Blended Learning Approach in Graduate Studies: A Bibliometric Analysis from 1997-2021

Rusdi Omar, Narentheren Kaliappen, Kamarul Azman Khamis, and Dwi Sulisworo

Abstract—**Research on the blended learning approach in graduate studies has started since 1997. Thereafter, researchers in various subject areas have widely investigated the term blended learning. This paper thus seeks to analyze scientific literature, especially for graduate studies, published on the blended approach. All the literature published about blended approach in graduate studies was gathered using the Scopus database. The data was analyzed using Microsoft Excel. Standard bibliometric analysis was used to create the growth of publications and the citation analysis. A total of 801 documents were found based on the search results. Since 2004, the growth rate of literature on blended learning in graduate studies has accelerated radically. Journal articles and conference papers accounted for most of the publications, which were mostly written in English and Spanish. Most of the studies were conducted in the fields of social science and computer science. E-learning, online learning, collaborative learning and flipped classroom were among the most frequently used keywords. Most of the blended learning research in graduate studies was carried out in the United Kingdom, Australia, and the United States. This paper presents the literature's evolution in the blended learning approach in graduate studies and identifies current research interest and the potential future research direction.**

Index Terms—**Blended learning, graduate studies, postgraduate, bibliometric analysis.**

I. INTRODUCTION

Blended learning combines conventional classroom teaching methods with online learning with the same students in the same course who are studying the same material [1], [2]. Students can also participate in hybrid programs, which incorporate face-to-face and online learning. In other words, blended learning is a term used to provide knowledge and training experiences by combining face-to-face and technology enabled learning [3], [4].

During these learning experiences, students do not have to be in one place physically together but can be connected to the web on a digital basis. For instance, one blended learning course could involve learners who participate in a lesson taught by a teacher in a classroom environment while independently completing online courses on an online learning platform outside the classroom [5]-[7].

Recent research shows that there are numerous benefits of blended learning. For instance, individual students work together virtually to learn on their own. Technology-friendly learning enables students to learn anytime or anywhere, without the barriers of time and place but with the possible support of their personal involvement. Furthermore, blended learning helps students and teachers to connect more. Besides, additional types of learning activities can enhance engagement and help students attain higher and meaningful levels [8]. In addition, learners exercise the ability to project themselves socially and academically into an online research community. Importantly, digital learning abilities are becoming essential to a lifetime learner and mixed courses help students to master the abilities to use a wide range of technologies [5], [9]-[11]. The competence shifting along with technological developments in learning encourages blended learning as a fundamental approach today. Connectedness, which gets stronger between people and specific activities that still require direct face-to-face interaction, makes blended learning a critical issue for information technology-based learning. Several studies on blended learning have shown a high impact on the number of citations from other researchers in this field [4], [8]. This achievement is an indicator that a study on blended learning should be more comprehensive.

Research on the blended learning approach in graduate studies has started since 1997. Afterward, researchers in various subject areas have widely investigated the term blended learning. However, studies related to blended learning in graduate studies is still low. This study will be critical because the research carried out by graduate students is generally an integral part of the research carried out by the supervisor or principal researcher. The big picture of the research carried out on graduate studies will indicate the direction of the research agenda on blended learning going forward. The research question is how to map blended learning research and how future research opportunities in this field are, especially in graduate studies. Therefore, this paper aims to analyze the scientific literature published on the blended learning approach, especially in graduate studies, to obtain research maps and conduct research predictions in this field.

Bibliometric analysis is described as a statistical measurement of published scientific articles, books, or the chapters of a book, and it is an effective way to evaluate the impact of publication in the scientific community [12]-[14]. It is also a quantitative technique for evaluating the structure of expertise and growth of research fields by analyzing relevant publications [15]. This paper then presents

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the findings of the main bibliometric indicators. Finally, this paper summarizes the observations, discusses possible research possibilities, and discusses some of the study's limitations.

II. METHODOLOGY

All the data for this analysis was gathered from Scopus as of February 20, 2021. The Scopus database was used because it is the world's largest single abstract and indexing database, as well as the world's largest searchable citation and abstract source for literature searching [15]. Access type, year, author name, subject area, document type, source title, keywords, affiliation, country, source type, and language were several analytical findings obtained from the gathered documents. We concentrated on all documents relating to blended learning that were based on the title of the document for this study. Intrinsically, the subsequent query was performed: (TITLE-ABS-KEY (blended AND learning)) AND ((graduate)) AND (postgraduate). A total of 801 documents were obtained based on the search results.

III. RESULTS

A. Documents and Source Types

The data was first analyzed to determine the text and source types. This research discovered nine different types of documents related to blended learning in graduate studies, including an article, a conference paper, a book chapter review, a conference review, a book, a letter, and a note. Table I indicates that articles accounted for 65.29 percent of all publications, with conference papers accounting for 19.23 percent. The other types of documents accounted for nearly 15.23% of total documents, with each form accounting for less than 9% of total documents. With less than 1% each, the letter and note were the lowest two forms.

TABLE I: DOCUMENT TYPES

Document Type	Frequency	Percentage
Article	523	65.29
Conference Paper	154	19.23
Book Chapter	69	8.61
Review	39	4.87
Conference Review	6	0.75
Book	4	0.50
Editorial	4	0.50
Letter	1	0.12
Note	1	0.12
Total	801	100.00

TABLE II: SOURCE TYPES

Source Type	Frequency	Percentage
Journal	568	70.91
Conference Proceeding	135	16.85
Book	68	8.49
Book Series	29	3.62
Trade Journal	1	0.12
Total	801	100.00

Table II depicted five different forms of sources. Journals are the most popular, accounting for 70.91 percent, followed by conference proceedings (16.85 percent), books (8.49 percent), and book series (3.62 percent). The trade journal made the least contribution.

B. Years of Publications

The first research on blended learning in graduate studies was published in 1997 by Rahman (1997) with the paper entitled "Problem-based learning by undergraduate biochemistry students in the underdeveloped countries". This study used both undergraduate and postgraduate students as its respondents. Between 2007 and 2017, the number of related publications grew steadily. Notably, there was a sharp increase from 2018-2020. In 2021, 13 publications were indexed by Scopus as of 20th February 2021.
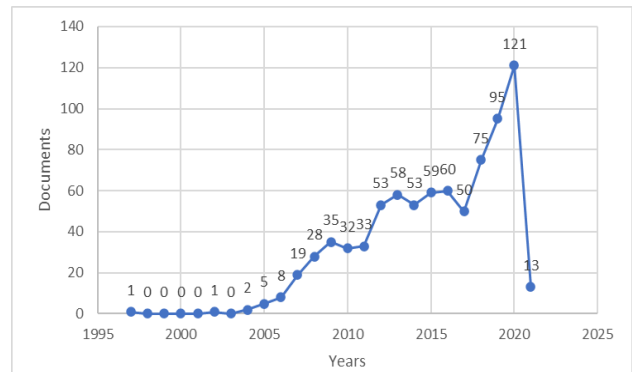

Fig. 1. Number of publications.

C. Language

Table III shows that most of the retrieved document were published in English (94.94%), followed by Spanish (2.59%) and German (1.73%). The findings shows that 10 articles were published in dual language, which makes the total publication shows 811 instead of 801. Portuguese, Turkish, Arabic and Persian among the lowest languages published article on blended learning in graduate studies.

TABLE III: LANGUAGE

Language	Frequency	Percentage
English	770	94.94
Spanish	21	2.59
German	14	1.73
Portuguese	2	0.25
Turkish	2	0.25
Arabic	1	0.12
Persian	1	0.12
Total	811	100.00

D. Subject Area

Most of the studies on blended learning were in social science representing 39.44%, followed by computer science (17.59%) and medicine (11.41%). The other subject areas in blended learning in graduate studies are shown in Table IV.

TABLE IV: SUBJECT AREA

Subject area	Document	Percentage
Social Sciences	491	39.44
Computer Science	219	17.59
Medicine	142	11.41
Engineering	76	6.10
Nursing	62	4.98
Business, Management and Accounting	53	4.26
Arts and Humanities	26	2.09
Mathematics	21	1.69
Dentistry	20	1.61
Physics and Astronomy	20	1.61
Psychology	17	1.37
Decision Sciences	14	1.12
Health Professions	4	1.12
Biochemistry, Genetics and Molecular Biology	12	0.96
Economics, Econometrics and Finance	12	0.96
Environmental Science	11	0.88
Pharmacology, Toxicology and Pharmaceutics	7	0.56
Agricultural and Biological Sciences	5	0.40
Energy	4	0.32
Materials Science	4	0.32
Chemical Engineering	3	0.24
Multidisciplinary	3	0.24
Neuroscience	3	0.24
Chemistry	2	0.16
Veterinary	2	0.16
Earth and Planetary Sciences	1	0.08
Immunology and Microbiology	1	0.08

E. Keyword Analysis

TABLE V: KEYWORD OCCURRENCES

No	Keyword	Occurrences
1	blended learning	333
2	e-learning	115
3	higher education	41
4	online learning	37
5	education	33
6	medical education	28
7	distance learning	22
8	learning	22
9	collaborative learning	15
10	flipped classroom	14
11	teaching	12
12	blended	11
13	active learning	10
14	pedagogy	10
15	training	10

VOSviewer, a software tool for creating and envisioning

bibliometric networks, was used to map the author keywords [16]. Fig. 2 displays a color-coded network visualization of the author keywords. Keywords of the same colour were often grouped together.

As a result, keywords like blended learning, higher education, online learning, active learning, interactive learning, flipped classroom, and pedagogy have a common colour (red) in this study, showing that they have a close relationship and often co-occur.

Blended learning, e-learning, higher education, and online learning were the main four keywords used based on the number of occurrences. Table V shows the top 15 keywords with minimum 10 occurrences.
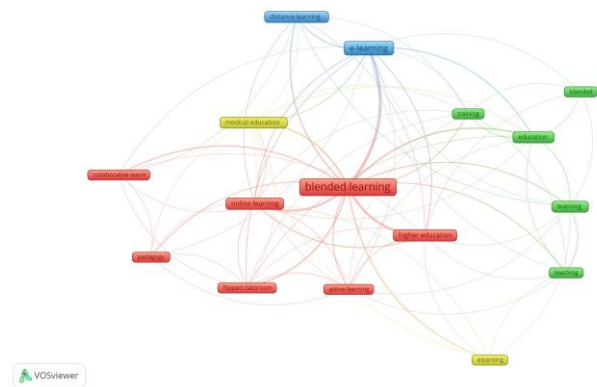

Fig. 2. Keyword analysis.

F. Geographical Distribution

TABLE VI: COUNTRIES

No	Country	Documents	Citations
1	United Kingdom	155	1892
2	Australia	125	1393
3	United States	71	882
4	Netherlands	19	493
5	Canada	22	432
6	Germany	44	399
7	Ireland	26	391
8	Belgium	16	320
9	Greece	19	299
10	Malaysia	36	239
11	China	17	216
12	South Africa	29	195
13	India	21	179
14	Taiwan	9	159
15	New Zealand	14	129
16	Spain	31	118
17	Saudi Arabia	8	109
18	Portugal	8	100
19	Singapore	16	94
20	Switzerland	7	92

The Scopus publication documents contained researches from 42 countries. Table VI lists the top 20 countries that contributed to blended learning publications for graduate

students. With 155 documents, the United Kingdom came in first, followed by Australia, which had 125. The United States is in the third place with 71 documents, Germany is in the fourth place with 44 documents, and Malaysia is in the fifth place with 36 documents.

In terms of citation, the United Kingdom is first with 1892, followed by Australia with 1393, the United States with 882, the Netherlands with 493, and Canada with 432.

G. Top Authors and Affiliations

Table VII and Table VIII indicate the top 10 authors and top 10 affiliation which produced more publications on blended learning in graduate studies. The findings show that Ilic, D. from Monash University, Melbourne, Australia were among the top author who published 6 documents on blended learning.

Meanwhile, in terms of affiliation The University of Sydney is at the top with 13 documents among the universities that published on blended learning.

TABLE VII: TOP AUTHORS AND AFFILIATIONS

No	Authors	Affiliation	Documents
1	Ilic, D.	Monash University, Melbourne, Australia	6
2	Hamilton, J.	James Cook University, Townsville, Australia	5
3	Tee, S.	James Cook University, Townsville, Australia	5
4	Caravias, V.	Swinburne University of Technology, Melbourne, Australia	4
5	Dias, S.B.	Faculdade de Motricidade Humana, Universidade de Lisboa, Lisbon, Portugal	4
6	Diniz, J.A.	Faculdade de Motricidade Humana, Universidade de Lisboa, Lisbon, Portugal	4
7	Graham, C.R.	Brigham Young University, Provo, United States	4
8	Spring, K.J.	Brigham Young University, Provo, United States	4
9	Valcke, M.	Universiteit Gent, Ghent, Belgium	4
10	Wichadee, S.	Bangkok University, Bangkok, Thailand	4

TABLE VIII: TOP UNIVERSITIES

No	Affiliation	Document
1	The University of Sydney	13
2	Monash University	10
3	Griffith University	10
4	Deakin University	9
5	University of Cape Town	8
6	James Cook University	8
7	Swinburne University of Technology	8
8	University of South Australia	8
9	Nanyang Technological University	7
10	Rheinisch-Westfälische Technische Hochschule Aachen	7

H. Citation Analysis

The highest twenty cited articles in blended learning are recorded in Table VIV. An article entitled "Systematic review of serious games for medical education and surgical skills training" by Graafland M., Schraagen J.M., Schijven

M.P. (2012) from British Journal of Surgery received the highest citation in Scopus database with totalling to 304, followed by "Research focus and methodological choices in studies into students' experiences of blended learning in higher education" by Bliuc A.-M., Goodyear P., Ellis R.A. (2007) from Internet and Higher Education received 245 citations which made it the second highest. Meanwhile article entitled "The effectiveness of blended learning in health professions: Systematic review and meta-analysis" written by Liu Q., Peng W., Zhang F., Hu R., Li Y., Yan W. (2016) received third highest citation with 146 in total.

TABLE VIV: TOP 20 CITED ARTICLES IN BLENDED LEARNING

No	Authors	Title	Year	Source	Cited
1	Graafland M., Schraagen J.M., Schijven M.P.	Systematic review of serious games for medical education and surgical skills training.	2012	British Journal of Surgery	303
2	Bliuc A.-M., Goodyear P., Ellis R.A.	Research focuses and methodological choices in studies into students' experiences of blended learning in higher education.	2007	Internet and Higher Education	245
3	Liu Q., Peng W., Zhang F., Hu R., Li Y., Yan W.	The effectiveness of blended learning in health professions: Systematic review and meta-analysis.	2016	Journal of Medical Internet Research	146
4	Owston R., York D., Murtha S.	Student perceptions and achievement in a university blended learning strategic initiative.	2013	Internet and Higher Education	140
5	Herrington J., Reeves T.C., Oliver R.	Authentic learning environments.	2014	Handbook of Research on Educational Communications and Technology: Fourth Edition	138
6	Choules A.P.	The use of e-learning in medical education: A review of the current situation.	2007	Postgraduate Medical Journal	137
7	Thai N.T.T., De Wever B., Valcke M.	The impact of a flipped classroom design on learning performance in higher education: Looking for the best "blend" of lectures and guiding questions with feedback.	2017	Computers and Education	129
8	de George-Walker L., Keeffe M.	Self-determined blended learning: A case study of blended learning design.	2010	Higher Education Research and Development	117
9	Kelly M., Lyng C., McGrath M., Cannon G.	A multi-method study to determine the effectiveness of, and student attitudes to, online instructional videos for teaching clinical nursing skills.	2009	Nurse Education Today	105
10	Harden R.M., Hart I.R.	An international virtual medical school (IVIMEDS): The future for medical education?	2002	Medical Teacher	101
11	Kintu M.J., Zhu C., Kagambe E.	Blended learning effectiveness: the relationship between student characteristics, design features and outcomes.	2017	International Journal of Educational Technology in Higher Education	99
12	Tselios N., Daskalakis S., Papadopoulou M.	Assessing the acceptance of a blended learning university course.	2011	Educational Technology and Society	94
13	Shaffer K., Small J.E.	Blended learning in medical education: Use of an integrated approach with web-based small group modules and didactic instruction for teaching radiologic anatomy.	2004	Academic Radiology	89

14	Campbell M., Gibson W., Hall A., Richards D., Callery P.	Online vs. face-to-face discussion in a web-based research methods course for postgraduate nursing students: A quasi-experimental study.	2008	International Journal of Nursing Studies	87
15	Smyth S., Houghton C., Cooney A., Casey D.	Students' experiences of blended learning across a range of postgraduate programmes.	2012	Nurse Education Today	86
16	Motteram G.	'Blended' education and the transformation of teachers: A long-term case study in postgraduate UK higher education.	2006	British Journal of Educational Technology	77
17	Tarus J.K., Gichoya D., Muumbo A.	Challenges of implementing E-learning in Kenya: A case of Kenyan public universities.	2015	International Review of Research in Open and Distance Learning	76
18	Lea M.R.	'Communities of practice' in higher education: Useful heuristic or educational model?	2005	Beyond Communities of Practice: Language, Power and Social Context	70
19	Cooner T.S.	Creating opportunities for students in large cohorts to reflect in and on practice: Lessons learnt from a formative evaluation of students' experiences of a technology-enhanced blended learning design.	2010	British Journal of Educational Technology	66
20	Varghese S.S., Ramesh A., Veeraiyan D.N.	Blended Module-Based Teaching in Biostatistics and Research Methodology: A Retrospective Study with Postgraduate Dental Students.	2019	Journal of Dental Education	65

IV. DISCUSSION

Research on blended learning shows that there is growth that tends to be exponential. This growth is significantly related to the development of issues regarding technology-enhanced learning. The use of technology in learning for various activities (learning management system, simulation, animation, text, voice or video interaction) encourages a broader study of the application of blended learning. Learning issues related to blended learning have also become increasingly diverse, such as online learning, active learning, interactive learning, flipped classrooms, and pedagogy.

The blended learning studies also cover all the fields, although the percentage is uneven. Social science and computer science produce the highest blended learning research. This is probably because blended learning contains two areas: learning strategy as part of social sciences and information technology as part of computer science research in these areas may upward trend.

An interesting result is medicine, which is in the third position and has almost twice the amount of research as engineering (refer Table IV). A deeper study of this phenomenon will provide a deeper picture of how blended learning used in this field. In fact, it would be much beneficial if blended learning studies in medicine focus on medical graduates' competencies in current digital healthcare environment.

The findings show that highly cited documents are from review or critical research. There is a tendency that reviews, or critical research can be a shortcut for other researchers to find out about current conditions in a particular field immediately. Using the results, researchers can immediately position the research to be carried out on the latest problems or learning innovation opportunities relevant to current conditions so that studies in this field can continue to develop. Research on blended learning will continue to expand, especially in countries where the information technology is fast developing. These countries will eventually improve education policies embedded with technology advancement paving way into blended learning approach.

V. CONCLUSION

This paper is a bibliometric analysis that seeks to provide a deeper understanding of patterns, historical analyses, predictions, and contributions to blended learning in graduate studies. This topic has been the subject of research since 1997, and it has evolved ever since. Between 2018 and 2020, the number of publications exploded. Scopus database has already indexed 13 publications as of February 20, 2021. This research also shows that e-learning, higher education, online learning, active learning, collaborative learning, and flipped classroom are the most widely covered areas in blended learning. The geographical distribution of the literature indicates that the United Kingdom has the most publications and citations.

We suggest that other developing nations should conduct more research on blended learning in both undergraduate and postgraduate studies where the current COVID 19 pandemics pushed the universities to implement online or virtual teaching and learning pedagogy. Apart from that, this study also identified several prominent authors and universities that emphasised publication on blended learning in graduate studies.

A. Limitations

This study has several limitations. We only retrieved publication data from Scopus database, although Scopus database is one of the largest databases, but future studies could also include publication data from Web of Science (WoS) and Google Scholar. In addition, we used the following query (TITLE-ABS-KEY (blended AND learning)) AND ((graduate)) AND (postgraduate) to retrieve the data and there may have been some possibilities for missing documents making this not 100% perfect query. Despite several limitations, this study is considered as one of the pioneer bibliometric study that focuses on blended learning in graduate studies with special interest on postgraduate.

B. Future Research Areas

Based on this bibliometric analysis, we found several potential areas that future researchers could focus on such as developing digital games as blended learning, understanding students' experience, learning, perception and motivation towards blended learning approach, comparing effectiveness of blended learning and non-blended learning approach, analysing how low academic performer could use blended

learning more effectively, incorporating authentic learning with technology enabled learning, investigating to what extend e-learning, flipped classroom and ICT can increase students' engagement and self-efficacy in blended learning and analysing how blended learning could create flexible curriculum with synchronous or non-synchronous for graduate studies.

Remarkably, with the availability of several technical support systems, an increase in interest in flexible learning options, and the effects of the COVID 19 pandemic, conventional classroom education has been transformed into online learning, also known as blended learning or hybrid learning [17]. To encourage effective teaching and learning for graduate studies, higher education institutions should continue to prioritize blended learning approaches through solid learning management systems and strong internet access [18].

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

RO provided the research idea and wrote the literature review. NK conducted the bibliometric analysis and wrote the paper. KAK wrote the conclusion and future research direction, and DS wrote the discussion and improved the paper based on the reviewer's comments. All authors had approved the final version.

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REFERENCES

[1] D. R. Garrison and N. D. Vaughan, *Blended Learning in Higher Education: Framework, Principles, and Guidelines*, Jossey-Bass, 2008.

[2] M. J. Kintu, C. Zhu, and E. Kagambe, "Blended learning effectiveness: The relationship between student characteristics, design features and outcomes," *Int J Educ Technol High Educ*, vol. 14, no. 7, 2017.

[3] R. Owston, D. York, and S. Murtha, "Student perceptions and achievement in a university blended learning strategic initiative," *The Internet and Higher Education*, vol. 18, pp. 38-46, 2013.

[4] P. McGee and A. Reis, "Blended course design: A synthesis of best practices," *Journal of Asynchronous Learning Networks*, vol. 16, no. 4, pp. 7-22, 2012.

[5] M. Cleveland-Innes and D. Wilton, *Guide to Blended Learning*, 2018.

[6] Q. Liu *et al*., "The effectiveness of blended learning in HEALTH Professions: Systematic review and meta-analysis," *Journal of Medical Internet Research*, vol. 18, no. 1, 2016.

[7] N. Matzakos and M. Kalogiannakis, "An analysis of first-year engineering students' satisfaction with a support distance learning program in mathematics," *Education and Information Technologies*, vol. 23, no. 2, pp. 869-871, 2018.

[8] A. Bliuc, P. Goodyear, and R. A. Ellis, "Research focus and methodological choices in studies into students' experiences of blended learning in higher education," *The Internet and Higher Education,* vol. 10, no. 4, 2007, pp. 231-244.

[9] A. Sahara, M. Mardji, S. Hadi, and H. Elmaunsyah, "Blended learning management in higher education institutions in Indonesia," *The International Journal of Learning in Higher Education,* vol. 28, no. 1, pp. 65-73, 2021.

[10] D. Laskaris *et al*., "Critical reflections on introducing e-learning within a blended education context," *International Journal of Technology Enhanced Learning*, vol. 11, no. 4, pp. 413-440, 2019.

[11] M. Jebraeily *et al*., "Evaluation of blended medical education from lecturers' and students' viewpoint: A qualitative study in a developing country," *BMC Medical Education*, vol. 20, no. 1, 2020.

[12] A. Caputo *et al*., "Digitalization and business MODELS: Where are we going? A science map of the field," *Journal of Business Research*, vol. 123, pp. 489-501, 2021.

[13] (2021). What is bibliometric analysis. [Online]. Available: https://www.igi-global.com/dictionary/education-literature-development-responsibility/2406

[14] P. M. Iftikhar *et al*., "A bibliometric analysis of the top 30 most-cited articles in gestational diabetes Mellitus Literature (1946-2019)," *Cureus*, 2019.

[15] A. Ahmi, H. Elbardan, and R. H. R. M. Ali, "Bibliometric analysis of published literature on industry 4.0," in *Proc. the 2019 International Conference on Electronics, Information, and Communication (ICEIC)*, Auckland, New Zealand, 22–25 January 2019. IEEE: Auckland, New Zealand, 2019. pp. 1–6.

[16] N. J. Eck and L. Waltman, "VOSviewer manual," *Leiden: Univeristeit Leiden*, vol. 1, no. 1, pp. 1-53, 2013.

[17] S. Dhawan, "Online learning: A panacea in the time of covid-19 crisis," *Journal of Educational Technology Systems*, vol. 49, no. 1, pp. 5-22, 2020.

[18] S. A. Raza, W. Qazi, K. A. Khan, and J. Salam, "Social isolation and acceptance of the learning management System (LMS) in the time of COVID-19 Pandemic: An expansion of the UTAUT MODEL," *Journal of Educational Computing Research,* vol. 59, no. 2, pp. 183-208, 2020.

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