E-Learning as a Panacea for Educational Sustainability in This ED Tech World

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Abstract— During the pandemic era and the post pandemic period of today's educational world we are witnessing a phenomenal growth of online teaching and learning through various online platforms like Blackboard Learn, Zoom, Webex, Google Meet, Microsoft Team to name a just few and it's no wonder that e-learning has created a wave among the educators and the learners alike, but its ripple effects are yet to be realized in full measure. This is a humble attempt at x-raying the challenges and its role in imparting the valued education that we are so accustomed to in our face-to-face classrooms with a lot livelier learning environment and tactile associative advantages. E-learning global adoption and implementation need to be examined through various lenses especially in the backdrop of digitally downtrodden masses and social hesitancy where the onset of the technological advancement is either at its inception or rather impoverished.

I. INTRODUCTION

E-learning which can be just restricted to the online mode of teaching synchronously or asynchronously offering online courses or it could encompass the whole gamut of using numerous new multi media technologies through distant exchanges and collaboration in the real time. Actually E-learning as a concept covers a range of applications learning methods and processes (Russi, 2009).

In its broadest sense Abbad et al (2001) defined e - learning to mean any learning that is enabled electronically which appears to cover only part of what it does given the situation where we have mobilized a whole host of a wide range of gaming learning tools online which work seamlessly across the platforms and devices simultaneously.

According to Maltz et al (2005), the form e-learning may denote different perspectives including distributed learning, online-distance learning, as well as hybrid learning.

According to OECD (2005) it is defined as the use of information and communication technologies in diverse processes of education to support and enhance learning in institutions of higher education, and may fall under the category of the usage of information and communication technology as a complement to traditional classrooms, online learning or mixing the two modes in a so-called hybrid mode.

Wentling et al. (2000) is of the opinion that the term 'e-learning' refers to the attainment and use of knowledge that are predominantly facilitated and distributed by electronic means.

- How to optimize e-learning efficacy:

The focus of this article is to take stock of the situations on the ground in particular, for example this could be a case in point: year 2012/13 (September 2012 to June 2013]) where the full offer of exercises was available on the online platform. The main research questions of this prevailing study are supposed to be concerned with two different subject

areas, the learning process and learning outcome of students. First, the user behaviour at the online platform is of major interest, in order to obtain a general overview of the online platform and to track the behaviour of website visitors. The target should be aimed at examining as to how students engage with and study in the e-learning environment.

In order to do so we will need to take into account the inner and outer perspective on the usage behaviour, the number of visitors, as recorded by Google Analytics as compared with the number of actual exercise results produced on the online platform. The second significant aspect would be to gain an insight into a detailed analysis of the exercise results produced, in order to enable decisions on matters such as efficiency and effectiveness of different exercises.Another interesting aspect in relation to the learning outcome of students is a closer examination of student's learning behaviour by analysing the repetitions of exercise attempts and improvements of exercise results. This is suggestive of the percentage wise performance of one individual task attempts in this case scenario which might vary drastically:


N=159
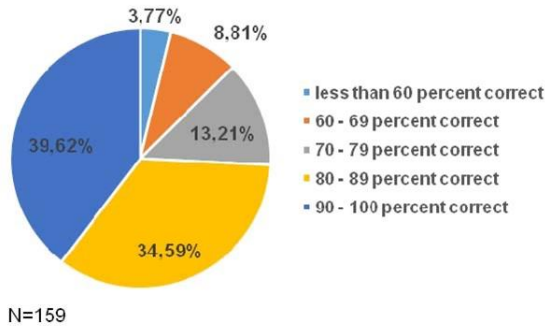
- Learning Analytics: A potent tool

System based records of users activities are automatically captured by e-learning environments, giving information about who accessed what, and when. [Phillips et al. 2011] which could be harnessed to ascertain the effectiveness and the efficacy of schoolbooks and developers of e-learning programmes as much as for teachers. The results can contribute to improvements of the online platform's content creation and usability and to an adaption of the content according to student's needs. According to [Judd and Kennedy 2004], electronic records from technology

based learning environments enable researchers and evaluators to recognize different patterns of usage and they present empirical evidence to prove this by giving explanations about how usage data can be processed and analysed in an effective way. This should look like this:
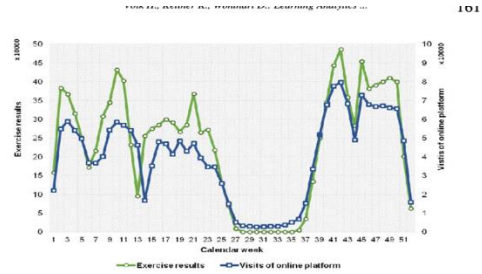
- Data mining techniques:

In order to enable an analysis of usage logs and to draw useful conclusions we can go for data mining techniques which offers unique insights into the learners' patterns of engagements and the disengagements with the system and the online contents whatever forms they may be released for classroom instructional designs, testing and assessments, results and scores including failed, aborted and successful attempts. This graph is indicative of certain trends.
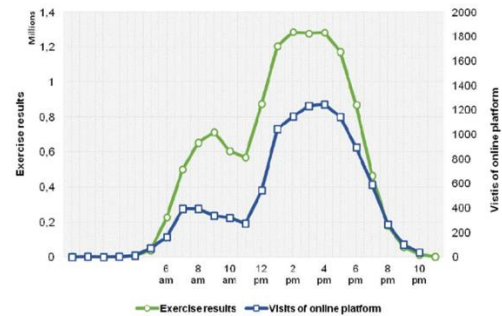
Students' encounter with any online task or activity or assignment in their first attempt and the consecutive successive attempts can offer loads of personal insight into the learning styles, preferences and cognitive load values as reflected in this image:
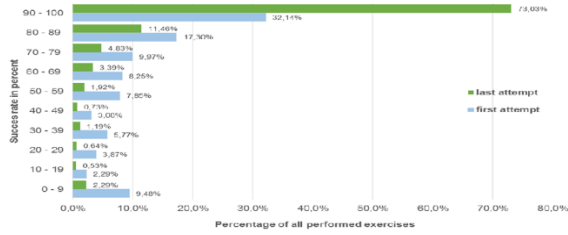
By far earning management systems have been a part of the e-learning ecosystem for more than a decade or so and have been reckoned with many other innovations emerging directly from e-learning that have survived the tests of time.

Relevant learning management systems are expected to grow and expand core services so that "mission critical" may incorporate many of the traditional capabilities learning enterprises have come to rely on. With better objective and subjective meta-data now possible, we can more easily find digital assets so that we can responsibly re-use them later.

This illustration simply gives us an idea of the large-scale adoption of e-learning platforms worldwide for various purposes and with varieties of embedded applications.
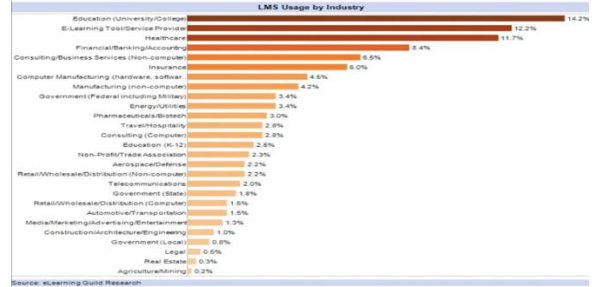
The LMS industry can be said to be at a tipping point of its transformation and ongoing evolution on the technological fronts and the learning fronts as well.

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