

Strategic E-Learning System with Implementation of Multiple Intelligence

D.Geetha¹, Dr. Jeevarathna²,

¹Ph.D Research Scholar, Department of Education, Karpagam Academy of Higher Education, Coimbatore – 641021,
Tamil Nadu, India.

² Associate Professor, Department of Education, Karpagam Academy of Higher Education, Coimbatore-641021,
Tamil Nadu, India

ABSTRACT

E- Learning has changed the way education is implicit in the last decade. Any institution that is opting to provide eLearning content must be able to form a system that would be beneficial to the student as well as the teacher. This paper shows the importance of core pedagogies and how while framing a system for eLearning, Multiple Intelligence can also be incorporated into the framework. Usually there are many LMS frameworks that are developed with the traditional method of teaching as well. This paper tries to help with a system for eLearning and at the same time it tries to include viable Multiple Intelligence ideas into the development of eLearning framework.

Keywords:

E-Learning, Interpersonalknowledge, Learning style, Lesson-plan, Multiple Intelligence, eLearning system

INTRODUCTION

The usage of E-learning has been viewed as a boon in the pandemic situation. It is usually defined as “learning that is enabled or supported by the use of digital tools and content. If typically involves some form of interactivity, which may include online interaction between the learner and their teacher or peers. E-learning opportunities are usually accessed via the internet, though other technologies such as CD-ROM are also used in e-learning” (3). This is the normal understanding of eLearning, but implementing the tools needs a different strategy by itself. First, it should be understood that to implement eLearning in an institution, the institution must be aware of the tertiary, and almost all the institutions will be using an LMS (Learning Management System) of their own. To clearly understand strategic ideas, one must realize that educational intuitions are built on systems. Moore and Kearsley (1996) making an interesting observation in their book, Distance Education: and he says, A widespread misconception among educators who are not familiar with the method approach is that it is possible to benefit from the introduction of technology into education without doing anything to improve the way education is actually structured... According to this opinion, once the equipment is in operation, there is nothing more to be done but to let the teachers get on with their art, as they have always done... You cannot only 'go on your own' and achieve high quality and low prices. (6–7)

But for all the interest in eLearning it is disappointing to see that many of the tools are typically made available to the academic staff, but the tools are not used in the best possible manner. An online course that is offered by an institution must already have a system in place to be highly resourceful. In many situations as there is not a proper strategy, the learning environment will fail, and also as a result of failing there will be a compromise in educational quality.

It should be noted that even educators embrace technology in different ways. Some educators are early adopters, and they most often referenced to as 'embracers. They will automatically make the best use of the LMS application, these adopters might even bypass the institutional process and many policies. This will make the technology be subservient for their course needs. The vast number of number of users like Professors are only a tentative user, and not a full-fledged user. They seem to be mostly satisfied with the status quo. One of the majors concerns that tertiary institutions currently face is how to use eLearning in an appropriate manner. The important word here is 'efficiency' and only with a proper strategy this will be possible. In order to have a proper strategy a coordinating framework is required while creating eLearning.

COORDINATION AND MULTIPLE INTELLIGENCE

Coordination is particularly important while framing an eLearning course. It should be understood that Coordination will result in improved longevity of investment. Institutions usually spend a considerable amount while developing the framework. This means to say that not only embracers, but also base level eLearning managers must be acquainted with the procedure. So, everyone can use the product. It can also be remembered that student experience will be more compatible with the related advantages of less orientation time across new classes, better goals and more confident use of eLearning resources. Finally, "coordinated development will be self-perpetuating, helping to assimilate incoming personnel and improving the capacity of current academic staff to benefit each other.

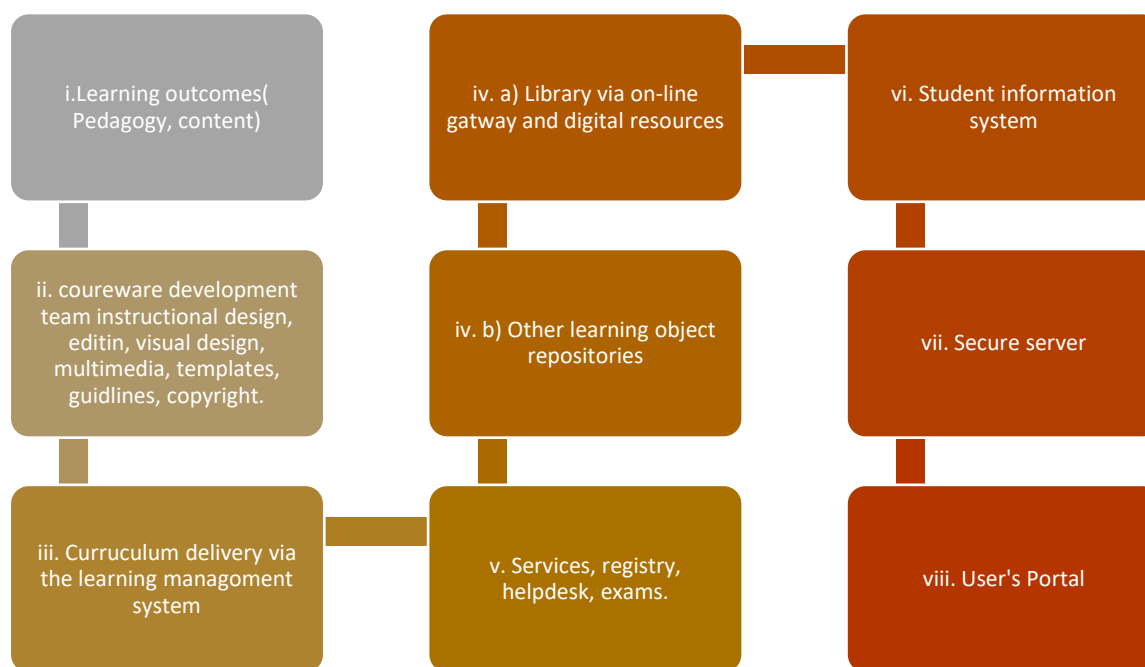
COORDINATING E-LEARNING ACTIVITY

In the context of the eLearning as already mentioned in the introduction, it certainly needs a system. This system will help in successfully implementing eLearning in a classroom setting. The institutions should think on a putting up a system so as to save resource and be efficient in imparting the lessons to the students. If there is no proper system, each and every Professor or teacher will implement eLearning tools as per their interest and their efficiency in handling the tools. This will give different outcomes, and the students will be the ones who suffer in this haphazard method of implementing eLearning.

System thinking in fact demands that eLearning be seen in the overall context. All these are made up of internal systems, and some of them have a potential influence, and other others not so much. The use of eLearning tools like enrolments, IT support, library services, staff development, quality assurance, time tabling and others must be included in the system. Otherwise, it will not be an effective system. A framework was proposed by Davis regarding an eLearning system.

First and foremost, he suggests that there should be a proper statement for Learning Outcomes, and so he suggests a proper pedagogy and content for the students. The second is the courseware developmental team, and they are responsible for instructional design, editing, visual design, multimedia, templates, guidelines, the GUI, and copyrights. The next step is the delivery of the Curriculum via the LMS. The step to implement is to provide the student with a gateway, and digital resources followed by registry, helpdesk, and exams. The LMS without doubt must be hosted in a secure server as student information's are also stored in the same server. This is predominantly for privacy issues. All these are composed into the User's Portal where students can use the eLearning content.

Of course there are more things to be added in this system as developments have come in app design which uses AI(Artificial Intelligence) which automatically understands the needs of the students, and the application provides a tailor made syllabus for the system. But this out of the scope of this paper. The real problem however is the first step in this system. If Multiple theory is to be implemented into this system, then one must certainly incorporate Multiple Intelligence in the pedagogy and content. This will certainly impact in the way students view the course content.



i. Learning Outcomes: (Pedagogy, content)

This is an important step in forming a proper system. In forming the eLearning system, if Multiple intelligence is to be inserted into the platform then this would-be best place to implement the theory. The content should be created for at least the first three intelligences.

- a) Linguistic/ Verbal Intelligence
- b) Logical/Mathematical Intelligence
- c) Spatial/Visual Intelligence

In the case of the verbal-linguistic intelligence it should be noted that text must be the predominate type of content the student interactives with the eLearning tool. Similarly, in the Logical/Mathematical Intelligence, more video illustrations, and the use of Pen tools must be incorporated to get the best benefit. For the visual intelligent students, Animations, digital doodles, pictures, and video content must be incorporated.

All these ideas must be incorporated in the design of the content. Most of the institutions will not worry about Multiple Intelligence. This step of the framework for institutions would simply mean including their old traditional

syllabus with eLearning tools. The pedagogy for online learning is not changed. This leads to failure in implementing a successful online courseware.

ii. Courseware development team instructional design, Editing, visual design, multimedia, templates, Guidelines, copyright

The course idea and implementation of Multiple intelligence is possible in this step of the eLearning process. In this step, the courseware development will be the key to targeting the specific kind of learner, with the specific intelligence. That being said, a single topic must be created in all the three formats. For instance, if it is a class about Number systems. A text-based file must be created, a video explaining should be created, and also quizzes to reinforce all the things that they have learnt must be incorporated.

All this process will come under instructional design. The instructional design cannot be linear, as to implement this with multiple intelligence, the design must vary for each intelligence as to give the maximum benefit. This is a tedious work, but the obvious benefit of developing eLearning content is that, once it is developed it can be used for a prolonged time without the intervention of the instructor.

The process of editing, visual design and multimedia all aid in helping Logical/Mathematical, and also Spatial/ Visual oriented students perform better. Another thing to keep in mind is the look and feel of the content. Studies have shown colourful content is more likely to be used by students than simple black and white text. The final issue while developing the courseware would be copyright issues. As many teachers would like to use content from others while incorporating them into their own classroom, they must be aware of the copyright issues. The developers can use content that is given under creative license. Using any other content without prior permission would be considered infringement of the law. As the framework is developed keeping in mind Multiple intelligence a myriad of content must be used, and it is a tedious task to create all the content from scratch unless and until institutions have the time, and resources to create brand new content.

iii. Curriculum delivery Via the LMS

Some institutions buy a dedicated LMS to manage their curriculum delivery while others use free tools like Google Meet, and Google Classroom as a management system. All the curriculum details including, text PDF's, videos, quizzes, are all saved in Google Classroom. Teachers handle live sessions with student using Google Meet. This is due to the fact that everyone has a Google account, and inviting them is hassle free to join the Google Classroom. Other institutions use customized LMS like Canvas Instructure etc.,. But there will be some limitations for each LMS if Multiple Intelligence is concerned. For example, it would be difficult for teachers to explain Science experiments in an LMS which is wholly driven on texts. Multimedia, live presentation will be required to make the student with Spatial/Visual Intelligence to understand. This is the amount of planning that is required to set up a proper system with Multiple Intelligence embedded into this system.

iv. Library via on-line gateway and digital resources

Every institution will have a library, and in the eLearning platform to a library of books, research papers, and videos are required. But in an eLearning platform there is always scope for integration. There are digital libraries with a huge repository. The institutions can use these while amalgamating their digital resources. For instance, if the curriculum is designed for Science students, an internal repository of National Geographic digital magazine for the

student might be useful. Similar links to YouTube videos about wild animals, or planets might be helpful as far as spatial or visual intelligent students are concerned.

Digital tools and related technological infrastructure are merely a way of creating services that hold their prospective users in mind. Like printed resources used by library staff to generate services in traditional libraries, digital resources are used to generate services using web-based interfaces powered by software. Software systems replace the mentally demanding activities typically performed by trained professionals. Computer programmes perform tasks involving significant mental activities, such as cataloguing and indexing of reference services, seeking information, etc., through a web-based interface.

A variety of conventional and non-traditional library programmes can theoretically support Web-based digital resources. Most of the library services created using digital tools closely resemble those manually produced with upgrades and modifications to meet the requirements of automated services. Digital tools were often used, however, to create creative services that did not have a counterpart in manual speeches.

Using third party library database while designing the eLearning is important to successfully incorporate Multiple Intelligence.

v. Services, Helpdesk, and Exams.

Any system that is connected with eLearning must have a proper service page, a helpdesk and also an exam portal. In any eLearning environment there are bound to be some technical issues. In a properly designed system, services of a LMS must be clearly stated. There ought to be a Helpdesk that is important, and this will help both the technical adapt teachers and also the novice alike. Obviously even students will be in need of help, and a system must have a helpdesk with a FAQ to help the community.

The most important part of any course is evaluation. But online evaluation is tricky and tedious. In the face of Multiple Intelligence parameters, conducting online eLearning exams might be a difficult task due to the obvious problems like cheating. Of course institutions have found a way to address these issues, perhaps not completely but to a certain level they are able to find some solutions.

One simple free way they conduct exams is through Google Meet, and Google Forms. To check on cheating, and malpractice, institutions have creatively used Google Meet. All the students are requested to switch on the camera while they are writing the exams. Teachers are assigned to monitor them, and then the answer scripts are uploaded to Google Classroom for evaluation. However, many institutions use LMS that automatically include some exam conducting system. There are third party application which are exclusively used to conduct exams, however here is another problem when it comes to viewing exams using the lens of Multiple Intelligence.

According to this definition of Multiple Intelligence evaluation it is certainly a difficult process as far as exams are concerned. Students evaluation must be changed in a context that is both enjoyable, and enthusiastic. In an eLearning platform exam must be conducted in such a way that children solve problems and also are also able to do small projects, only then the point of having Multiple Intelligence framework would work.

vi. Student Information System

All the institutions will have the student database. From their assignments, and exam papers are kept in the institution for scrutiny. In the same way, in a digital context, their database is essential to understand their performance. In a proper eLearning system, all the information of the student must be stored safely. They test grades, their assignments, and their attendance must all be registered in a LMS.

In a Multiple Intelligence eLearning platform this data is crucial to understand the behavior of the student. For each student will have different have different level of intelligence, and if the system can understand the data of the student, and create modules and assignments for the students as per the student then this will be useful without doubt. The security is also an important factor as student information can be sensitive, and this data can be misused. But a proper eLearning should be able to securely keep all this data safe.

vii. Secure Server

This idea was already discussed in the previous point, yet there is more to security than only student information. An institution must have a secure sever without doubt. It will have student data, and also all curriculum materials. In case of a security breach, the enter eLearning system built for the students might be affected easily. Huge sums of money might be lost, time and data will also be lost. Malicious malware injections into the server might bring down a complete eLearning platform. Thus, it is imperative that a Secure Server is certainly needed by all means. Like all CMS(content Management System), LMS will also be in attack. The institutions must be aware of this, and while building this system security of the server must be a high priority.

viii. User's Portal

The last one is the user portal. This is what the end user sees, in this case it is the student. The eLearning platform system must be designed in such a way that the student is intuitively able to use it. The user portal must give them key information like their progress mode of study i.e it could be based on their own Multiple intelligence.

The User Portal is also the place in which the student interacts with the teacher. It is the student's virtual classroom.

CONCLUSION

The major consideration that should be made is that while these techniques are adopted then innovation must not stifle, and all the core practices become useful. This should not limit the scope for the eLearning. There are many LMs like Blackboard, WebCT, or Moodle. This certainly encourages that a coordination approach is necessary as far the engagement of students and faculty are concerned with the right opportunity and the necessity.

The eLearning system along with some more components for the changing times can be built using this framework. However, incorporating the Multiple Intelligence to this framework is the challenge. But the future for eLearning along with Multiple Intelligence seems bright thanks to the advent of AI. If fused properly with the framework, then the process can do miracles, and benefit educators opting for eLearning greatly.

REFERENCES

- [1] Gardner, H (1983), *Frames of mind: The theory of multiple intelligences*, Basic Books, New York
- [2] Gardner H., (1999), *Intelligence Reframed: multiple intelligences for the 21st century*, Basic Books, New York,
- [3] Bruning, R. H., Schraw, G. J., Norby, M. N., & Ronning, R. R. (2004). *Cognitive psychology and instruction* (4th Ed.), Upper Saddle River, NJ: Pearson.
- [4] Davis, A. (2004). Developing an infrastructure for online learning. In T. Anderson & F. Elloumi (Eds.), *Theory and practice of online learning*, 97-114, Retrieved October 25, 2005, from, http://cde.athabascau.ca/online_book.
- [5] Jonacki, T., & Liegle, J. O. (2001). Development and evaluation of a framework for creating web-based learning modules: a pedagogical and systems approach. *Journal of Asynchronous Learning Networks*, 5 (1), Retrieved October 28, 2005, from, http://www.sloan-c.org/publications/jaln/v5n1/pdf/v5n1_janicki.pdf.
- [6] Jonassen, D. H., Dyer, D., Peters, K., Robinson, T., Harvey, D., King, M., & Loughner, P. (1997). Cognitive flexibility hypertexts on the web: Engaging learners in meaning making. In B. Khan (Ed.), *Web-based instruction*, Englewood Cliffs, NJ: Educational Technology Publications, 119-133.
- [7] Ministry of Education (2004). *Interim tertiary e-learning framework*, Retrieved October 25, 2005, from, <http://cms.steo.govt.nz/NR/rdonlyres/17D7A181-CD49-4D18-B84EEE0D57149BC5/0/InterimTertiaryeLearningFrameworkweb.pdf>.
- [8] Moore, M., & Kearsley, G. (1996). *Distance education: A systems view*, Belmont, CA: Wadsworth Publishing Company.
- [9] Norris, D. M., Mason, J., Robson, R., Lefrere, P., & Collier, G. (2003). A revolution in knowledge sharing. *Educause Review*, 38 (5), 15-26.
- [10] Palloff, R., & Pratt, K. (2003). *The virtual student*, San Francisco: Jossey-Bass.
- Reigeluth, C. (1999). What is instructional-design theory and how is it changing? In C. Reigeluth (Ed.), *Instructional-design theories and models*, Volume II, Hillsdale, NJ: Lawrence Erlbaum, 5-29.
- [11] Surry, D., & Farquhar, J. (1997). Diffusion theory and instructional technology. *Journal of Instructional Science and Technology* 2 (1), Retrieved October 25, 2005, from, <http://www.usq.edu.au/electpub/ejist/docs/old/vol2no1/article2.htm>.
- [12] Twigg, C. (2001). *Innovations in online learning: Moving beyond no significant difference*, Retrieved October 25, 2005, from, <http://www.thencat.org/Monographs/Mono4.pdf>.
- [13] "Learning and Individual Differences." *Learning and Individual Differences | Journal | ScienceDirect.com* by Elsevier, www.sciencedirect.com/journal/learning-and-individual-differences.