

Repositório ISCTE-IUL

Deposited in *Repositório ISCTE-IUL*:

2023-07-13

Deposited version:

Accepted Version

Peer-review status of attached file:

Peer-reviewed

Citation for published item:

Santos, M. (2022). Blended learning compared to online learning in business, management, and accounting education: A bibliometric analysis and literature review. In Luísa Cagica Carvalho, Pedro Pardal (Ed.), *Interdisciplinary and practical approaches to managerial education and training*. (pp. 46-55).: IGI Global.

Further information on publisher's website:

10.4018/978-1-7998-8239-8.ch003

Publisher's copyright statement:

This is the peer reviewed version of the following article: Santos, M. (2022). Blended learning compared to online learning in business, management, and accounting education: A bibliometric analysis and literature review. In Luísa Cagica Carvalho, Pedro Pardal (Ed.), *Interdisciplinary and practical approaches to managerial education and training*. (pp. 46-55).: IGI Global., which has been published in final form at <https://dx.doi.org/10.4018/978-1-7998-8239-8.ch003>. This article may be used for non-commercial purposes in accordance with the Publisher's Terms and Conditions for self-archiving.

Use policy

Creative Commons CC BY 4.0

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a link is made to the metadata record in the Repository
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Blended Learning Compared to Online Learning in Business, Management and Accounting Education: A bibliometric analysis and literature review

INTRODUCTION

The journey of business, management and accounting education over the past decades included several teaching methods which may nowadays be considered outdated for the modern students who live, learn, and connect at technologies. Academics have already revealed that the way educators teach in this field can contribute for increasing the value of the students and mitigate possible enrolment declines (Maher, 2000). One of the variety of ways of including technologies in teaching is using technology for providing Online Learning or a mix between on-line and on-class education (Blended-Learning or B-Learning) (Martín et al., 2008).

During COVID-19 pandemic both Online Learning and B-Learning were used massively by educators. Nonetheless, those teaching methods have been applied by business, management and accounting educators prior this pandemic. In both periods (before and after COVID-19), (Parte & Herrador-Alcaide, 2021) revealed that those methods create, in both periods, the sense of belonging of the teaching community is high.

Despite the efforts that researchers have made for contributing for this field of knowledge during COVID-19 pandemic, the volume of literature published in past decades indicates that academics have been along the years contributing for creating knowledge around Online Learning and B-Learning methods which could be placed at the service of those who teach in the entire educational system.

In this sense, the present study aims to unveil the research trends exploring Online Learning and B-Learning methods for application in educational and training in the business, management and accounting disciplines. A comparative analysis of the results in each method is conducted, which can help professionals when choosing the accurate method and also the academics in identifying future research agendas.

BACKGROUND

The learning methods changed radically when technology started to be incorporated in education. The concept of distance learning gained force as a “*system design that are effectively incorporated in delivering education to student teacher and student may communicate asynchronously and synchronously*” (Al-Arimi, 2014). The literature describes a journey in which E-learning appeared as a way of offer tools to both students and teachers for running remote training and online courses. It includes for instance the use of wiki and blogs, chats, e-mail, and multimedia CD-ROMs (Martín et al., 2008). The B-Learning method allowed to combine the distance, online and on-class education which depends on the availability of resources, which were scarce in COVID-19 pandemic (Santos et al., 2021). The term hybrid learning and B-Learning are used interchangeably, but they mean the some in literature

(Hrastinski, 2019). This concept refers to a training or teaching environment combining face-to-face education with access to online learning tools (Hall & Davison, 2007). The role of B-Learning is especially relevant in the post lockdown period, in supporting the flexible learning expected in transitioning between fully online and blended (Nerantzi, 2020).

When social media become a reality, their impact was studied in order to understand how could it provoke a positive disruption in education, E-Learning and B-Learning. (King, 2012) actually confirmed that critical thinking, communication, collaboration, and creativity and innovation applied to social media tools could positively impact in educational and professional settings. E-learning tools were particularly relevant for mitigating constraints in educational sectors during the first lockdown period of COVID-19 pandemic, in which schools were closed and the contact between trainers/professors and trainees/students was exclusively online. Recent studies revealed the contribution of e-learning resources or facilities for the students' performance, showing a positive thought among students about e-learning (Sathishkumar et al., 2020).

Several authors are looking for the future of E-learning tools, namely discussing the limitations of current E-learning systems and proposing an analysis of good practices in other E-learning ecosystems which could benefit both teachers and students (Uden & Damiani, 2007). However, this discussion by default is based on the comparison between practices in industry sector versus educational sector, or public versus private sector case-studies. In other cases, the students versus teachers' perspectives are analysed (Cardoso et al., 2019).

A review of the academic literature addressing Online Learning and B-Learning methods for application in educational and training in the business, management and accounting disciplines could benefit this discussion, considering that academic publications explore the challenges of organizations in all different sectors and from actors' views. As in other fields, literature reviews supported academics and practitioners to be provided with an overview of the main topics within the scientific knowledge, as well as designing new research (Santos et al., 2020).

MATERIAL AND METHODS

In order to achieve the aim of this study, the academic literature was collected from the major scientific database, i.e., Scopus. For this purpose, two different queries were applied. The first allowed to select academic publications addressing Online Learning in regards to education and training methods, limited to the field of business, management and accounting (see query below).

TITLE-ABS-KEY (("education" OR "train") AND ("online learning")) AND (LIMIT-TO (SUBJAREA , "BUSI"))*

The second query was constructed based on the same layout, but the term Online Learning was replaced by Blended Learning (see query below).

TITLE-ABS-KEY (("education" OR "train") AND ("blended learning")) AND (LIMIT-TO (SUBJAREA , "BUSI"))*

After cleaning the publications that were found in both samples, a total of 1,036 documents were analysed. Based on the date of publication, the results show that the number of studies in both Blended-Learning and Online Learning methods are increasing, as presented in Table 1.

Table 1. Number of publications per period

Period	Blended-Learning	Online Learning	Total
1997-2006	30	65	95
2007-2016	152	259	411
2017-2021	176	354	530
Total	358	678	1,036

Although this tendency was very similar until 2016, the last 4 years made the Online Learning to become the focus of researchers. Indeed, based on the absolute frequency of the number of publications in both areas, it is clear that online learning is the learning method in business, management and accounting fields most addressed in the literature, and this difference was accentuated in recent years from 2017 up to 2021 (see Figure 1).

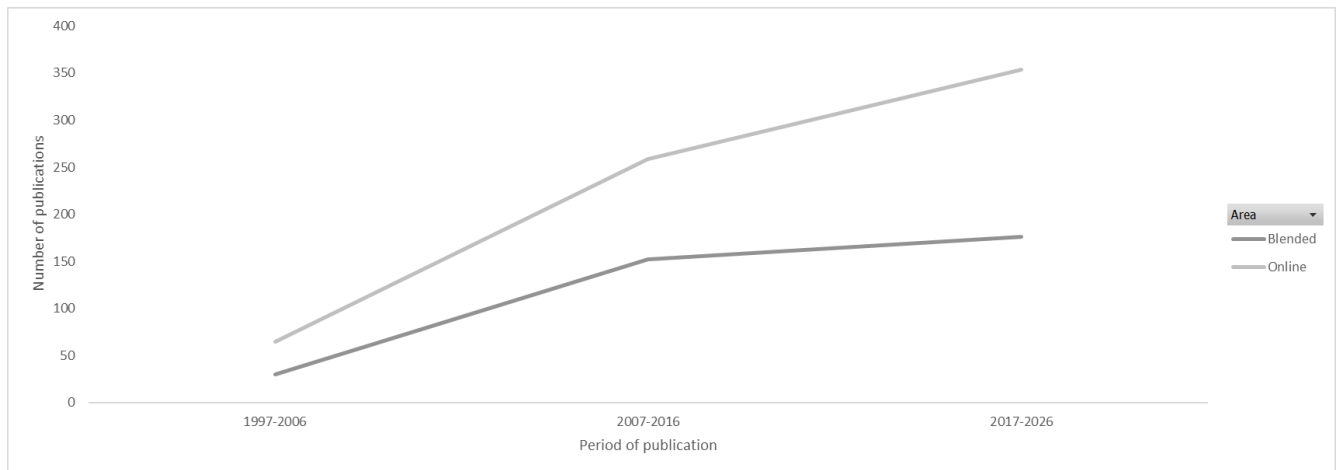


Figure 1. The absolute frequency of the number of papers addressing blended or online learning in business, management and accounting field

In order to unveil the main topics addressed in the literature in both groups of publications, the text included in those documents have been analysed using text mining computer assisted techniques. The VOSviewer algorithm was applied, considering that a free of charge software is provided by VOSviewer developers and it is a modern tool for clustering bibliometric data that has already proved to be scientifically validated in previous similar studies (Shah et al., 2019; van Eck & Waltman, 2010; Yu et al., 2020). Additionally, considering the big data involved in the sample of the material (text included in more than a thousand publications), a manual analysis is not feasible.

2016) or for assessing the value of online education in higher education, technical and professional courses (Arbaugh, 2007).

In regards to the Blended-Learning related literature, the three most relevant clusters include:

- Cluster 1: System, Process, and Learner
- Cluster 2: Community, Network, and Relationship
- Cluster 3: Programme, Country, Engagement

Studies contributing for the topics addressed in Cluster 1 are focused on contributing to improve the Blended-Learning experience from the learner's point of view. Academics suggest new integrated mobile systems to monitor students' academic achievement, interaction and satisfaction (Kouninef et al., 2012; Musa Al-Momani & PILLI, 2021) and explore factors influencing the continuance intention in using Blended-Learning environments (Abidin et al., 2021).

By another hand, studies addressing Blended-Learning also explore the concept of online community building, namely through the analysis of Business Centers which support the business community in applying driven innovation projects through a network of communities and enterprises intermediaries (Porumb & Analoui, 2008). Academics also explore the virtual collaboration in higher education blended learning arrangements (Bukvova et al., 2006).

Finally, literature contributes for understating factors that influence the student engagement using learning management systems like Blackboard, WebCT and Moodle (Sanusi et al., 2019). A focus on the students' experience is also analysed to understand how the use of Blended-Learning methods can enhance the student learning experience (Poon, 2012).

Evolution of clusters overtime

The network visualization provides an overview of the themes addressed in the literature in all the years of publication under analysis. In order to conclude on the evolution of the themes, the overlay visualization presented in Figure 3 is useful. Regarding Online-Learning, it is evident that the two first clusters unveiled in the literature are recent trends (shown in yellow), meaning that studies exploring Online-Learning methods in business, management, and accounting disciplines addressing COVID-19 pandemic challenges for educators and students (Cluster 1) or MOOCs (Cluster 2) are areas that need further development in future research.

FUTURE RESEARCH DIRECTIONS

Blended-Learning related studies have been timidly published in relation to the COVID-19 pandemic. Nonetheless, this method was very frequently used after first lockdown considering that single Online-Learning was not suffice for accomplishing educational goals. In this sense, future research could focus on addressing Blended-Learning method in the context of COVID-19 pandemic.

In regards to Online-Learning, future research should explore topics related to challenges for educators and students or MOOCs, applying different methodological approaches, as these are emerging clusters.

CONCLUSION

The present study clusters the academic literature addressing Online Learning and B-Learning methods for application in educational and training in the business, management and accounting disciplines. Through the collection of all the relevant publications in Scopus database, this study uses automated analysis in VOSviewer software to provide results on both literatures and making available material for comparing the evolution overtime of the Online and Blended methods in the context of scientific knowledge production.

The results contributed for the discussion on the status of science in both methods, which have been so relevant for educators and students apply in this COVID-19 pandemic. By one side, we have seen an exponential increase of Online-Learning related literature in recent years, proving that research in this field was not suffice for managing challenges that Online-Learning methods create for students and educators. By another hand, B-Learning methods related literature did not follow this climb, despite the fact of being a method used in COVID-19 pandemic specially after the first lockdown.

The present study's analysis is limited to the application of E-Learning and B-Learning in educational and training in the business, management and accounting disciplines. Further studies could provide insights in respect to remaining disciples. Furthermore, the results and critical analysis provided in this study provides students and educators with birds-eyes on academic contributions they can find in literature, and provide guidelines for future research agenda.

REFERENCES

- Abidin, Z., Rokhman, F., & Mathrani, A. (2021). Exploring the influencing factors of learning management systems continuance intention in a blended learning environment. *International Journal of Innovation and Learning*, 30(2). <https://doi.org/10.1504/IJIL.2021.117221>
- Al-Arimi, A. M. A.-K. (2014). Distance Learning. *Procedia - Social and Behavioral Sciences*, 152, 82–88. <https://doi.org/10.1016/j.sbspro.2014.09.159>
- Anthony Jnr, B., & Noel, S. (2021). Examining the adoption of emergency remote teaching and virtual learning during and after COVID-19 pandemic. *International Journal of Educational Management*, 35(6). <https://doi.org/10.1108/IJEM-08-2020-0370>

- Arbaugh, J. B. (2007). Does the community of inquiry framework predict outcomes in online mba courses? *Academy of Management 2007 Annual Meeting: Doing Well by Doing Good, AOM 2007*.
- Bukvova, H., Gilge, S., & Schoop, E. (2006). Virtual collaboration in higher education blended learning arrangements. *Workshop Gemeinschaften in Neuen Medien (GeNeMe) 2006*. <http://www-mmt.inf.tu-dresden.de/geneme2006/>
- Cardoso, T., Pestana, F., & Pina, J. (2019). ASSESSING A B-LEARNING TEACHING APPROACH AND STUDENTS' LEARNING PREFERENCES IN HIGHER EDUCATION. *EDULEARN19 Proceedings*, 10007–10012. <https://doi.org/10.21125/edulearn.2019.2502>
- Hai-Jew, S. (2014). *Iff and other conditionals: Expert perceptions of the feasibility of massive open online courses (MOOCs) - A modified E-Delphi study*. IGI-Global. <https://doi.org/10.4018/978-1-4666-5137-1.ch013>
- Hall, H., & Davison, B. (2007). Social software as support in hybrid learning environments: The value of the blog as a tool for reflective learning and peer support. *Library & Information Science Research*, 29(2), 163–187. <https://doi.org/10.1016/j.lisr.2007.04.007>
- Hrastinski, S. (2019). What Do We Mean by Blended Learning? *TechTrends*, 63(5), 564–569. <https://doi.org/10.1007/s11528-019-00375-5>
- King, K. P. (2012). Social Media as Positive Disruption in Education, E-Learning and B-Learning. In *Handbook of Research on Business Social Networking*. IGI Global. <https://doi.org/10.4018/978-1-61350-168-9.ch023>
- Kouninef, B., Tlemsani, R., Rerbal, S. M., & Lotfi, A. (2012, July). LMS INTTIC system using mobile technology and podcasting in blended learning. *International Conference on Education and E-Learning Innovations*. <https://doi.org/10.1109/ICEELI.2012.6360593>
- Maher, M. W. (2000). Management Accounting Education at the Millennium. *Issues in Accounting Education*, 15(2). <https://doi.org/10.2308/iace.2000.15.2.335>
- Martín, S., Gil, R., Díaz, G., Sancristobal, E., Castro, M., & Peire, J. (2008). From e-learning to m-learning through b-learning and s-learning. *50th International Symposium ELMAR-2008*, 10–12.
- Musa Al-Momani, M., & PILLI, O. (2021). The Impact of Integrated Mobile System on Students' Academic Achievement, Interaction and Satisfaction. *TEM Journal*. <https://doi.org/10.18421/TEM103-50>
- Nerantzi, C. (2020). The use of peer instruction and flipped learning to support flexible blended learning during and after the COVID-19 Pandemic. *International Journal of Management and Applied Research*, 7(2), 184–195.
- Parte, L., & Herrador-Alcaide, T. (2021). Teaching Disruption by COVID-19: Burnout, Isolation, and Sense of Belonging in Accounting Tutors in E-Learning and B-Learning. *International Journal of Environmental Research and Public Health*, 18(19), 10339. <https://doi.org/10.3390/ijerph181910339>

- Poon, J. (2012). Use of blended learning to enhance the student learning experience and engagement in property education. *Property Management*, 30(2). <https://doi.org/10.1108/02637471211213398>
- Porumb, E. M., & Analoui, F. (2008). How to use KM effectively in a European context: the case of BCT in Romania. *International Journal of Business Information Systems*, 3(6). <https://doi.org/10.1504/IJBIS.2008.018993>
- Razmerita, L., Kirchner, K., Hockerts, K., & Tan, C.-W. (2020). Modeling Collaborative Intentions and Behavior in Digital Environments: The Case of a Massive Open Online Course (MOOC). *Academy of Management Learning & Education*, 19(4). <https://doi.org/10.5465/amle.2018.0056>
- Santos, M. R. C., Laureano, R. M. S., & Moro, S. (2020). Unveiling Research Trends for Organizational Reputation in the Nonprofit Sector. *Voluntas*, 31, 56–70. <https://doi.org/10.1007/s11266-018-00055-7>
- Santos, M. R. C., Nunes, S., Dominginhos, P., Mourato, J., Mata, C., & Teixeira, N. M. (2021). Financial Capacity During a Pandemic Crisis: Insights From the Non-Profit Sector. In N. M. Teixeira & I. Lisboa (Eds.), *Handbook of Research on Financial Management During Economic Downturn and Recovery* (pp. 59–76). IGI Global. <https://doi.org/10.4018/978-1-7998-6643-5.ch004>
- Sanusi, N. M., Kamalrudin, M., & Mohtar, S. (2019). Student Engagement using Learning Management System in Computer Science Education. *International Journal of Recent Technology and Engineering*, 8(2S11). <https://doi.org/10.35940/ijrte.B1121.0982S1119>
- Sathishkumar, V., Radha, R., Mahalakshmi, K., Kumar, V. S., & Saravanakumar, A. R. (2020). E-Learning during Lockdown of Covid-19 Pandemic: A Global Perspective. *International Journal of Control and Automation*, 13(4), 1088–1099.
- Shah, S. H. H., Lei, S., Ali, M., Doronin, D., & Hussain, S. T. (2019). Prosumption: bibliometric analysis using HistCite and VOSviewer. *Kybernetes*, 49(3), 1020–1045. <https://doi.org/10.1108/K-12-2018-0696>
- Uden, L., & Damiani, E. (2007). *The future of B-learning: B-learning ecosystem*. IEEE DEST.
- Vaghjee, H., & Panchoo, S. (2016, August). Applying the Community of Inquiry Framework to explore sense of community on Moodle. *2016 IEEE International Conference on Emerging Technologies and Innovative Business Practices for the Transformation of Societies (EmergiTech)*. <https://doi.org/10.1109/EmergiTech.2016.7737370>
- van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, 84(2), 523–538. <https://doi.org/10.1007/s11192-009-0146-3>
- Yu, Y., Li, Y., Zhang, Z., Gu, Z., Zhong, H., Zha, Q., Yang, L., Zhu, C., & Chen, E. (2020). A bibliometric analysis using VOSviewer of publications on COVID-19. *Annals of Translational Medicine*, 8(13), 1–11. <https://doi.org/10.21037/atm-20-4235>

KEY TERMS AND DEFINITIONS

Online-Learning: This is an educational and training method that uses Information and Communication Technologies for remote and distance education.

Blended-Learning: This is an educational and training method that combines offline (face-to-face, traditional learning) and online learning.

VOSviewer: VOSviewer is a software tool for constructing and visualizing bibliometric networks.

Text-mining: A technique of data analysis useful for analysis of unstructured text. This is a computer-assisted text analysis technique that provides insights regarding the most cited terms in corpus.