Jurnal Inovasi Teknologi Pembelajaran (JINOTEP): Kajian dan Riset Dalam Teknologi Pembelajaran Vol 9, No 3, (2022), page 280-290
https://doi.org/10.17977/um031v9i32022p280
P-ISSN: 2406-8780 E-ISSN: 2654-7953
Open access: http://journal2.um.ac.id/index.php/jinotep/index

An Exploration of Student Satisfaction with Online Learning: A Systematic Review

Maulana Arif Muhibbin[1*], Primatia Yogi Wulandari[1], Fitri Andriani[1], Afa Fauzul Adzim[2]

[1]*Departemen Psikologi, Universitas Airlangga*
[1]*Jl. Airlangga 4-6, Surabaya, 60286, Indonesia*
[2]*Departemen Psikologi, Universiti Kebangsaan Malaysia*
[2]*Universiti Kebangsaan Malaysia Bangi, Selangor, 43600, Malaysia*
**corresponding author, e-mail: maulana.arif.muhibbin-2019@psikologi.unair.ac.id*

ARTICLE INFO

Article history:

Received: 27-08-2022

Revised: 21-10-2022

Accepted: 10-11-2022

Kata kunci:

Pembelajaran online; Kepuasan belajar online; Siswa

Keywords:

Online learning; Online learning satisfaction; Students

ABSTRAK

Kepuasan belajar online merupakan konstruk yang dapat digunakan untuk mengevaluasi keefektifan layanan pembelajaran online. Tujuan penelitian ini untuk mengeksplorasi faktor-faktor kepuasan belajar online siswa. Sistematika literature review ini menganalisis 34 jurnal yang dikumpulkan dari dua situs, yaitu Google Scholar dan Semantic Scholar. Pada bagian pertama studi ini didiskusikan isu akademik pembelajaran online, kemudian model kepuasan belajar online yang digunakan para peneliti, dan terakhir menjelaskan prediktor yang dapat mempengaruhi kepuasan belajar online siswa. Hasil analisis menunjukkan bahwa faktor eksternal yang paling signifikan adalah learner content dan interaksi guru dengan siswa. Oleh karena itu, untuk meningkatkan kepuasan belajar siswa, guru diharapkan dapat menyajikan materi digital yang menarik serta meningkatkan kualitas komunikasi yang positif dikelas virtual.

ABSTRACT

Online learning satisfaction can be used to assess how well online learning programs work. This research can help education professionals in their efforts to develop adaptive online learning in dealing with future educational disruptions and challenges through the analysis of various literatures. This systematic literature review explored 34 journals from two sites: Google Scholar and Semantic Scholar. The first part of this study discusses the academic issue of online learning, the second section describes the online learning satisfaction model used by the researchers, and the last part describes the predictors that can affect students' online learning satisfaction. Learner content interaction and teacher-student interactions are the most primary external determinants on online learning satisfaction, according to the analysis' findings. Therefore, teachers are expected to be able to deliver engaging digital contents and enhance positive communication in online setting to increase students' learning satisfaction.

INTRODUCTION

Online learning is a method of accessing learning materials that combines developments in digital media and internet technologies. Ranadewa et al., (2021) claims that in online learning,

social proximity, communication between students and teachers, and educational experiences are all attained through distance. Internet-based learning, web-based learning, computer-based learning (Buzzetto, 2016), distance education, internet learning, e-learning, computerized electronic learning (Elfaki et al., 2019) and asynchronous learning are some of the terminology researchers use to describe learning via online media (Faize & Nawaz, 2020). Then face-to-face learning combined with online technologies is referred to as hybrid.

Joksimovi et al., (2015) conducted a literature review and discovered that virtual schools have existed in the United States since the mid-1990s. Barbour et al., (2018) conducted research on article reviews as well. According to information obtained from publications ranging from 2005 to 2009, online learning was initially developed in several countries, Australia, Canada, New Zealand, and the United States, with nearly half of the articles explaining the online learning experience in the United States. There are many different definitions and approaches to online learning as a result of how it has developed in the US. As a result, Allen and Seaman in Khalid (2014) held the Sloan Online Learning Consortium and defined online learning into three types: Fully online means that almost all interactions and materials are delivered online, with an online system handling approximately 80% of learning activities. Blended or hybrid learning is a combination of online and face-to-face instruction. The proportion of this learning ranges from 30% to 79%, with discussions and materials conducted both online and in person. If online technology is used, the characteristics of web-facilitated learning range from 1% to 29% of all learning.

Online learning is an alternative model to traditional learning. When the COVID-19 pandemic hit the world of education at the end of 2019, almost all educational institutions in all over the world abruptly switched to using online learning models. This is designed to mitigate learning backwards during the pandemic. The transition of learning models during times of crisis makes the implementation of online learning in various countries less prepared. This is consistent with Dhawan's (2020) findings that online learning is lacking in student engagement due to a lack of personal attention and interaction. Based on this, it is necessary to assess online learning. One that can be used as a basis for evaluation is identifying students' affective sides so that teachers can explain and predict student performance in the context of online learning (Kuo et al., 2013).

According to Dziuban et al., (2015) one of the appropriate constructs to use as the basis for evaluation is student online learning satisfaction. This is supported by the fact that problems that arise during online learning will interfere with students' commitment and online learning satisfaction (Markova et al., 2017; Ranadewa et al., 2021). Students' happiness or contentment with all of their educational experiences at school is referred to as online learning satisfaction (Al-sheeb et al., 2018). Learning satisfaction in an online context, according to Basith et al., (2020), is a student's subjective assessment of the services provided by teachers in the online learning process, and it can be measured by how students tend to be comfortable in the online learning process. For the purposes of this study, it is possible to conclude that online learning satisfaction is a positive perception of students' learning comfort and effectiveness obtained during online learning.

Online learning satisfaction is important for educational institutions because it is a component of learning evaluation (Rothman et al., 2011; Zeng, 2021). The basis for determining the effectiveness of online learning is learning satisfaction (Nguyen, 2016). Meanwhile, according to Zhu & Brussel (2017), learning satisfaction is a factor that can be used to determine whether online learning programs can be sustained in the longterm. According to research, problems in the field such as a lack of teacher interaction with students and boredom (Suryani et al., 2021) and low participation and lack of student commitment (Pramono et al., 2020) when learning online lead to a decrease in learning satisfaction and student achievement.

Several previous studies investigated online learning satisfaction without providing specific information about online learning satisfaction aspects. Zamakhsari & Ridzuan (2016) conducted research on student participation and online learning satisfaction without mentioning the element of learning satisfaction. Then, in their article, Hakim & Mulyapradana (2020) examined the use of media and motivation on student satisfaction without going into detail about aspects of online learning satisfaction. The consistency of theory, aspects, and indicators in a research

variable, according to Azwar (2021), will indicate the quality of the instrument used. The inconsistency of theory, aspects, and indicators in previous articles has the potential to lead to a misunderstanding about online learning satisfaction.

Despite advances in digital technology, research on online learning will remain relevant. Empirical studies are insufficient to explain students' difficulties in accessing online learning. It is obvious that online learning services are available at all levels of education, despite the fact that the majority of online learning satisfaction research focuses exclusively on the tertiary level. Ranadewa et al., (2021) conducted a review of the literature on online learning satisfaction, which included 40 articles. This study's problem formulation focuses on the effectiveness and impact of online learning satisfaction on students in higher education. Considering this trend, the purpose of this study is to acquire adequate knowledge of online learning satisfaction by investigating the online learning satisfaction construct model used by researchers over the last ten years. Understanding psychological constructs in general, particularly online learning satisfaction, can improve comprehension and accuracy in measuring a student's level of online learning satisfaction.

Previous reviews illustrate the need for additional research on learning satisfaction in the context of online learning. Thus, the first goal of this research is to determine what issues are the academic problems of online learning, how the learning satisfaction model developed by researchers, and what factors can affect the condition of satisfaction. The findings of this study can help to fill gaps in online learning satisfaction. So that, right after the COVID-19 pandemic, we can gain insight into the weaknesses and strengths of online learning implementation and refine it as a learning model that is adaptable to future educational disruptions and challenges.

METHOD

This study used a PRISMA (Preffered Reporting Item for Systematic Review and Metaanalysis) systematic review as its methodology (Page et al., 2020). The research in the paper under consideration examines how satisfied students are with their online education. By selecting scientific articles that can be accessed in their entirety, the article search was conducted between January and July of 2022. The author used two electronic databases, Semantic Scholar and Google Scholar, to conduct a methodical search for the data. "Student Satisfaction" and "Online Learning," "Student Satisfaction" and "Distance Learning," and "Online Course Satisfaction" are among the keywords used to find research publications.

This study's review process included several screenings. The authors received public literature at the first screening. The authors assessed the relevance of the literature based on the title and abstract in the second screening, and then eliminated the literature that did not meet the criteria. The criteria for articles that can be included in this research are as follows: (a) the articles are written in Indonesian and English, (b) quantitative research methods were used to determine the magnitude of the relationship or influence of these variables, (c) the subjects in the study were students and students who took online classes, and (d) the factors that influence student satisfaction in online learning were examined.

The criteria for the requirements of the articles issued are as follows. First, the research subjects are teachers rather than students; then, qualitative or quantitative experimental methods are used in the research. Articles published between 2010 and 2021 are the publication of scientific references used. This was done to obtain current and relevant literature on the advancement of digital technology in the field of education today. After obtaining the literature, it was loaded into a summary that was customized to the formulation of the research problem. Online learning problems, online learning satisfaction instrumentation, and online learning satisfaction factors are included in the summary. The authors of this systematic review compared the online learning satisfaction model offered and the results obtained.

The collected data were then analyzed using a narrative review. The review was carried out by describing various analysis results, methods, and findings from articles that passed the selection. The review results were then reviewed, and conclusions were drawn about how the information obtained could be used for future research (Pollock & Berge, 2018). The search

results from Google Scholar and Semantic Scholar generated a total of 290 filtered journals. Regarding that, the articles were filtered again based on titles and abstracts that matched the search for research objectives, generating 50 journals. The final screening involved reading the titles and contents of the journals. After screening, the authors obtained as many as 34 journals relevant to the literature review in this study. Figure 1 depicts the process flow that we use as a reference while conducting a literature review.

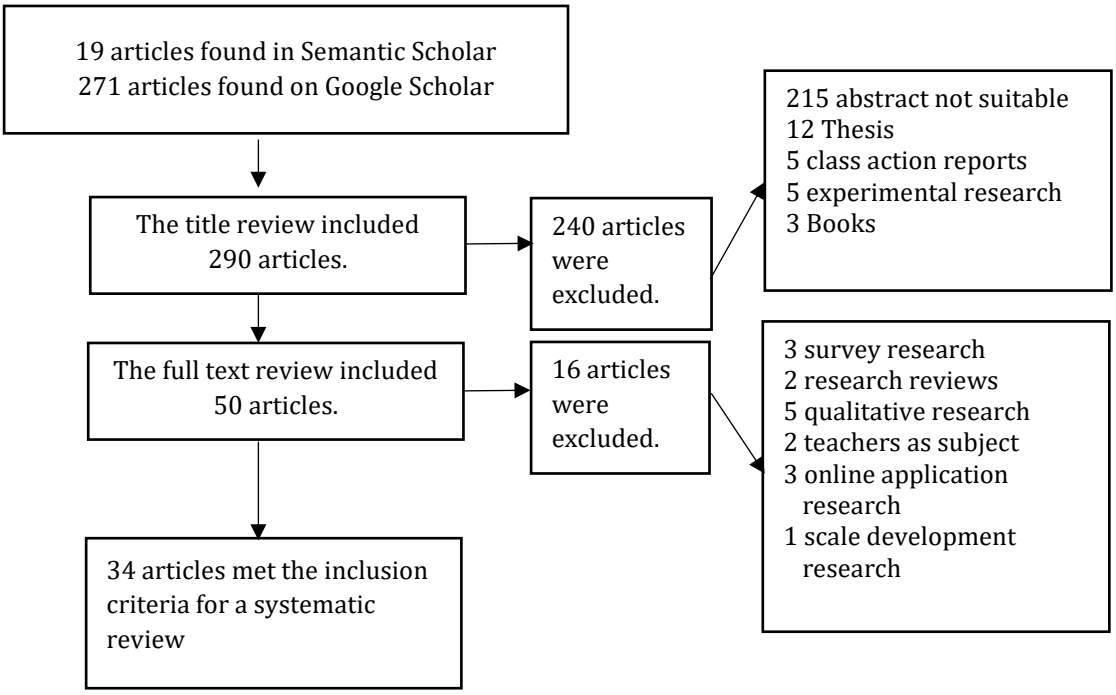

Figure 1. The flow of the PRISMA method literature search process

RESULTS

The authors retained 34 studies that were obtained through a systematic review. The first research objective is to identify the academic issue of online learning satisfaction. According to the literature review, the implementation of online learning heads a number of challenges. This causes students to feel uneasy when participating in online learning. Table 1 outlines the challenges that occur in online learning. According to the time span of scientific article publication from 2010 to 2021, academic issues occur not only in the context of a pandemic, but also in the online learning process under normal conditions. According to the eleven articles reviewed, three highlight the problem of learning satisfaction at the high school level, while the rest focus on the problems of online learning at the college level.

The online learning satisfaction model is the formulation of the next research problem. The researchers took a unique approach to developing the online learning satisfaction construct model. As a result, there may be inconsistencies in understanding the psychological terminology of online learning satisfaction. Table 2 shows the findings of the review of the online learning satisfaction model. According to Table 2 the most widely used theory by researchers is the online interaction typology compiled by Moore and Kearsley (1996) and later developed by Elaine Strachota (2003). Other researchers created a construct of online learning satisfaction based on expert agreement. As a result, there is a wide range of concepts of online learning satisfaction among researchers.

In accordance with the review's findings, the trend of online learning satisfaction research is more prevalent at the higher education level in American states such as Texas, California, Virginia, and Florida. It is understandable that countries in the region pioneered online learning (Barbaour, et al., 2019). Meanwhile, only two articles, Metz (2011) and Gray (2016) were found discussing the satisfaction of online learning at the secondary school level, or in Indonesia, equivalent to SMP & SMA.

Table 1. Academic issues of online learning

Author	Year	Academic Issues of Online Learning Satisfaction
Wu et al.	2010	Feelings of loneliness, annoyance, and a lack of social connections, particularly with peers
Zamakhsari	2015	Low levels of student engagement in online learning
Cole	2016	High rate of dropouts
Ghaderizefreh & Hoover	2018	The online system's high dropout rate and lack of understanding of learning
Almusharraf et al.	2020	Teachers' lack of proficiency in implementing online learning
Surahman & Sulthoni	2020	Poor internet access and low teacher guidance in online classes
Bishwas	2020	Inadequate internet access. Students in online learning are stressed and worried about the assessment of test scores
Pramono	2020	Teachers who are less prepared to organize online learning
Mustakim	2020	Physical concerns like headaches, frequent drowsiness, boredom, and dizziness. unable to concentrate, anxious, and restless
Susanti	2021	Students have difficulty comprehending online learning materials. Students' psychology suffers as a result of a lack of interaction with teachers and peers
Zahro	2021	Student autonomy in online learning is low

Table 2. Online learning satisfaction model

Author	Model	Instrumentation	Information
Wu (2010)	*Learning satisfaction*	Adapted from Chiu, Hsu, dan Sun (2005)	4 items
Ali (2011)	*Student satisfaction*	Adapted from Arbaugh (2000)	6 items
Metz (2011)	*Distance education learning environment survey*	Adapted from Walker & Fraser (2005)	8 items
Lee (2011)	*Course satisfaction*	Developed by researcher	5 items
Strong (2012)	*Satisfaction in e-learning courses*	Adapted from Cobb (2009)	7 items
Ahn (2012)	*Online satisfaction survey*	Developed by Strachota (2003)	27 items, using theory of online ineteraction typology Moore & Kearsley (1996)
Barbera (2013)	*Learner satisfaction*	Developed by researcher	7 items
Kuo (2013)	*Student satisfaction*	Developed by researcher	24 items using theory of online ineteraction typology Moore & Kearsley (1996)
Bolliger (2013)	*Satisfaction questionnaire*	Developed by researcher	Six elements: *instructor, technology, course set up, interaction, outcomes, overall satisfaction*
Jeffery (2013)	*Online satisfaction survey*	Developed by Strachota (2003)	27 items using theory of online ineteraction typology Moore & Kearsley (1996)
Khalid (2014)	*Course satisfaction*	Adapted from Artino (2008)	Five components: *course objectives, course content, course recommendations, course discussions, overall course satisfaction*
Sterling (2015)	*Students' satisfaction with the course*	Developed by researcher	6 items
Dziuban et al., (2015)	*Student satisfaction with online learning*	Developed by researcher	Three aspects: *engaged learning, agency assessment.*

(continued)

Table 2. (continued) Online learning satisfaction model

Author	Model	Instrumentation	Information
Gray (2016)	*Student learning and satisfaction in online learning environments*	Adapted from Eom (2006)	6 items
Zhu (2017)	*Student satisfaction with the blended learning course*	Developed by researcher	Six aspects: *learning objectives, online learning content, teacher support in a blended learning environment, teacher feedback and interaction, student interaction, and learning assessment*
Harsasi (2018)	*Student satisfaction*	Adapted from Sun et al., (2008)	5 items
Kucuk (2019)	*Student satisfaction*	Adapted from Wu et al., (2013)	5 items
Bayrak (2020)	*Online course student satisfaction*	Developed by researcher	8 items
Basith et al. (2020)	*Online learning satifaction*	Adapted from Aman (2009)	Five components: *learning objectives, learning resources and materials, interaction course technology, and student assessment & measurement processes*
Surahman & Sulthoni (2020)	*Online learning satisfaction*	Developed by researcher	Four Aspects: *learning process, self-satisfaction, lecturer service, and availability of supporting technology*

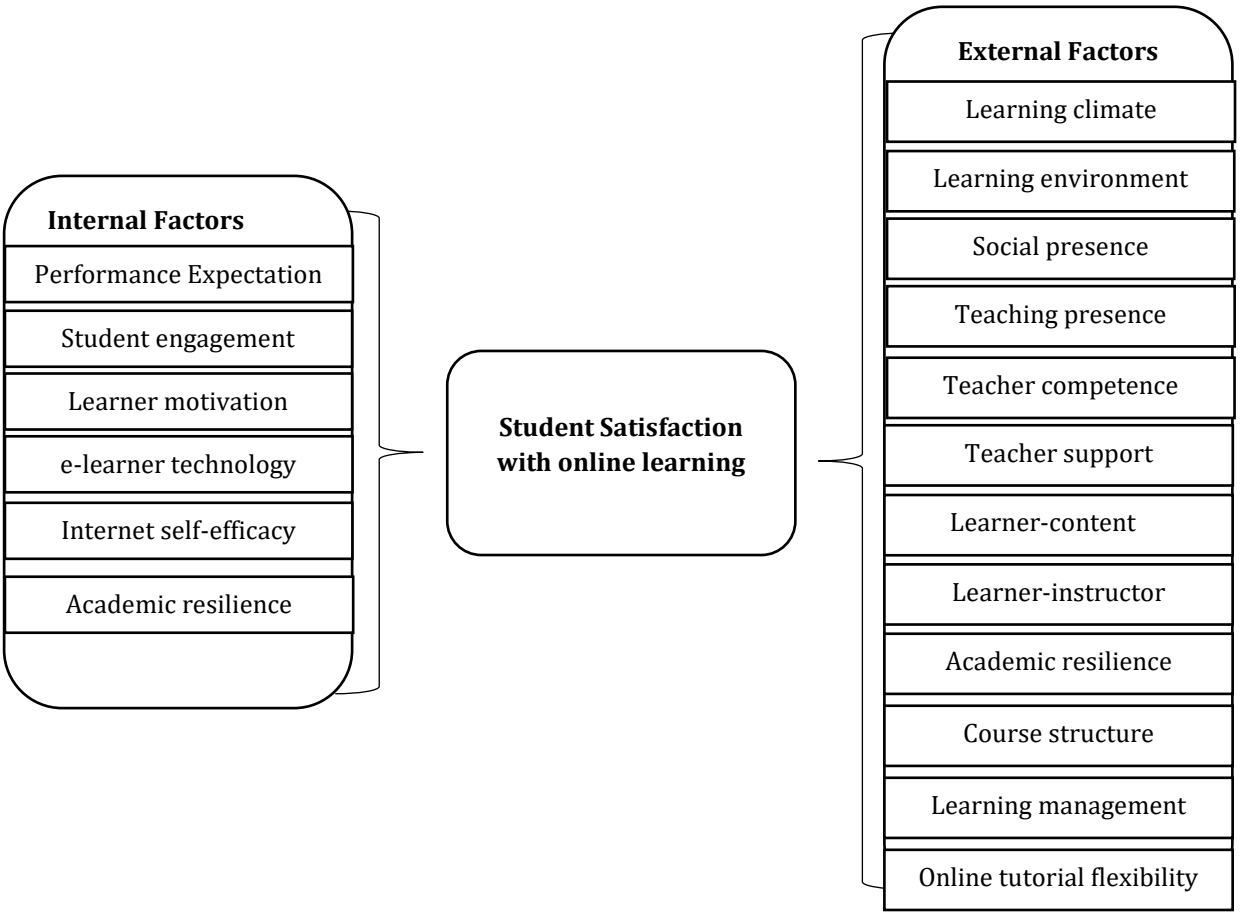

Figure 2. Internal and external factors of online learning satisfaction

The third research question is about what factors influence students' online learning satisfaction. There are about fourteen articles that specifically address this issue. Based on their review of the literature, the authors divide predictors of online learning satisfaction into two categories: internal factors and external factors. Internal factors are psychological factors that stem from individual abilities, whereas external factors are psychological conditions that originate outside of the individual student as illustrated in Figure 2.

DISCUSSION

Academic Issues of Online Learning Satisfaction

The reduction in social interaction, including student interactions with teachers and students and with their peers, is a common issue during the online learning process (Susanti et al., 2020; Wu et al., 2010). This occurs as a result of teachers' limited role in guiding learning (Surahman & Sulthoni, 2020), resulting in negative perceptions among students who believe teachers are not prepared to implement online learning (Pramono et al., 2020). Students feel isolated, frustrated (Wu et al., 2010), stressed, and concerned about the continuity of their learning (Bishwas, 2020). In other empirical studies, the mental burden is followed by physical complaints such as headaches and excessive sleepiness (Mustakim, 2020).

According to Zamakhsari & Ridzuan (2016), low levels of student involvement in online learning affect how well they learn. A related problem is student independence (Zahro & Amalia, 2021). The difficulty of online learning, according to Cole (2016), is the attrition rate. According to Ghaderizefreh & Hoover (2018), students waste online learning and have trouble comprehending the content, which leads to low knowledge memory levels or retention. Based on this, it can be seen that the prevalent issues in online learning interactions are the lack of student engagement and the poor quality of teacher-to-student communication. However, the reviewed academic issues did not address the issue of online learning satisfaction, which occurs at a wider level of education such as early childhood, elementary school, and junior high school.

Online Learning Satisfaction Model

This section will describe various models based on the chronological order of publication years, from 2010 to 2021. The researchers examined online learning satisfaction using various approaches, with each model having advantages and disadvantages to criticize. Table 2 shows that the Moore and Kearsley theory of typology of online interaction (1996) was used to create instrumentation for learning satisfaction scales by Strachota (2003), Ahn (2012), Kuo et al., (2013) and Andersen et al., (2013). The online interaction typology theory explains three critical aspects of online learning success: student interaction with content, student interaction with teacher, and student interaction with other students.

Furthermore, the majority of recent studies (Ali & Ahmad, 2011; Barbera et al., 2013; Bayrak et al., 2020; Gray & DiLoreto, 2016; Sterling, 2015; Kucuk & Richardson, 2019; Lee et al., 2011; Metz, 2011; Strong, 2012; Wu et al., 2010) attempted to develop learning satisfaction instruments using various approaches. There are eleven articles that only list the number of items and do not explain the findings of aspects of learning satisfaction. Despite the fact that the satisfaction instrument items have high validity and reliability, academics will be unable to identify the coherence between the question items and the psychological attribute indicators to be measured if the measuring instrument lacks a clear psychological aspect.

In contrast to other recent studies in which researchers describe the process of creating instruments with aspects of online learning satisfaction, Bolliger & Erichsen (2012), Khalid (2014), Dziuban et al., (2015), Zhu & Brussel (2017), Basith et al., (2020) and Surahman & Sulthoni, (2020) use factor analysis to identify aspects of online learning satisfaction without having a theoretical foundation. The instrument, on the other hand, has aspects and indicators. This will make it easier for academics to confirm the suitability of the psychological attributes to be measured, and more specifically and comprehensively, explain the phenomenon of online learning satisfaction.

Predictors of Online Learning Satisfaction

Students must be able to condition themselves to be self direct in online learning due to the separation of teachers and students. Meanwhile, teachers will be expected to increase student involvement in the virtual classroom interaction process. When students participate in online learning, they may have a positive perception of the quality of the learning. Many factors contribute to the adoption of online learning. These factors are classified into external factors and internal factors.

External factors that influence students' satisfaction of online learning include: *learning climate* (Wu et al., 2010), *learning environment*, *social presence* (Strong, 2012), *learning management system* (Rubin et al., 2013), *learner-content interaction, learner-instructor interaction* (Ahn, 2012; Barbera et al., 2013), *teaching presence* (Khalid, 2014), *student-instructor connection* (Elkins, 2015), *course structure* and *online tutorial flexibility* (Harsasi & Sutawijaya, 2018), *teacher competence*, *teacher support* (Zhu, 2017; Kucuk, 2019). Learner-content interaction and learner-instructor interaction are predictors that contribute significantly to online learning satisfaction based on frequency. Internal student factors that influence online learning satisfaction include: *performance expectation* (Wu et al., 2010), *e-learner technology* (Ahn, 2012), *internet self-efficacy* (Kuo, et al., 2013), *student engagement* (Gray & Diloreto, 2016), *academic resilience* (Kumalasari & Zakiah, 2020), and *learner motivation* (Hettiarachchi et al., 2021). All of the studies in this review that look at predictors of learning satisfaction look at it at the university level.

The study's findings highlight that there were gaps in learning satisfaction in the implementation of online learning that students do at school. The issue of online learning satisfaction is influenced not only by external factors such as teachers' roles and lack luster facilities, but also by internal factors such as student involvement and resilience, which can affect student satisfaction in learning to use the online system. So that teachers and education practitioners can formulate specific programs to accommodate student learning satisfaction by understanding the dynamics of online learning satisfaction, not only projects for students, but all elements of the education community should be improved in order to implement effective online learning. Satisfaction with online learning will remain relevant, and it can be understood that online learning has substantial potential as an alternative teaching model if there is a disruption in the future that requires the re-implementation of online learning in all elements of education, as enlightenment when the COVID-19 pandemic occurred in the world.

CONCLUSION

Based on a systematic literature review, it is possible to conclude that online learning has academic risks that can interfere with its effectiveness. In this study, twenty construct models of online learning satisfaction were discovered. External and internal factors influence online learning satisfaction. Learner-content interaction and learner-instructor interaction are significant predictor of learning satisfaction. The author recognizes that this study has limitations, such as the fact that it only reviewed literature from two databases, Google Scholar and Semantic Scholar. It is hoped that related study will increase the number of databases in the future. The study then focuses on online learning models in general, with future research expected to investigate online learning satisfaction based on features such as fully online, hybrid, and web-based learning. The characteristics of children's learning styles are influenced by maturity and age, so further research into learning satisfaction at a more diverse level of education, such as online learning services for children of playing age, elementary school, junior high school, and high school, will be more exciting.

Acknowledgments

Acknowledgments are addressed to the supervisors of Master of Psychology Universitas Airlangga and Mr. Afa Fauzul Adzim, a student of Kebangsaan Malaysia University who assisted this research.

REFERENCES

Ahn, B. B. (2012)*General satisfaction of students in 100% online courses in the Department of Learning Technologies at the University of North Texas*. Ph.D. thesis, University of North Texas. https://www.learntechlib.org/p/119016/

Azwar S. (2021) Penyusunan skala psikologi. Edisi III.Yogyakarta. Pustaka Belajar

Al-sheeb, B., Hamouda, A. M., & Abdella, G. M. (2018). *Investigating determinants of student satisfaction in the first year of college in a public university in the state of qatar*. Hindawi Education Research International. https://doi.org/10.1155/2018/7194106

Ali, A., & Ahmad, I. (2011). Key factors for determining student satisfaction in distance learning courses: A study of Allama Iqbal Open University (AIOU) Islamabad, Pakistan. *Turkish Online Journal of Distance Education*, *12*(2), 114–127. https://doi.org/10.17718/tojde.10766

Andersen, Jeffery C. (2013)."Learner satisfaction in online learning: An analysis of the perceived impact of learner-social media and learner-instructor interaction".Electronic Theses and Dissertations. Paper 1115. https://dc.etsu.edu/etd/1115

Barbera, E., E., Clarà, M., & Linder-Vanberschot, J. A. (2013). Factors influencing student satisfaction and perceived learning in online courses. *E-Learning and Digital Media*, *10*(3), 226–235. https://doi.org/-10.2304/elea.2013.10.3.226

Barbour, M. K. (2019). The landscape of K-12 online learning: Examining the state of the field. 4th Edition. New York. Routledge. https://doi.org/10.4324/9781315296135

Basith, A., Rosmaiyadi, R., Triani, S. N., & Fitri, F. (2020). Investigation of online learning satisfaction during COVID 19: in relation to academic achievement. *Journal of Educational Science and Technology (EST)*, *6*(3), 265–275. https://doi.org/10.26858/est.v1i1.14803

Bayrak F., Tibi Moanes, Altun Arif. (2020). Development of online course satisfaction scale. *Turkish Online Journal of Distance Education*, *21*(4), 110-123. https://10.17718/TOJDE.803378

Bishwas, P. C. (2020). *Online Class and Its Psychological Impact on Satisfaction of University Students COVID-19 PANDEMIC*. *December*. https://doi.org/10.5281/zenodo.4399326

Bolliger, D. U., & Erichsen, E. A. (2012). Student satisfaction with blended and online courses based on personality type / Niveau de satisfaction des étudiants dans les cours hybrides et en ligne basé sur le type de personnalité. *Canadian Journal of Learning and Technology / La Revue Canadienne de l'apprentissage et de La Technologie*, *39*(1). https://doi.org/10.21432/t2b88w

Bishwas, P. C. (2020). *Online class and its psychological impact on satisfaction of university students COVID-19pandemic*. International Multidisciplinary Research Journal. https://doi.org/10.5281/zenodo.-4399326

Buzzetto. M (2016). *Advanced principles of effective e-learning.* California. *Informing Science Press*

Cole, A. W. (2016). Testing the impact of student preference for face-to-face communication on online course satisfaction. *Western Journal of Communication*, *80*(5), 619–637. https://doi.org/10.1080/-10570314.2016.1186824

Dhawan, S. (2020). Online learning: A panacea in the time of Covid- 19 crisis. Journal of Educational Technology Systems, 49(1), 5–22. https://doi.org/10.1177%2F0047239520934018

Dziuban, , C., Moskal, P., Thompson, J., Kramer, L., DeCantis, G., & Hermsdorfer, A. (2015). Student satisfaction with online learning: Is it a psychological contract? *Journal of Asynchronous Learning Network*, *19*(2). https://doi.org/10.24059/olj.v19i2.496

Elfaki, N. K., Abdulraheem, I., & Abdulrahim, R. (2019). Impact of e-learning vs traditional learning on student's performance and attitude. *International Journal of Medical Research and Health Sciences, 8*, 76-82.

Elkins, (2015). "Student satisfaction in hybrid courses". Electronic Theses and Dissertations. Paper 2519. https://dc.etsu.edu/ etd/2519

Faize, F. A., ., & Nawaz, M. (2020). Evaluation and improvement of students' satisfaction in online learning during COVID-19. *Open Praxis*, *12*(4), 495. https://doi.org/10.5944/openpraxis.12.4.1153

Ghaderizefreh, S., S., & Hoover, M. L. (2018). Student satisfaction with online learning in a blended course. *International Journal for Digital Society*, *9*(3), 1393–1398. https://doi.org/10.20533/ijds.2040.2570.-2018.0172

Gray, J. A., & DiLoreto, M. . (2016). The effects of student engagement, student satisfaction, and perceived learning in online learning environments. *International Journal of Educational Leadership Preparation, 11*, 98-119.

Hakim, M., & Mulyapradana, A. (2020). Pengaruh penggunaan media daring dan motivasi belajar terhadap kepuasan mahasiswa pada saat pandemik Covid-19. *Widya Cipta: Jurnal Sekretari Dan Manajemen*, *4*(2), 154–160. https://doi.org/10.31294/widyacipta.v4i2.8853

Harsasi, M., & Sutawijaya, A. (2018). Determinants of student satisfaction in online tutorial: a study of a distance education institution. *Turkish Online Journal of Distance Education-TOJDE.* https://doi.org/-10.17718/tojde.382732

Hart, C.G. (2012). Factors sssociated with student persistence in an online program of study: A review of the literature. *Journal of Interactive Online Learning, 11*, 19-42.

Hawkins, A., Graham, C. R., Sudweeks, R. R., & Barbour, M. K. (2013). Academic performance , course completion rates , and student perception of the quality and frequency of interaction in a virtual high school. *Distance Education*.37–41. https://doi.org/10.1080/01587919.2013.770430

Hettiarachchi, S., Damayanthi, B. W. R., Heenkenda, S., Dissanayake, D. M. S. L. B., Ranagalage, M., & Ananda, L. (2021). Student satisfaction with online learning during the COVID-19 pandemic: A study at state universities in Sri Lanka. *Sustainability (Switzerland)*, *13*(21). https://doi.org/10.3390/su132111749

Joksimović, S., Kovanović, V., Skrypnyk, O., Gašević, D., Dawson, S., & Siemens, G. (2015). The history and state of online learning. Thomson River University.

Khalid, N. M. ((2014). Factors affecting course satisfaction of online Malaysian university students. *Doctoral dissertation, Colorado State University*.

Kucuk, S., & Richardson, J. C. (2019). A structural equation model of predictors of online learners' engagement and satisfaction. *Online Learning Journal*, *23*(2), 196–216. https://doi.org/10.24059/-olj.v23i2.1455

Kumalasari, D., & Zakiah, A. (2020). Resiliensi akademik dan kepuasan belajar daring di masa pandemi COVID-19: peran mediasi kesiapan belajar daring. *Persona: Jurnal Psikologi Indonesia*, *9*(2), 353–368. https://doi.org/10.30996/persona.v9i2.4139

Kuo, Y., Walker, A. E., Belland, B. & Schroder, K. (2013). A predictive study of student satisfaction in online education programs. International Review of Research in Open and Distributed Learning, 14 (1), 16–39. https://doi.org/10.19173/irrodl.v14i1.1338

Lee, S. J., Srinivasan, S., T., Lewis, D., & Lopez, S. (2011). Examining the relationship among student perception of support, course satisfaction, and learning outcomes in online learning. *Internet and Higher Education*, *14*(3), 158–163. https://doi.org/10.1016/j.iheduc.2011.04.001

Markova, T., Glazkova, I., & Zaborova, E. (2017). Quality issues ofonline distance learning. Procedia-Social and Behavioral. Sciences., 237,685–691. https://doi.org/10.1016/j.sbspro.2017.02.043

Metz, Kimberly Faith (2011) "Predictors of secondary students' schievement and satisfaction in online Courses". *Doctoral Dissertations and Projects*. 452. https://digitalcommons.liberty.edu/doctoral/452

Moore, M. G., & Kearsley, G. G. (1996). *Distance education: A system view*. Wadsworth.

Müller, C., & Mildenberger, T. (2021). Facilitating flexible learning by replacing classroom time with an online learning environment: A systematic review of blended learning in higher education. *Educational Research Review*, *34,* 100394. https://doi.org/10.1016/J.EDUREV.2021.100394

Mustakim. (2020). Efektivitas pembelajaran daring menggunakan media online selama pandemi covid-19 pada mata pelajaran matematika. *Al asma: Journal of Islamic Education, 2*(1), 1-12. https://doi.org/-10.24252/asma.v2i1.13646

Nguyen, V. A. 2016). Examining students' satisfaction with online learning activities in blended learning course: a case study. *ICERI2016 Proceedings*, *1*,3155–3164. https://doi.org/10.21125/iceri.2016.-1716

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T., Mulrow, C. D., Shamseer, L., & Moher, D. (2020). Mapping of reporting guidance for systematic reviews and meta-analyses generated a comprehensive item bank for future reporting guidelines. *Journal of clinical epidemiology*, *118*, 60-68. https://doi.org/10.1016/j.jclinepi.2019.11.010

Pollock, A., & Berge, E (2018), 'How to do a systematic review'.International Journal of Stroke, vol. 13, no. 2, pp. 138-156. https://doi.org/10.1177/1747493017743796.

Pramono, W. H., Sugiyanto, E., & Prasetyo, C. (2020). The overview of satisfaction level of online learning system student during Covid 19 pandemic. *Proceedings of the International Conference on Nursing and Health Sciences*, *1*(1), 107-112. Retrieved from http://jurnal.globalhealthsciencegroup.com/-index.php/PICNHS/article/view/300

Ranadewa, D. U. N., Gregory, T. Y., Boralugoda, D. N., Silva, J. A. H. T., & Jayasuriya, N. A. (2021). Learners' satisfaction and commitment towards online learning during COVID-19: a concept paper. *Vision*, 09722629211056705. https://10.1177/09722629211056705

Rothman, T., Romeo, L., Brennan, M., & Mitchell, D. (2011). Criteria for assessing student satisfaction with online courses. *International Journal for e-Learning Security, 1*(1/2), 27-32. https://doi.org/10.1.1.-453.65

Rubin, B., Fernandes, R., & Avgerinou, M. D. (2013). The effects of technology on the Community of Inquiry and satisfaction with online courses. *The Internet and Higher Education*, *17*, 48-57. https://doi.org/-10.1016/j.iheduc.-2012.09.006.

Sterling, K. W. S. (2015). Student satisfaction with online learning. *Doctoral dissertation.University of California, Santa Barbara*, *13*(3), 1576–1580.

Strachota, E. M. (2003). *Student satisfaction in online courses: An analysis of the impact of learner-content, learner-instructor, learner-learner and learner-technology interaction*. The University of Wisconsin-Milwaukee.

Strong, R. Wynn, J. T., Student, D., Mcclure, M. M., & Student, D. (2012). *Investigating Students' Satisfaction with eLearning Courses: The Effect of Learning Environment and Social Presence. Journal of Agricultural Education, 53(3)*, 98–110. https://doi.org/10.5032/jae.2012.03098

Surahman, E., & Sulthoni. (2020). Student satisfaction toward quality of online learning in indonesian higher education during the Covid-19 Pandemic. *Proceedings - 2020 6th International Conference on Education and Technology, ICET 2020*, 120–125. https://doi.org/10.1109/ICET51153.2020.9276630

Suryani, N. K., Ayu, I., & Widani, P. (2021). *Student e-Learning satisfaction during the Covid-19 pandemic in Bali , Indonesia*. Jurnal Economia, *17*(1), 141–151. https://doi.org/10.21831/economia.v17i1.33196

Susanti, Izzanil Hidayati, Nila Anggreiny, and Yantri Maputra, (2020). School from Home during COVID-19 Pandemic, a Descriptive Study: Effectivity of Learning towards High School Students in West Sumatra. *KnE Social Sciences*, 430-445. https://10.18502/kss.-v4i15.8231

Wu, J. H., Tennyson, R. D., & Hsia, T. L. (2010). A study of student satisfaction in a blended e-learning system environment. *Computers and Education*, *55*(1), 155–164. https://doi.org/10.1016/j.compedu.2009.-12.012

Zahro, I. F., & Amalia, R. (2021). Deskripsi kemandirian belajar siswa dalam pembelajaran daring pada masa pandemi Covid-19. *Attanwir Jurnal Kesilaman Dan Pendidikan*, *12*(1). http://e-jurnal.staiattanwir.-ac.id/index.php/attanwir/index

Zamakhsari, Z., & Ridzuan, A. (2016). An investigation on students participation and satisfaction towards online learning. *IEEE Conference on E-Learning, e-Management and e-Services, IC3e 2015*, 143–147. https://doi.org/10.1109/IC3e.2015.7403502

Zeng, X., & Wang, T. (2021). College student satisfaction with online learning during COVID-19: A review and implications . *International Journal of Multidisciplinary Perspectives in Higher Education*, *6*(1), 182–195. https://doi.org/10.32674/jimphe.v6i1.3502

Zhu, C. (2017). University student satisfaction and perceived effectiveness of a blended learning course. *International Journal of Learning Technology*, *12*(1), 66-83. https://doi.org/10.1504/IJLT.-2017.083996