



## The Influence of Technology on the Effectiveness of Management Education

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### ABSTRACT

This article aims to give a comprehensive and interdisciplinary analysis of the factors that contribute to the success of technology-supported management learning and to indicate prospective areas of focus for further study. Higher education is no longer defined by sitting and soaking up information in traditional lecture halls. Instead, the development of new technology has made it possible to engage in the active building of knowledge in more virtual environments. These changes, like the learning environment, impact the education of tomorrow's business leaders. However, there is a lack of cohesion and consistency within study fields regarding how technology may aid in management education and what that can mean for instructors. The findings obtained in cognitive research, learning environments, higher learning, and management education are organised and incorporated into this article using a methodical technique explicitly developed for this purpose. Because of this, we can get a thorough overview of the numerous antecedents contributing to the efficacy of technology-supported managerial education from various disciplines. The results of our research indicate that additional research is needed in several different areas, including the following: (i) the most effective way to combine and flip formats for a wide range of management fields of study and content types; (ii) the collection, styling, and uniqueness of the technologies that were utilised; (iii) the teaching style of the instructor, which includes feedback and deliberate confusion; and (iv) the learners' affective states, which include their motivations and emotions, as well as the role that prior knowledge plays.

## 1. Introduction

The traditional method of management education consisted of students sitting passively and listening to lectures in synchronous and analogue classrooms. However, thanks to technological advancements, most management education is now focused on students actively building their knowledge in increasingly automated and virtual learning environments (Martin, Dennen, & Bonk, 2020). The historically common objectivist paradigm of learning presupposes that an actual fact can be conveyed, which lends credence to the more conventional lecture style (Makhaya & Ogange, 2019). On the other hand, the construction model of learning claims that students learn best when they create their own knowledge by actively interacting with and making meaning of the material they are given. This model also implies that there are many representations of reality (Tinanoff et al., 2019). In most cases, technology serves as a medium through which the constructivist model may be carried out. Therefore, technology-supported management learning is regarded as the "paradigm of contemporary education".

Because of the increasing prevalence of technology in management education, a significant amount of attention has been directed toward studying management in settings other than the conventional classroom (Shukla, Dosaya, Nirban, & Vavilala, 2020). Work on the conceptual level as well as the empirical level has been done in a variety of fields. For instance, new research has been conducted in educational psychology (Donaldson & Allen-Handy, 2020), educational technology, and higher education. Both the quality and quantity of study in online and blended professional education have significantly risen over the previous decade (Müller & Wulf, 2020).

On the other hand, the many research subfields pursue various goals and methods. For instance, educational psychologists often use a learner-centred approach. This means that they examine how learning happens via the human cognitive framework and offer technology solutions to improve processes relevant to learning. Conversely, educational technology academics promote a technology-centred strategy that advocates introducing technological advancements into the curriculum and expecting students to change (Sun & Scanlon, 2019). In addition, the research that has been done so far demonstrates that some precursors to technology-supported management development have the same impacts in various fields.

In contrast, others lead to results in direct opposition to one another. As a result, the status of the literature at present is very disorganised and, in some ways, inconsistent. It has not been possible to locate a literature review that combines the data obtained from the many different disciplines, much less one that is only focused on management education.

Therefore, to contribute to the growing academic debate on technology-supported management learning, this research investigates the factors that first led to such knowledge. “No one theory of learning accounts for all elements of learning. As a result, the prevalent ideas in educational psychology and innovative educational research will be compared with the essential concepts in management and higher education literature. In addition, this paper enhances previously established theories by incorporating more contemporary research topics, such as confusion and emotions.

This paper is organised in the following format: Section 2 talks about the factors contributing to the success of management education backed by technology. Section 3 focuses on the format attributes and qualities. Section 4 is dedicated to conclusions and summaries, including critical concluding remarks for research directions.

## **2. The Factors that Contribute to the Success of Management Education that is Backed by Technology**

About thirty years' worth of research has been devoted to figuring out how best to incorporate various technology into educational settings. The first variant of the technology acceptance model (TAM) was used to investigate the factors that led to the adoption of a particular technology. He claimed that the attributes of a computer motivate learners to utilise it, which leads to the technology being used in practice by learners. More precisely, it is expected that the characteristics of a technology will influence the perception of perceived ease of utility of that technology, which will in turn change attitudes toward utilising that technology, which will affect actual usage of that technology. Even though it was not designed with education in mind, this paradigm has become the foundation for research on instructional technology. According to the findings of several types of research on management education aided by technology, factors such as perceived utility and perceived ease of use influence satisfaction levels but do not directly predict the effects of psychological education (Wang & Yang, 2022). It is made that discovery that the perceived ease of using technology is a good predictor of its adoption. Evidence is provided that observed ease of application and utility are predictive of a technology adoption, and he discloses that convenience of use is mainly driven by usefulness. E-learners can better concentrate on the material when the technology is simple and straightforward (Rajakumar, Yenduri, Vyas, & Binu, 2021).

The term task-technology fit (TTF) was argued that “for an information system to have a positive influence on system performance, the system must be employed, and it must be a good match with the activities it supports (Alamri, Almaiah, & Al-Rahmi, 2020). Antecedents of the success of innovation management learning that are widely investigated include the quality and dependability of the technology (Jain et al., 2020). In an early experiment with simultaneous technology-supported online courses based on online lectures and videos, it is found that both variables influence attitudes toward the template and the future technologies and that the quality of the technology also influences the favourable position of the format. This was found in an experiment that was based on online lectures. They contend that student motivation may be increased by using dependable, efficient, and effective technology interfaces, whilst the reverse can be achieved through complicated technological processes.

On the other hand, they did not identify any correlations between participation and participation, engagement in learning, technological self-efficacy, or the effectiveness of the technology. It is provided evidence that demonstrates how participants see the presence of technical issues as a barrier to online learning. Investigate the role of technology and internet quality in e-learning. Still, they conclude that these factors have no impact on the level of satisfaction experienced by management students. Notably, the quality of the internet may be assumed to be standard. It is investigated the function of learning analytics and provides empirical data suggesting that TTF has a significant influence on learners' perceptions of their learning but only a little impact on the actual learning that takes place (Alshehri, J Rutter, & Smith, 2020). They also demonstrate an indirect association between TTF and reported learning via the learners' attitudes about the usage of technology and their actual use. They also show that TTF influences the expected outcomes of technology use, even though this has no bearing on how people use technology (Alshehri et al., 2020; Bhaskar, Tiwari, & Joshi, 2020; Otterborn, Schönborn, & Hultén, 2019).

The understanding of the internet as an e-elsewhere has long since been abandoned in the social scientific study of digital phenomena, which now emphasises how digital technologies are a component of a web of social, cultural, and economic ties crisscrossed the internet and outnumbers it (Araya, Dahalan, & Muhammad, 2021); (Mohammed Abdullellah Yousuf Saeed et al., 2017); (Mohd Abdullellah Yousuf Saeed et al., 2018). The presence of a wide variety of technological resources has a beneficial influence on various factors, including participation, involvement in the cognitive effort, technology self-efficacy, perceived usefulness, acceptance of technology and template, and perceived acquiring knowledge (Shenoy, Mahendra, & Vijay, 2020). They suggest that the availability of technology helps make teachers and their feedback more accessible, which in turn moderates the level of learner motivation, hence predicting how much technology is used and how much is perceived to be learned. The use of rapid feedback technology, such as clickers, may have a beneficial effect on the results of a student's education. Passive online activities such as watching videos may help introduce new ideas. However, more active components, such as quizzes, are better for learning (Atmojo & Nugroho, 2020). It is found that a correlation between watching lecture-capture films and receiving greater grades on subsequent exams. Understanding is improved by technology elements that encourage constructive discourse and participatory learning. It is pointed out that perceived learning may be predicted based on the design and functioning of a learning management system (Grenner et al., 2020). In addition, a positive association is demonstrated between the fun of using

technology and a learner's level of happiness in an environment that supports mobile learning. The ability of learners to govern themselves is a moderating factor in the impacts of pleasure brought on by usefulness and playfulness (Bansah & Agyei, 2022; Yadnya, 2022).

### **3. Format Attributes and Qualities**

The physical classroom has historically served as the foundation for the instructional model; however, introducing new technology into management education has made it possible for new learning environments to arise. Research on education at the postsecondary level suggests a blended learning environment, independent of the technology used. This approach was described as an integration of face-to-face and virtual educational experiences, not stacking one on top of the other. It is found that blended learning environments, which combine traditional in-person classes with various online activities (such as crosswords, try to match, fill in the empty, lots of tests, wikis, and forums), lead to a decrease in the number of students. This result is for those who drop out of school and an increase in the quality of their test scores (Matthew, 2019). Under TAM, they demonstrate that the perceived usefulness of online learning is connected with the motivation provided by the innovation, which then, in return, predicts pleasure. However, they discover that real learning primarily depends on factors unrelated to diverse settings, such as the age of the learners, their attendance in class, or their past experiences; perceived usefulness and pleasure do not indicate rote memorisation. Notably, it is found that the use of online resources may help compensate for students who are absent from class. These environments combined traditional classroom instruction with online collaboration and independent study. However, they also found that such situations are connected with excellent student dropout rates. They contend that the training effect may be susceptible to survivorship bias (Karimzadeh et al., 2021; Müller & Wulf, 2020; Rahimi et al., 2020).

Although blended schools capture the advantages of technical breakthroughs, such as freedom in terms of time and location and learner control over speed and material, they also capture the benefits of traditional classrooms, such as human engagement via collaboration and community. Blended learning environments combine traditional classrooms' benefits with technological advancements. The ability to customise one's coursework is directly related to one's level of contentment with e-learning. The idea behind learner flexibility is that it makes it easier for them to juggle their academic responsibilities with other aspects of their lives, such as employment, family, and other hobbies. According to studies conducted on students in higher education, learner autonomy is one of the essential factors in developing critical thinking abilities. According to studies in educational psychology, giving students more say over the course materials may benefit students' ability to assimilate information at their own pace. The term "pacing" describes an adaptable display pace with the ability to stop, rewind, and fast-forward. While learners can limit their information abilities at a given moment by controlling the video, rewinding may increase cognitive processing since they are exposed to the same material many times. Learners may end up with shorter parts thanks to the fast-forward option, which also benefits their cognitive processing since it permits some sections to be skipped (Ahmed & Opoku, 2022). Learners can progressively construct various mental representations, which may be merged at a later stage when the material is presented in discrete portions. New integration in multimedia settings generates motivation and interest and, as a result, activates more active and creative processing. Learners benefit from this environment (Liu, Hwang, Tu, Yin, & Wang, 2021). It is found that there is no strong relationship between adaptability and observed learning (Besser, Flett, & Zeigler-Hill, 2022). In Figure 1, the illustration of format attributes and qualities will be represented.

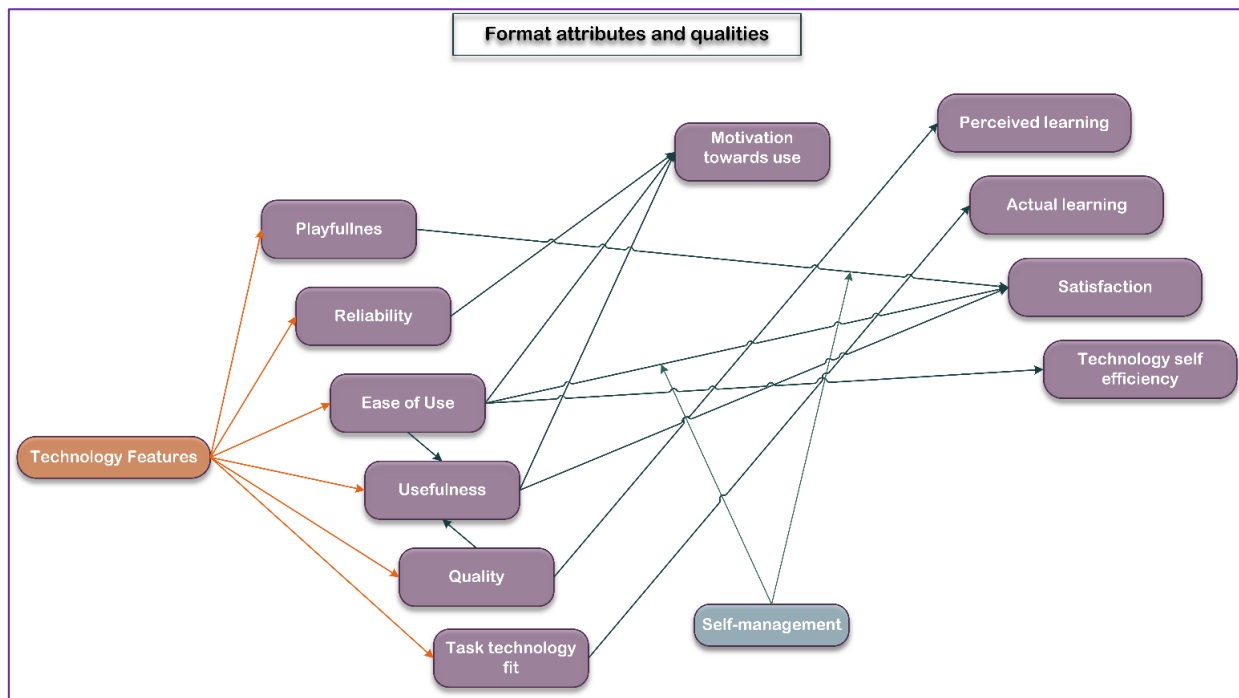


Figure: 1 Format attributes and qualities for predecessors

#### 4. Conclusion

This study demonstrates how educational technology is fast becoming an essential component of the theoretical foundation and the practical foundation of management education. Even if we've discovered a range of research holes and potential topics for more investigation, education stakeholders, institutions, and professionals shouldn't wait until further study is finished before acting. It is no more accurate to think that the most successful teaching method is transmitting information passively via synchronised and analogue class time. Additionally, there are some clues as to what defines successful technology-supported management education. In the interim, scholars from various fields should continue their examinations of technology-supported environments in connection to management education and other areas (Kuo & Belland, 2019; Müller & Wulf, 2020).

#### References

- Ahmed, V., & Opoku, A. (2022). Technology supported learning and pedagogy in times of crisis: the case of COVID-19 pandemic. *Education and information technologies, 27*(1), 365-405.
- Alamri, M. M., Almaiah, M. A., & Al-Rahmi, W. M. (2020). The role of compatibility and task-technology fit (TTF): On social networking applications (SNAs) usage as sustainability in higher education. *IEEE Access, 8*, 161668-161681.
- Alshehri, A., J Rutter, M., & Smith, S. (2020). The effects of UTAUT and usability qualities on students' use of learning management systems in Saudi tertiary education. *Journal of Information Technology Education: Research, 19*.
- Araya, A., Dahalan, J., & Muhammad, B. (2021). Blockchain Technology and Regression Methods: A Case of Conceptual Framework. *International Journal of Business Society (ijo-bs), 5*(11), 450-463. doi:10.30566/ijo-bs/2021.11.66
- Atmojo, A. E. P., & Nugroho, A. (2020). EFL classes must go online! Teaching activities and challenges during COVID-19 pandemic in Indonesia. *Register Journal, 13*(1), 49-76.
- Bansah, A. K., & Agyei, D. D. (2022). Perceived convenience, usefulness, effectiveness and user acceptance of information technology: Evaluating students' experiences of a Learning Management System. *Technology, Pedagogy and Education, 1*-19.
- Besser, A., Flett, G. L., & Zeigler-Hill, V. (2022). Adaptability to a sudden transition to online learning during the COVID-19 pandemic: Understanding the challenges for students. *Scholarship of Teaching and Learning in Psychology, 8*(2), 85.
- Bhaskar, P., Tiwari, C. K., & Joshi, A. (2020). Blockchain in education management: present and future applications. *Interactive Technology and Smart Education*.
- Donaldson, J. P., & Allen-Handy, A. (2020). The nature and power of conceptualisations of learning. *Educational Psychology Review, 32*(2), 545-570.
- Grenner, E., Åkerlund, V., Asker-Árnason, L., van de Weijer, J., Johansson, V., & Sahlén, B. (2020). Improving narrative writing skills through observational learning: a study of Swedish 5th-grade students. *Educational Review, 72*(6), 691-710.

- Jain, S. R., Sui, Y., Ng, C. H., Chen, Z. X., Goh, L. H., & Shorey, S. (2020). Patients' and healthcare professionals' perspectives towards technology-assisted diabetes self-management education. A qualitative systematic review. *PLoS one*, 15(8), e0237647.
- Karimzadeh, A., Leupold, F., Thielmann, A., Amarell, N., Klidis, K., Schroeder, V., . . . Weltermann, B. (2021). Optimising blood pressure control by an Information Communication Technology-supported case management (PIA study): Study protocol for a cluster-randomised controlled trial of a delegation model for general practices. *Trials*, 22(1), 1-12.
- Kuo, Y.-C., & Belland, B. R. (2019). Exploring the relationship between African American adult learners' computer, internet, and academic self-efficacy, and attitude variables in technology-supported environments. *Journal of Computing in Higher Education*, 31(3), 626-642.
- Liu, C., Hwang, G.-J., Tu, Y.-f., Yin, Y., & Wang, Y. (2021). Research advancement and foci of mobile technology-supported music education: a systematic review and social network analysis on 2008-2019 academic publications. *Interactive Learning Environments*, 1-20.
- Makhaya, B. K., & Ogange, B. O. (2019). The effects of institutional support factors on lecturer adoption of elearning at a conventional university. *Journal of learning for development*, 6(1), 64-75.
- Martin, F., Dennen, V. P., & Bonk, C. J. (2020). A synthesis of systematic review research on emerging learning environments and technologies. *Educational Technology Research and Development*, 68(4), 1613-1633.
- Matthew, U. O. (2019). Information System Management & Multimedia Applications in an E-Learning Environment. *International Journal of Information Communication Technologies and Human Development (IJICTHD)*, 11(3), 21-41.
- Saeed, M. A. Y., Bekhet, H. A., & Dhar, B. K. (2017). Constructing model to explore the influence of marketing audit on organizational performance—An innovative arena of marketing. *International Journal of Business Society*, 1(1), 37-47.
- Saeed, M. A. Y., & Bekhet, H. A. (2018). Influencing Factors of Mobile Marketing among Young Malaysian Customers. *Australian Journal of Basic and Applied Sciences*, 12(9), 63-72.
- Müller, F. A., & Wulf, T. (2020). Technology-supported management education: a systematic review of antecedents of learning effectiveness. *International Journal of Educational Technology in Higher Education*, 17(1), 1-33.
- Otterborn, A., Schönborn, K., & Hultén, M. (2019). Surveying preschool teachers' use of digital tablets: general and technology education related findings. *International journal of technology and design education*, 29(4), 717-737.
- Rahimi, K., Nazarzadeh, M., Pinho-Gomes, A.-C., Woodward, M., Salimi-Khorshidi, G., Ohkuma, T., . . . Cleland, J. (2020). Home monitoring with technology-supported management in chronic heart failure: a randomised trial. *Heart*, 106(20), 1573-1578.
- Rajakumar, B., Yenduri, G., Vyas, S., & Binu, D. (2021). Ontology alignment evaluation for online assessment of e-learners: a new e-learning management system. *Kybernetes*.
- Shenoy, V., Mahendra, S., & Vijay, N. (2020). COVID 19 lockdown technology adaption, teaching, learning, students engagement and faculty experience. *Mukt Shabd Journal*, 9(4), 698-702.
- Shukla, T., Dosaya, D., Nirban, V., & Vavilala, M. P. (2020). Factors extraction of effective teaching-learning in online and conventional classrooms. *International Journal of Information and Education Technology*, 10(6), 422-427.
- Sun, A. Y., & Scanlon, B. R. (2019). How can Big Data and machine learning benefit environment and water management: a survey of methods, applications, and future directions. *Environmental Research Letters*, 14(7), 073001.
- Tinanoff, N., Baez, R. J., Diaz Guillory, C., Donly, K. J., Feldens, C. A., McGrath, C., . . . Sharkov, N. (2019). Early childhood caries epidemiology, aetiology, risk assessment, societal burden, management, education, and policy: Global perspective. *International journal of paediatric dentistry*, 29(3), 238-248.
- Wang, Y., & Yang, D. (2022). The Design of Psychological Education Intervention System in Universities Based on Deep Learning. *Computational Intelligence and Neuroscience*, 2022.
- Yadnya, I. D. G. S. A. (2022). The Influence of Perceived Usefulness and Perceived Ease of Use on the Performance of State Financial Management (Study on the Work Unit of the Ministry of Education and Technology). *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 5(2), 10351-10361.