

**Teaching Culturally and Linguistically Diverse International Students in Open and/or
Online Learning Environments: A Research Symposium**

**The Lessons learned from Covid-19, and the Implications for LMS
Use to Support Student Success**

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Abstract

In order to smoothly transition to the online educational platforms, after the impact of the COVID-19 pandemic, the integration of learning management systems (LMS) becomes vital for developing countries to keep up with the dynamic international educational context. With the worldwide lockdown, due to COVID-19, and the transition to online learning, some students are satisfied with the support provided by educational institutions. Still, deficient computer skills, and lack of teacher training (Toquero & Talidong, 2020) issues, regarding curriculum, assessment, and accountability, prevented them from perceiving their improved performances in the new teaching environment in most of the developing countries (Aristovnik et al., 2020). This paper will explore how to address these challenges, considered a result of the limited numbers of trained teachers, inadequate management systems for teacher recruitment, training, performance, evaluation, and a relatively outdated curriculum, and consider more effective instructional approaches with the incorporation of learning management systems (LMS).

Keywords: COVID-19 impact, international students, online learning, learning management systems (LMS), student success, inclusion

Introduction

With the worldwide lockdown, due to COVID-19, and the transition to online learning, some students are satisfied with the support provided by educational institutions. Some students, however, are in a vulnerable situation (Zabin, 2021), as deficient computer skills, lack of teacher training (Toquero & Talidong, 2020) issues, regarding curriculum, assessment, and accountability, prevented them from perceiving their improved performances in the new teaching environment, in most of the developing countries (Aristovnik et al., 2020).

Even before COVID-19, there was already much growth and adoption of educational technology, with global edtech investments reaching “US\$18.66 billion in 2019 and the overall market for online education projected to reach \$350 billion by 2025,” as shared by Business Insider in 2020 (para.2).

Whether it is language apps (Digan, 2020), virtual tutoring (Moralis, 2020), video conferencing tools (Kelly, 2020), or online learning software (Digan, 2020), there has been a significant surge in the use of these e-tools since COVID-19. With this sudden shift away from the classroom, in many parts of the globe, some wonder whether the adoption of online learning will continue to persist post-pandemic, and how such a shift would impact the worldwide educational market.

This paper identifies the challenges, and explores how to address them, that are considered a result of the limited numbers of trained teachers, inadequate management systems for teacher recruitment, training, performance, evaluation, and a relatively outdated curriculum, and will consider more effective instructional approaches, with the incorporation of learning management systems (LMS).

Literature Review

Learning management systems serve as a portal through which students can access learning materials, and see their assignments and grades (Pappas, 2016). This can facilitate student success, by providing students with access to their learning material, 24 hours a day, 7 days a week, without regard to their locations. The rapid lockdowns that took place, as a result of the pandemic, left many students in a deficient situation, as they were stuck at home without access to their textbooks (Tariq & Fami 2020). The consolidation of learning resources into a digital library ensures all that educators have access to centrally-created materials, ensuring that all teachers have access to high-quality learning resources. Research has demonstrated that when teachers collaborate, it can have a positive impact on student learning, as the use of effective and innovative pedagogical approaches become the norm (Vangrieken, Dochy, Raes, & Kyndt, 2015). A digital library, housed in an LMS, can be essential to the efficient dissemination of best practices and exemplary learning resources.

In the last decade, the move to digitize educational resources has greatly benefitted the rise of open educational resources (OER). OER being "teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain, or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others, with no, or limited restrictions" (UNESCO, 2012, Adoption of the 2012 Paris OER Declaration). OER repositories, like the OER Commons (2007-2021), include links to textbooks, workbooks, lesson plans, lectures, assignments, and more, for preschool to university classrooms, and across a plethora of subject areas. To rapidly improve the curriculum resources available to secondary,

college, and university students in developing countries, the high-quality, peer-reviewed textbooks freely distributed by OpenStax library could be made available via an LMS for the interested educator or student (OpenStax, n.d.). Considered ideal for online learning, the California State University System, with over 480,000 students, determined that the use of low and no-cost open educational resources fostered faculty innovation, increased access for students, and saved students over \$50 million (US) dollars (Kelly, 2020).

Beyond being essential to the efficient delivery of remote teaching, the use of next-generation LMS systems facilitate flexible educational delivery models that would not be possible without the advanced functionality they provide. A well-designed course, housed on a learning management system, can be repurposed to be used to support a variety of different instructional approaches. Thoughtfully created lessons can then be used for blended/flipped teaching, as well as modified to support differentiated instruction and assessment for in-person classes.

Blended / Flipped teaching

A blended learning approach combines online learning with in-person teaching by leveraging the strengths of each modality (Dziuban et al., 2018). Considerable research documented that a blended approach could have a positive impact on student achievement, as it facilitates improved learning outcomes by increasing accessibility and flexibility, sense of community, the effective use of resources, and student satisfaction, while also reducing student attrition (Picciano et al., 2015; Poon, 2013). Regardless of whether it takes place in advance of the in-person class or after, being able to review and process online learning resources at their own pace serves to personalize students' learning, resulting in increased student understanding and satisfaction (O'Connor, Mortimer & Bond, 2011). A learning experience is considered to be 'flipped,' when students are required to complete specific, direct learning tasks online before having the opportunity to demonstrate what they have learned during the in-person class.

Differentiated instruction

Like the increased instructional flexibility that can result from using an LMS, housing their lessons online can make it easier for teachers to differentiate instruction. Differentiated instruction is based on the premise that students learn best when teachers address differences in student ability and interests, by differentiating learning content, process, or product (Tomlinson & Imbeau, 2014). With the use of an LMS, educators can easily and efficiently provide struggling or advanced students with links to supplementary materials that address the specific needs and interests of their students. A differentiated approach is paramount to the success of under-performing students, as research had indicated that differentiation could result in significant improvements in the test scores of previously low-achieving students (Subban, 2006).

Innovative Assessment Strategies

The technological affordances of a next-generation LMS can foster the use of innovative assessment strategies that include audio or formative video feedback, online polls, mastery quizzes, and auto-graded tests (Zabolotniaia et al., 2020). These types of formative assessment strategies can greatly enhance student learning, as the gains triggered by the formative

assessment are amongst the largest ever reported for educational interventions, with the largest gains being realized by low achievers (Heritage, 2010). Beyond being more secure and cost-effective than paper tests and exams, digital tests created with the assistance of artificial intelligence can greatly reduce teacher workload, when it comes to creating and grading tests. Kh (2020) shares that several versions of an exam can be created by randomizing the order of questions, or randomly generating unique questions of equal difficulty, which can save a school hundreds of hours of teacher time, while also mitigating student cheating. The ability to create auto-graded tests that provide instant feedback to students and teachers can significantly enhance student learning, and ensure that teachers always have a clear understanding of student ability (Gabarre & Gabarre, 2010; Kh, 2020).

Enhanced Student & Parent Communication

While student-teacher communications can often have a positive impact on student achievement (Amadi and Paul, 2017), parent-teacher communication can also be considered essential to student success, as years of research has revealed that students who have parents who monitor their student's schoolwork, daily activities, and frequently communicate with teachers have higher grades and test scores (Epstein, 1987; Olmstead, 2013). The long-term impact of enhanced parent engagement is that the children of highly engaged parents graduate at higher levels, and are more likely to pursue post-secondary education. While parent communication is possible without the use of an LMS, the tech-enabled communication that is possible with an LMS is more effective by both teachers and parents (Olmstead, 2013).

Enhanced Accountability, Quality Assurance, and Administrative Oversight

The implementation of a next-generation LMS can also result in significant administrative benefits. Consolidating content in a central location makes it easy for administrators to review lesson content and ensure an appropriate level of quality assurance (Anderson, 2017). An LMS with a digital library can be an effective means to foster teacher collaboration and sharing. A digital library that includes exemplary curriculum materials and professional development resources can serve to improve the quality of teaching throughout a school, and overcome the challenge of ensuring that all students receive a high-quality education (Chaw & Tang, 2018) in developing countries. Anderson (2017) states that having an administrative dashboard that displays system-wide attendance, logins, and access analytics can enhance administrative oversight. Consequently, having access to a next-generation learning management system can foster the much-needed improvements in organizing teaching and learning, managing personnel, giving due attention to underperforming children, and overall accountability, at the institutional level, deemed necessary for these countries.

Methods

This qualitative study explores an in-depth literature review based on the COVID-19 impact on international education and the transition to the online educational platform. It also focuses on a broad account of document analysis of the UNESCO Sustainable Educational Goals strategic manuals and education projects documents of UNESCO that revealed the needs of the Asia-Pacific region that are associated with a lack of alignment and coordination between

national ICT in education policy, and actual teacher development, on how to effectively use ICT to enhance pedagogy and student learning (UNESCO, 2019).

Research Questions:

- What are the technological barriers that obstruct student success in the teaching and learning process of the educational systems in developing countries?
- How should the challenges caused by the limited numbers of technological resources in these educational institutions be addressed?

These research questions were explored to examine the ed-tech challenges, and possible solutions, by implementing learning management systems to support student success in these developing countries.

Results

While the global pandemic and the resulting shutdowns have exasperated the challenges of pre-pandemic educational systems, one of the positive lessons learned is that next-generation learning management systems (LMS) can be used to overcome many educational challenges, and directly contribute to student achievement today and into the future (Hamane, 2014; Steele, 2018). Used effectively, an innovative LMS can be used to:

- Consolidate learning resources in a one cloud-based location
- Support flexible delivery models
- Enhance student & parent communication
- Support ongoing teacher professional development
- Increase efficiency and reduce costs

Educational systems that take advantage of the functionality that an LMS offers can expect to benefit from a) enhanced accountability, quality assurance, and administrative oversight; b) improved student achievement, as a result of increased student engagement; and c) increased efficiency and cost savings (You, 2016).

Consequently, using a next-generation LMS should be considered more than an emergency resource, but, rather, an essential element for the evolution of education in the 21st-century.

Discussion and Conclusion

As technology continues to change the nature of work, educational systems that fail to address their academic shortcomings, and close the technological skills' gaps may severely stunt their economic growth and threaten the economic, social, and political stability of their country into the future (International Commission on Financing Global Education Opportunity, 2016).

The research results suggest that investments in LMS-based learning can greatly increase the number of students who have access to innovative learning experiences that embrace blended learning, differentiated instructions, and innovative assessment strategies that can foster the skills needed to develop the educated workforces that are needed to ensure that these developing countries benefit from the economic advantages that come with an educated workforce, with the skills necessary to compete in the 21st-century economy. The overall economic benefits can translate into sweeping gains in income and living standards at the individual level (International Commission on Financing Global Education Opportunity, 2016).

A significant consequence of ongoing investments into educational innovation, post-pandemic, is that it could result in a leapfrog moment, where an “innovation has suddenly moved from the margins to the centre of many education systems, and there is an opportunity to identify new strategies, that if sustained, can help young people get an education that prepares them for our changing times” (Winthrop et al., 2018). Researchers, Vegas & Winthrop (2020), at the Brookings Institute, have noted that schools have the opportunity to emerge from the pandemic stronger than ever, by using educational technology, like an LMS, to improve learning by:

- Scaling up quality instruction
- Facilitating differentiated instruction
- Expanding opportunities for student practice; and
- Increasing student engagement

The continued use of an LMS will ensure the continuity of learning and research opportunities aligned with the UNESCO Capacity Building for Education (CapED) program. The inclusion of digital learning resources, including instructional and assessment strategies in alignment with the UNESCO ICT Framework, will help ensure that the students from these regions can compete better with students from all over the world, with more substantial ICT knowledge and exposure. The current pandemic is an unprecedented instance that demonstrated the need, and importance, of online learning platforms. These platforms need to be incorporated and sustained post-pandemic to keep up with the global educational advances.

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