



## Design and Development of 4-Layer E-Learning Model

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### ABSTRACT

*'E-Learning exploits interactive technologies and communication systems to improve the learning experience. It has the potential to transform the way we teach and learn across the board. It can raise standards, and widen participation in lifelong learning. It cannot replace teachers and lecturers, but alongside existing methods it can enhance the quality and reach of their teaching, and reduce the time spent on administration. It can enable every learner to achieve his or her potential, and help to build an educational workforce empowered to change. It makes possible a truly ambitious education system for a future learning society. An effective e-learning model should include strategies to engage learners, facilitate learning and teaching, provide opportunities to evaluate learners' performance, be user-friendly, and benefit the organization using it.*

*The 4-Tier e-learning model brings more flexibility, which can be utilized for instructional design and program management. This model can be used to create successful and functional e-learning programs. Due to the complexity of implementing e-learning, it is essential to develop a well-organized project management plan and be flexible to any changes and improvements needed. The purpose of this paper is to discuss how a 4-layer e-learning model which can effectively be used for a higher education institution and how to manage a successful quality e-learning project. This model may be combined with other e-learning models in some phases to achieve positive outcomes.*

**KEYWORDS : E-learning, 4-Layer E-learning Model.**

### Introduction

e-Learning represents an innovative shift in the field of learning, providing rapid access to specific knowledge and information. It offers online instruction that can be delivered anytime and anywhere through a wide range of electronic learning solutions such as Web-based courseware, online discussion groups, live virtual classes, video and audio streaming, Web chat, online simulations, and virtual mentoring.

e-Learning enables organizations to transcend distance and other organizational gaps by providing a cohesive virtual learning environment. Companies must educate and train vendors, employees, partners, and clients to stay competitive, and eLearning can provide such just-in-time training in a cost-effective way. Developing and deploying effective eLearning programs may require products and services supplied by a variety of vendors, leaving one to connect the dots. One way to start is to define the goals of the desired learning solution.

**E-Learning Model** - There are many different e-learning development models that can be utilized for instructional design and program management. An effective e-learning model should include strategies to engage learners, facilitate learning and teaching, provide opportunities to evaluate learners' performance, be user-friendly, and benefit the organization using it.

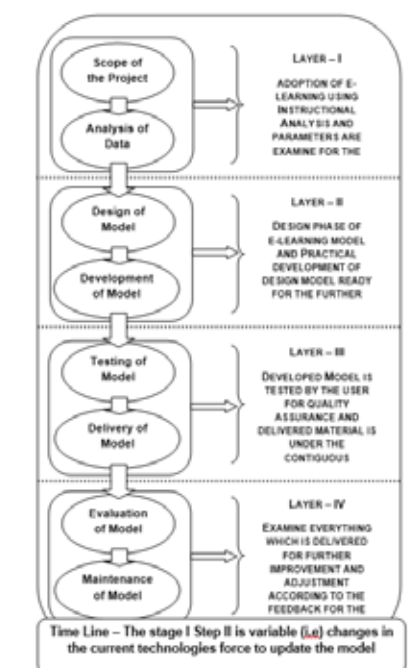
The 4 Layer e-learning models is develop, which will help instructors and developers to create successful and functional e-learning programs. Due to the complexity of implementing e-learning, it is essential to develop a well-organized project management plan and be flexible to any changes and improvements needed.

The purpose of this paper is to discuss how a 4-Layer e-learning model can effectively be used for in an educational institutions and how to manage a successful quality e-learning project. The following model may be combined with other e-learning models in some phases to achieve positive outcomes.

The designed 4 - layered e-learning model is not a fully technological oriented, since the rapid changes in technology is day-by-day. The e-learning model which is useful for every type of educational

institutes and can be successfully implemented only when the use of proper infrastructure and proper utilization of technology. The skilled is also an integrated part of this model as the changed in the technologies need to learn the new technology and other factors of those technologies. The change helps the uses to develop their skills as well as preparing the new teaching aids which benefited the users of the model to reduce their cost and time for learning/studying.

### 5.7.3. Design and Development of 4-Layer E-Learning Model



### Layer – I → Scope and Analysis of Data

The first phase of the 4 Layer e-learning model focuses on the Scope of the project, which includes collection of related data to evaluate whether an organization is ready to adopt e-learning. For instance, this part can be done by surveying and interviewing the e-learning participants. After collection of the data, the teaching team will create a report for those who make decisions to inform them what methods were used, how the data were interpreted related to e-learning in the specific setting, how much the e-learning project would cost, and how it would benefit the organization. The report will also include helpful tips about the next steps. In an education institution, for instance, the instructors who are convinced that e-learning would be beneficial for students and for improving the quality of education offered at their institution, may start with scoping the project as the first step and then move on to the next step.

In the second phase of the 4 Layer e-learning model where analysis is done on the data, (which was collected in first phase) i.e. instructional analysis such as setting, technology, participants, work, teaching appropriateness, content, budget, and cost benefits (profit) are examined. For example, managers and instructors might collectively consider what types of technologies would be available, what other technologies would be needed, and how to deliver the content in an e-learning environment appropriately. In addition, careful thought should be given to costs and benefits of e-learning in the beginning phases. Instructional analysis is an important section of the e-learning planning.

### Layer - II → Design and Development phase

In stage Two (II) the designing of e-learning model (course material etc) is developed. Here, planning the curriculum, selecting the training methodologies, and setting the objectives for the training units are done. Designing an effective e-learning materials, instructional designers should consider pedagogical aspects and learners' cognitive processing as well. The model should be proposed a process-oriented e-learning model which is called "agent-oriented e-learning process model" while considering the pedagogical principals to support learning through electronic media.

The aforementioned model uses software consisting of three cohorts.

- The first cohort connects instructors with students while fostering social interaction in an electronic learning environment, manages the learners' learning process by providing the correct level of activities as learners' progress, and informs instructors about students' performance so that mentors can identify possible misunderstandings and correct them immediately.
- The second cohort keeps track of the students' activities, learning progress, and performance.
- The third cohort evaluates learners' performance and the effectiveness of instruction. Compared to traditional e-learning model, the agent-based e-learning process model is more flexible and harmonious with the educational theories such as constructivism and social learning theories.

The stage II (Two) phase two helps in developing the design model in practical. In this stage, all items such as curriculum, methodologies, and objectives that were planned in the design phase will be developed and reviewed by the internal review and associates for quality assurance. At this stage, the e-learning developers should also examine whether they can use some of the existing materials and whether those materials are still current. Once the instructional materials are developed, trial testing will take place.

### Layer – III – Testing and Delivery

The stage III (three) where trial testing is done in phase one, where users and decision makers review and test the materials that have previously been developed (i.e. in phase two of stage II) in different instructional periods to ensure that everything works well as expected.

The Second phase of stage III is for the delivering of study material which was viewed and tested in third stage phase one for instruction. During this phase, the materials will still be evaluated and possibly improved time to time. Feedback and observation can help to collect information on how to enhance the e-learning instructional materials to support learning.

### Layer – IV – Evaluation and Maintenance

Stage four (IV) phase one focuses on the evaluation of everything which was previously done in stage I and stage II for further improvement and quality of standard. At this phase, e-learning developers examine whether the program is designed appropriately and whether the program objectives and benchmarks are being met. There are many e-learning areas that may be evaluated and enhanced simultaneously. For instance, the technical support for students and instructors, the teaching and learning process, the course structure, and the course related assessment procedures may be evaluated for quality control.

This is the last phase of 4 Layer e-learning model, the stages of e-learning model ends here. The continuing maintenance of an e-learning program helps to keep all of the e-learning associated materials and methods which are currently used. In this phase, the program may need some adjustments according to the users' feedback. All the steps are repeated if there is change in the technology, to upgrade the model and its components associated with it.

### Conclusion

Considering the following criteria to measure the level of performance in high, medium, and low categories for the success of e-learning project:

- Project management skills – obtain adequate information about instructional design, project management software, and training needs analysis methods
- Background information – obtain enough information about the organization and the context before starting with the e-learning project
- Contract precision – the contract with clients should be written carefully while considering daily tasks performed during the project rather than promising fixed project duration
- Review time – allow enough time for continuing review
- Effort versus duration – identify the difference between the number of workdays and the amount of time needed to complete the project including the time needed for the approval process
- Software use – use project management software to create a clear plan for external and internal clients
- Revisions to work plan – after approval of the work plan, any revisions should be done formally
- Word processing skills – use different word program options to create nice status reports
- Report to clients – inform all shareholders regularly about the progress and challenges related to the e-learning project
- Record keeping – keep record of how much time is needed to complete certain tasks to plan correctly next time

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