanding with the correlation of 0.355. It is followed by the moderate relationship between teaching approach and student understanding with the correlation of 0.613. Meanwhile, student readiness and student understanding have been identified as a very strong relationship with the correlations of 0.743. The findings also found that student readiness has the highest mean as compared to other factors. This result specified that the students of UiTM Melaka are not fully prepared mentally and physically for an inclusive ODL approach. They felt that ODL is very incumbering and difficult in understanding the content of learning sessions especially for the subjects related with calculations.

Key Takeaway

A very localised study to a Malaysian university. It does not anchor the research in an established conception of student readiness for online learning and there is limited information available on how the domain was measured in the data collection and analysis. Accordingly, the findings are quite general as they do not explore the different dimensions of readiness but the research does show that students require more support to be effective online learners. Overall, the failure to anchor the study in the readiness literature limits the wider value and generalisability of the findings.

38. The shift in teaching pedagogy for independent landscape design during the pandemic: An analysis of student performance in ODL

Authors	Ahmad, S., Mohd Hussain, N. H., Md Sakip, S. R., Mansor, A., Bahaluddin, A., & Ilias, N. H.
Date	2021
Full Citation	Ahmad, S., Mohd Hussain, N. H., Md Sakip, S. R., Mansor, A., Bahaluddin, A., & Ilias, N. H. (2021). The shift in teaching pedagogy for independent landscape design during the pandemic: An analysis of student performance in ODL. <i>Planning Malaysia</i> , 19(2). 131-140. https://doi.org/10.21837/pm.v19i16.958
URL	https://www.planningmalaysia.org/index.php/pmj/article/view/958
Region	Asia-Pacific
Country	Malaysia
Discipline	Landscape Design

Theoretical Framework	No
Methodology	Quantitative Survey
Measure / Instrument	New Scale
Sample Size	100-500
Readiness Dimensions Investigated	Device Access and Connectivity
Implications for Practice	Yes
Implications for Policy	No
Keywords	Independent Landscape Design; Online Distance Learning; Landscape Architecture; MOOC
Abstract	
<p>The teaching and learning environment have subsequently expanded. For the Independent Landscape Design course offered at UiTM Perak Branch, the online distance learning (ODL) has demonstrated the changes of delivery approach in teaching landscape design process. This design-based syllabus is more acquainted with face to face or physical teaching learning environment. Aligned with the Educational 5.0 @ Universiti Teknologi MARA that embraces values and future progressive thinking, this course has adopted MOOCCLAA350 to engage and equip these design students with significant understanding, graphic presentation skills as well as technical aspects related to design developments and constructions. This paper analyses student performance throughout the ODL implementation, adopting MOOC and other relevant online platforms during this Covid-19 pandemic outbreak. An online survey supported with a comparative analysis between semesters was conducted to evaluate the students' readiness, challenges and performance throughout the semester. Some tools and techniques to ensure the continuity of learning during the current pandemic are described. The findings revealed factors contributing to student performance and the reality behind the success of this new teaching strategy which is practical for landscape architecture programs and may also be relevant to other design-based programs or courses.</p>	
Key Takeaway	
<p>This localised study to a single university in Malaysia does not anchor the conception of student readiness in the existing literature and the concept is largely defined in terms of access to technology and the Internet. It is noteworthy, nevertheless, that students' main preference in terms of an online learning platform was WhatsApp. Not surprisingly the study highlights how access to the Internet is a significant barrier and raises the issue of financial constraints as students were required in some cases to purchase or upgrade their internet plan. Despite the challenges students and teaching staff faced over the semester, the research found that their academic performance measured by the number of A grades actually increased. This aspect of the study that links the student online experience to performance data makes it stand out from other research.</p>	

39. University students' interaction, Internet self-efficacy, self-regulation and satisfaction with online education during pandemic crises of COVID-19 (SARS-CoV-2)	
Authors	Hamdan, K.M., Al-Bashaireh, A.M., Zahran, Z., Al-Daghestani, A., AL-Habashneh, S., & Shaheen, A.M.
Date	2021
Full Citation	Hamdan, K.M., Al-Bashaireh, A.M., Zahran, Z., Al-Daghestani, A., AL-Habashneh, S., & Shaheen, A.M. (2021). University students' interaction, Internet self-efficacy, self-regulation and satisfaction with online education during pandemic crises of COVID-19 (SARS-CoV-2). <i>International Journal of Educational Management</i> , 35 (3), 713-725. https://doi.org/10.1108/IJEM-11-2020-0513
URL	https://www.emerald.com/insight/content/doi/10.1108/IJEM-11-2020-0513/full/html
Region	Middle-East
Country	Jordan
Discipline	Cross-disciplinary
Theoretical Framework	Yes
Methodology	Quantitative Survey
Measure / Instrument	Existing Adapted Scale
Sample Size	500+
Readiness Dimensions Investigated	Self-Regulation; Technology Proficiency
Implications for Practice	No
Implications for Policy	Yes
Keywords	COVID-19; Interaction; Internet Self-efficacy; Online Learning; Self-regulation; Satisfaction; Students

Abstract

This study aimed to investigate Jordanian university students' interaction, Internet self-efficacy, self-regulation and satisfaction regarding online education during the COVID-19 pandemic. A correlational cross-sectional design was utilized using convenience sampling to include 702 undergraduate students from Jordanian universities using an online self-administered questionnaire. Descriptive statistics, T-tests, one-way ANOVA and multiple regression analyses were used to analyze the data. The mean score of students' satisfaction was low ($m = 45.14$, $SD = 25.62$). Regarding student's interaction, learner-instructor interaction had the highest total mean score ($m = 58.53$, $SD = 24.51$), followed by learner-learner interaction ($m = 47.50$, $SD = 22.64$). Learner-content interaction had the lowest total mean score ($m = 45.80$, $SD = 24.60$). Significant differences in students' satisfaction were identified according to the level of education, university type and marital status. Significant predictors of students' satisfaction with online education were self-regulated learning, Internet self-efficacy, learner-content interaction, learner-learner interaction and the number of e-learning theoretical courses. Online education is not well-established in developing countries. This study contributed to the limited knowledge of university students' preparedness and satisfaction with online education during the early stage of COVID-19 pandemic.

Key Takeaway

Online learning is relatively immature in Jordan and so the findings address a current gap in the local literature. However, the value of the study is limited in terms of the concept of student readiness as data collection was strongly focused on the domain of student satisfaction. There is little acknowledgement of the existing literature on student readiness for online learning. That said, significant predictors of students' satisfaction with online education were self-regulated learning, Internet self-efficacy, learner-content interaction, learner-learner interaction and the number of e-learning theoretical courses. The key takeaway is that online education is not well-established in many developing countries and the study contributes to addressing this gap in the literature.

40. University students readiness for e-learning during the COVID-19 pandemic: An assessment of the University of Health and Allied Sciences, Ho in Ghana

Authors	Tesilimi Banji, G., Frempong, M., Okyere, S., & Sakibu Raji, A..
Date	2021
Full Citation	Tesilimi Banji, G., Frempong, M., Okyere, S., & Sakibu Raji, A. (2021). University students readiness for e-learning during the COVID-19 pandemic: An assessment of the University of Health and Allied Sciences, Ho in Ghana. <i>Library Philosophy and Practice (e-journal)</i> . 5253.
URL	https://digitalcommons.unl.edu/libphilprac/5253/
Region	Africa

Country	Ghana
Discipline	Health
Theoretical Framework	No
Methodology	Quantitative Survey
Measure / Instrument	New Scale
Sample Size	100-500
Readiness Dimensions Investigated	Technology Proficiency
Implications for Practice	Yes
Implications for Policy	Yes
Keywords	Student Readiness; E-learning; Covid-19 Pandemic; Health and Allied Sciences; Ghana

Abstract

The main goal of this paper was to investigate the university students' readiness for E-learning during the Covid-19 Pandemic. The rationale was to explore students' readiness for the various E-learning platforms, examine the challenges faced by students in the use of the E-learning platforms (module) during Covid-19 Pandemic and also investigate the benefits of the use of the E-learning platforms. This study adopted a survey research design. From the 2019/2020 academic year of the University of Health and Allied Sciences, 345 students were selected by convenient sampling method. Their readiness for E-learning during the Covid-19 pandemic was assessed by a self-developed questionnaire. Data analysis was done using descriptive statistics. The study revealed that more than half (62.9%) of the students were not ready for the use of e-learning platforms with a level of study associated with readiness even though 91.6% of the participants had basic computer skills before the pandemic, 36.5% had prior experience with the use of E-learning platforms before COVID-19 Pandemic.

Key Takeaway

This study reports more on the nature of the student experience rather than their readiness for online learning as the concept is defined in the literature. Indeed, the literature on student readiness for online learning does not feature in the design of the study. Rather, readiness is more about access and ability to use technology and in this regard over 60% of the students were not ready for the use of e-learning platforms. Access to the internet was an important barrier. Notably, smartphones were the most used device for online learning followed by laptops, which suggests that mobile devices may provide better internet access for students living in Ghana.

41. University students' readiness for using digital media and online learning—Comparison between Germany and the USA	
Authors	Küsel, J., Martin, F., & Markic, S.
Date	2020
Full Citation	Küsel, J., Martin, F., & Markic, S. (2020). University students' readiness for using digital media and online learning—Comparison between Germany and the USA. <i>Education Sciences</i> , 10, 313. 1-15. doi:10.3390/educsci10110313
URL	https://www.mdpi.com/2227-7102/10/11/313
Region	Europe / North America
Country	Germany / United States
Discipline	Teacher Education
Theoretical Framework	Yes
Methodology	Quantitative Survey
Measure / Instrument	Existing Scale
Sample Size	100-500
Readiness Dimensions Investigated	Technology Proficiency; Organisation/ Time Management; Online Communication; Self-Efficacy; Self-Regulation; Self-directedness; Learner Control; Academic Skills
Implications for Practice	Yes
Implications for Policy	Yes
Keywords	Readiness; Digital Media; University Students
Abstract	

The year 2020 brought many changes to our everyday life but also our education system. Universities needed to change their teaching practices due to the COVID-19 pandemic. Words like “digital media”, “online teaching” and “online learning” were present in all of the discussions. The main issues here were the technical infrastructure of students and universities all over the world. However, to have good technical infrastructure does not mean that everybody is also ready to use it. Thus, the present study focused on the issue of university students’ readiness for online learning. The quantitative research goal was to evaluate German university students’ readiness for using digital media and online learning in their tertiary education and compare them with students from the United States. Overall, 72 students from the researchers’ university in Germany and 176 students from multiple universities in the United States completed the Student Readiness of Online Learning (SROL) questionnaire. Results show substantial differences between the two groups of students, with U.S. students being more ready for online learning. The results and limitations were discussed, and practical implications and further ideas were provided.

Key Takeaway

The research was conducted prior to the pandemic but published at the end of 2020. Included in the sample as it offers an interesting cross-cultural analysis. The work is also noteworthy for the way student readiness for online learning is firmly anchored in the literature and understood as a multi-dimensional construct. It recognises that student readiness has been examined through a variety of dimensions and using various measuring instruments. Thus, the authors note that the different ways readiness is conceptualised shows a lack of consensus in the literature about its components. Overall, the study indicates that German students see the importance of online learning but compared to the US students, they do not see themselves as confident. This finding opens up an interesting line of research on cross-cultural differences.

