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## Factors Contributing to the Presence of Depression in An Online Distance Learner: A Systematic Review

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### Abstract

Studies show that online learners are depressed when committing themselves to online learning. However, little data are available about the factors that contribute to the presence of depression. This study aims to reveal the factors by conducting a systematic literature review on six online databases. Based on the review, this study has found that the factors could be categorised into poor perception of online learning mode, infrastructure, resources and support issues, personal weakness and problem, and the COVID-19 phenomenon. Given the findings, the COVID-19 phenomenon interestingly seemed to be the main factor and should be further investigated in the future.

Keywords: Depression; Online learner; COVID-19;

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### 1.0 Introduction

Online distance learning has shown significant growth over the last few years as the Internet and education technology are seamlessly combined to provide distance learners with the opportunity to enroll in a study program and gain new skills. This growth is driven by massive demand in the global education market, which encourages higher learning institutions worldwide to provide a wide variety of platforms for different levels of study.

Online distance learning has many advantages compared to traditional classroom learning (Uzir et al., 2020). For example, the lecturers and students do not need to be in the same place. So, they could engage in the teaching and learning activities remotely wherever they are. Another significant advantage is the learning lesson could be recorded, stored, and viewed again. Thus, it helps students to recap what has been learned and use it for doing their revision. The cost structure of online learning is another factor in the market's rapid growth. It is more affordable than traditional ones, and there are no commuting costs; sometimes, required course materials, such as textbooks, are available online at no cost.

Despite all of the advantages mentioned, this kind of learning has led to a new problem which is the increased number of depressed learners. According to several studies recently, many online learners appeared to be more depressed after following the online learning session. Several reports documented the emotional impact such as isolation, frustration and confusion shown by the depressed learners, which definitely affected their performance in the study. Therefore, in order to address this problem, it is necessary to get a better

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understanding of what actually triggers the situation to happen in an online learning environment. A systematic review of publications is necessary to reveal the factors, thus providing a useful reference to enhance the learning process and experience for distance learners in the future.

This paper begins with a brief definition of depression and a description of several symptoms presented in a depressed person before the impact of depression on online distance learners is described. Then, the review method, process and procedure are explained, followed by a results section where the selected literature is structured in a table with the demographic information, extracted factors and impacts. Afterwards, the results are analysed in the discussion section to reveal more data and information.

## 2.0 Related Work

### 2.1 Depression

According to World Health Organization (WHO), depression is a common illness worldwide, with an estimated 3.8% of the population affected, including 5.0% among adults and 5.7% among adults older than 60 years. Approximately 280 million people in the world have depression. Depression is different from usual mood fluctuations and short-lived emotional responses to challenges in everyday life. Especially when recurrent and with moderate or severe intensity, depression may become a serious health condition. It can cause the affected person to suffer greatly and function poorly at work, at school and in the family.

Depression results from a complex interaction of social, psychological, and biological factors. People who have gone through adverse life events (unemployment, bereavement, traumatic events) are more likely to develop depression. The person experiences a depressed mood (feeling sad, irritable, empty) or a loss of pleasure or interest in activities for most of the day, nearly every day, for at least two weeks during a depressive episode. Several other symptoms are also present, which may include poor concentration, feelings of excessive guilt or low self-worth, hopelessness about the future, thoughts about death or suicide, disrupted sleep, changes in appetite or weight, and feeling especially tired or low in energy (<https://www.who.com>). Depression can, in turn, lead to more stress and dysfunction and worsen the affected person's life situation and the depression itself. At its worst, depression can lead to suicide.

### 2.2 Depression in online distance learners

One of the groups of people who are vulnerable to depression is online distance learners. They can face specific difficulties and limitations, especially in this time of COVID-19 pandemic in which they have to learn online, thus placing them in a stressful learning experience. They are characteristically susceptible to depression, and the possibilities of such implications are expected to grow in the times of COVID-19 quarantine due to the psychologically challenging conditions that they are faced with every day. For example, an online questionnaire survey in Bangladesh using the DASS-21 survey showed that 46.92% of learners had depression. Studies have shown that learners with depression taking in-person courses underperform on assessments compared with students without depression (Moahammed et al., 2022).

Actually, depression may be more prevalent in online environments; compared with in-person degree programs. Online degree programs often serve individuals who are disproportionately likely to experience depression. In a learning environment, depression often disrupts learners' ability to concentrate so that reading and remembering what is read, writing coherently, pulling together ideas, and organising oneself are severely compromised. When depression persisted, however, some learners lost a course, a semester, or a full school year. In summary, learning through online platforms has given rise to depression and anxiety disorders among undergraduate university students, where there was a significant correlation between student satisfaction and the prevalence of depression, anxiety, and stress (Fawaz & Samaha, 2020).

## 3.0 Methodology

This study conducted a systematic literature review that focused on the keywords "depression" and "online learner" (Anwar & Masrek, 2013). To understand the whole process of the review in detail, the following sections explain how the literature was filtered and selected.

### 3.1 Research question

RQ: What are the factors that affect the presence of depression in online distance learners?

The motive of this study is to investigate and deeply review the factors that affect depression in online distance learners. RQ is therefore aimed to review all relevant papers or articles and information from the academic research works that are directly correlated to the experiences of online distance learners during their online learning activities to understand its vital factors and impact on the presence of depression in them.

### 3.2 Search strategy

Six databases – Scopus, Web of Science, Science Direct, IEEE Explore, Springer Link, and Emerald Insight – were searched for peer-reviewed articles on 16 June 2022 using the following query (depression AND online learner) in the UiTM e-resources application. All the databases are recognised research databases in the field of information technology. The choice of the general search terms helps to get a wide overview. Within the database, the search was filtered to get only the publications within the year range specified from 2013 and 2022, in which the period of online learning is actively and widely implemented. The search results in a total count of 442 publications, including duplicates. After removing duplicates and non-English text, the number of publications is still high, 415.

### 3.3 Screening process

Afterwards, the identification of the relevant literature follows by checking titles. This step is essential to eliminate irrelevant publications not focused on the keywords used. Then, the abstract of the remaining literature is read and analysed to determine its relevance. Next, all publications are downloaded as full text. The final step is reading the selected literature to identify the factors that lead online distance learners to depression.

As explained in the previous section, the process starts with the general search of the term depression and online learner in all databases and results in 442 relevant publications, as shown in Table 1.

Table 1. Count for publication for each database

Step	Scopus	Web of Science	Science Direct	SpringerLink	Emerald Insight	IEEE Explore
Search with keywords	24	35	6	56	247	74
Deleting duplicates	12	23	3	56	247	74
Deleting of non-English literature	12	23	3	56	247	74
Relevance by title	3	2	1	8	11	1
Relevance by abstract	3	2	0	1	5	0
Relevance by full text	3	2	0	1	4	0

### 3.4 Inclusion and exclusion criteria

The inclusion and exclusion criteria in this systematic literature review are structured to solely accept the documents or articles that directly deal with the experiences of online distance learners in their online learning activities. The main scope is the factors that are contributing to the depression of the online distance learner. Five key eligibility criteria are designed for this review, as stated in Table 2.

Table 2. Inclusion and exclusion criteria

No	Criteria
1	The study must be original research work instead of a review or a survey
2	The papers focus on the factors that affect the presence of depression in the online distance learner (directly or indirectly) and highlight the relevant impact
3	The proposed solutions in the study have been evaluated (implemented, simulated, and formal proof)
4	The papers are published in peer-reviewed journals
5	The papers focus on the educational setting and environment

### 3.5 Data extraction

A Microsoft excel form was designed for executing the data extraction process to extract the required information from the papers with respect to the research questions. The form had two main parts, namely, the characteristics/demographics of the selected papers and the factors that affect the presence of depression in an online learner. Data were extracted from all the papers that passed through the screening process, as well as the inclusion and exclusion of criteria. The objective was to record accurately only the needed information from the papers. Demographics of the papers included the title of the article, author(s) of the paper, publication year and source of publication. The factors affecting the presence of depression includes both direct and indirect one.

## 4.0 Findings

Table 3 below presents the extracted factors found in each selected article:

Table 3. Data and information extracted from the review process

No	Author(s)	Objective	Method	Factors
1	(Nishimura et al., 2021)	To provide details on how medical students have been affected by the pandemic	A cross-sectional study was conducted on 717 medical students who participated in the web-based survey.	<ol style="list-style-type: none"> <li>1. The belief that online learning may not be as effective as on-site</li> <li>2. Fear of sudden change in the curriculum</li> <li>3. Less clinical/practical exposure</li> <li>4. Lack of financial aid and technical support</li> <li>5. Spent time longer online</li> <li>6. Attenuated relationship with teachers</li> <li>7. Concern about a job, life security, and financial instability due to pandemic</li> </ol>
2	(Kapasia et al., 2020)	To assess the impact of lockdown amidst COVID-19 on undergraduate and postgraduate learners of	An online survey-based study of the 232 undergraduate and postgraduate students studying in various colleges and universities of West Bengal.	<ol style="list-style-type: none"> <li>1. Poor internet connectivity</li> <li>2. Unfavourable study environment</li> <li>3. Poor economic conditions – discriminatory</li> </ol>

3	(Araújo et al., 2020)	various colleges and universities in West Bengal To cross-check information from the main international newspapers.	The data were cross-checked with information from the main international newspapers.	<ol style="list-style-type: none"> <li>1. Uncertainties</li> <li>2. Intensification of the information flow</li> <li>3. Insecurity, fear, sense of loss and mood swings during the pandemic</li> </ol>
4	(Iryna Volodymyrivna et al., 2021)	To analyze the challenges EFL students at Ukrainian higher educational institutions face under the Covid-19 pandemic and quarantine measures	A survey for English language learners at Ukrainian universities: Kyiv National University of Trade and Economics Borys Grinchenko Kyiv University, Kyiv National Linguistic University, Taras Shevchenko Chernihiv National University Chernihiv Collegium which analyze the responses of 357 students	<ol style="list-style-type: none"> <li>1. Unprepared and unfamiliar with online learning</li> <li>2. Difficulties in adapting to online learning mode</li> </ol>
5	(Ashri, 2020)	To evaluate the ramifications of the Covid-19 pandemic on the education sector and provide a student-oriented perspective to address the challenges in this process	An independent online survey was conducted on 212 undergraduate students of the University of Delhi.	<ol style="list-style-type: none"> <li>1. Non-availability of proper gadgets, requisite study material and internet connectivity</li> <li>2. Mediocre course content, technical problems, lack of face-to-face interaction and unpreparedness</li> </ol>
6	(Burns et al., 2022)	To examine how demographic, family, and mental health characteristics of 375 low-income children and their mothers from the City of Toronto were associated with children's educational experiences at home during COVID-19.	A survey was conducted in collaboration with the Child Services division in the City of Toronto, Canada in the year between 2014 and 2016 on 378 families.	<ol style="list-style-type: none"> <li>1. Sudden change in the mode of learning</li> <li>2. Lack of motivation and socialisation</li> <li>3. Difficult to focus</li> </ol>
7	(Khan, 2020)	To examine the experiences of UK higher education students and the impact that emergency-imposed changes had on their learning, teaching and assessment (LTA) during the lockdown	Anonymous online questionnaire to gather the views of HE students across the UK on how COVID-19 and lockdown affected their education and personal circumstances. Using a cross-sectional study, 349 participants were asked to complete several questions, providing quantitative and qualitative data which is analysed for the study.	<ol style="list-style-type: none"> <li>1. Lack of access to suitable study areas</li> <li>2. Not knowing who or where to turn for mental health advice and support</li> <li>3. Lack of focus due to isolation</li> <li>4. Confinement</li> <li>5. Lack of direction</li> <li>6. Lower productivity</li> <li>7. Lack of pastoral support</li> </ol>
8	(Gamage & Herath, 2021)	To investigate psychological distress amongst distance-learning undergraduate students to gather evidence for recommending necessary interventions	A cross-sectional study was conducted using the depression, anxiety, and stress scale (DASS-21). Participants were 1096 undergraduate students from the Open University of Sri Lanka (OUSL)	<ol style="list-style-type: none"> <li>1. The type of study programme is not suitable for the online mode</li> <li>2. Employment status and family responsibilities</li> <li>3. Lack of required skills and unprepared for distance learning</li> <li>4. Lack of resources</li> <li>5. Lack of psychological support and help</li> </ol>
9	(Shahriar et al., 2021)	To explore the practice of online-based distance learning in private universities in Bangladesh and	Qualitative exploratory research is conducted on a total number of 89 undergraduate level university students from different private universities in Bangladesh.	<ol style="list-style-type: none"> <li>1. Improper technological infrastructure</li> <li>2. Limitations to devices and internet accessibility</li> <li>3. Financial hindrances</li> <li>4. Lack of tech literacy</li> </ol>

10	(Yassin et al., 2020)	the challenges associated with it To investigate the psychological impact of the COVID-19 pandemic on university students in Malaysian universities as well as its effect on their learning	A quantitative design that collects data through a survey. The participants were 219 students, divided as follows: 102 local students and 117 international students in Malaysian universities.	<ol style="list-style-type: none"> <li>1. Anxious, worried and restless</li> <li>2. Unable to focus</li> <li>3. Less confidence in learning and feel confused</li> <li>4. Commit more mistakes</li> <li>5. Obsessed with following COVID-19 news and overthinking</li> </ol>
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## 5.0 Discussion

The results from the systematic review provide clear evidence that online distance learners are facing depression due to several factors. To appropriately answer the research question *"What are the factors that affect the presence of depression in online distance learners?"*, the factors extracted from the 10 selected articles could be categorised into the following main factors:

1. Poor perception of online learning mode  
Online distance learners think that online learning is ineffective, lacks practical activities and direction, has many uncertainties and is not suitable for certain courses.
2. Infrastructure, resources and support issues  
The issues include lack of technical support, interaction with teachers, poor internet connectivity, unpreparedness and lack of mental health support.
3. Personal weakness and problem  
This factor is usually related to the online learner's personal feelings such as fear, insecurity, sense of loss, mood swings, lack of focus, anxiety and restlessness. This finding is in line with a previous study (Shuhidan et al., 2021).
4. COVID-19 phenomenon  
This factor is related to COVID-19 negative impacts such as intensification of information flow, obsession with following COVID-19 news and overthinking.

Based on the results, nearly all the selected studies aimed to assess the impact of COVID-19 among the students who were following the online mode of learning. Additionally, almost all of the previous studies implemented a survey method and had been evaluated in large-scale original research work. This study also has revealed that although the search strategy for the review is conducted for the period from 2013-2020, surprisingly, all of the selected articles are published from 2020-2022. This means that the main factor that contributes to depression in online learners is obviously the COVID-19 impact.

## 6.0 Conclusion & Recommendations

The systematic literature review is conducted to identify a number of factors that contribute to the presence of depression in online distance learners. The review is conducted on six online databases, namely Scopus, Web of Science, Science Direct, SpringerLink, Emerald Insight, and IEEE Explore, which focus on the keywords "depression" and "online learner" for the articles published in the year between 2013 and 2022. The review reveals that the main factors that affect the presence the depression are the poor perception of online learning mode, infrastructure, resources and support issues, personal weakness and problems as well as the COVID-19 phenomenon. Interestingly, the last factor seems to be the most significant factor as all of the selected articles were published during the COVID-19 pandemic. Hence, the findings warrant further research and analysis of whether the observed depression faced by the online learners is amplified by COVID-19-related phenomena such as information overload, information avoidance, fake news and etc. Therefore, future studies should conduct data collection such as interview, focus group discussion or survey to elaborate and explain in-depth the results, which might reveal new findings.

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## Paper Contribution to Related Field of Study

This research paper contributes to the field of Library and Information Management.

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