

## Redesign of E-Learning Development in India

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**Abstract:** Quite simply, e-learning is electronic learning, and typically this means using a computer to deliver part, or all of a course whether it's in a school, part of your mandatory business training or a full distance learning course. In the early days it received a bad press, as many people thought bringing computers into the classroom would remove that human element that some learners need, but as time has progressed technology has developed, and now we embrace smartphones and tablets in the classroom and office, as well as using a wealth of interactive designs that makes distance learning not only engaging for the users, but valuable as a lesson delivery medium. [1]

This is shown from the rank of e-learning readiness of India that is at the position of 58<sup>th</sup> of 70 countries (2010) and 58<sup>th</sup> of 70 countries (2009). The question is what factors hinder the implementation of e-learning in India? What factors should be considered in e-learning development? The following main factors do influence e-learning readiness in which each factor has some readiness components, i.e.: (1) resources; (2) education; and (3) environment. Resources include technology availability (hardware and software) (technological readiness), teachers and students capability (human resources) and funding availability (economic readiness). Educational aspect includes learning content availability (content readiness) and availability of regulation on e-learning and digital pedagogy standardization (educational readiness). Environment aspect includes recognition and appreciation of superior (leadership readiness) and cultural readiness is represented by the fact that e-learning should be part of everyday working activities and organization should give incentives. Empirical and literature studies show that educational and environmental factors represent the main hindrance in developing e-learning in India. Therefore, e-learning development in India should be redesigned, not only by considering resources factors, but also by integrating both factors (educational and environmental) in a convergent way.[2]

**Keywords:-** e-Learning,e-Readiness,Technology

### I. INTRODUCTION

Digital India is a campaign launched by the Government of India to ensure that Government services are made available to citizens electronically by improving online infrastructure and by increasing Internet connectivity or by making the country digitally empowered in the field of technology.

It was launched on 2 July 2015 by Prime Minister Narendra Modi. The initiative includes plans to connect rural areas with high-speed internet networks. Digital India consists of three core components. These include:

- The creation of digital infrastructure
- Delivery of services digitally
- Digital literacy [3]

The Information and Communication Technology (ICT) in schools have been subsumed in the Rashtriya Madhyamik Shiksha Abhiyan (RMSA). Now ICT in Schools is a component of the RMSA. The Information and Communication Technology (ICT) in Schools was launched in December, 2004 and revised in 2010 to provide opportunities to secondary stage students to mainly build their capacity on ICT skills and make them learn through computer aided learning process. The Scheme is a major catalyst to bridge the digital divide amongst students of various socio economic and other geographical barriers. The Scheme provides support to States/UTs to establish computer labs on sustainable basis.[4]

Electronic learning (e-learning) utilizes electronic media for delivery method in learning. Electronic media could be: (1) a broadcast system (Radio & television); (2) teleconference; (3) digital technology (CD) and Internet (Davidson et. al., 2006). Thus, Internet is one delivery method from various methods of electronic delivery. In this paper, ICT refers to computer or computer and the Internet.

Soon after independence in 1947, the Govt. of India had the challenge of bringing uniformity in educational system and providing education to large segments of the population [5].Due to various schemes undertaken by India to improve the literacy rate. These measured have resulted in increase in literacy rate from 65.38% in 2001 to 74.04% in 2011. Learner's satisfaction rates increase with e-learning compared to traditional

learning, along with perceived ease of use and access, navigation, interactivity, and user-friendly interface design [6].

**The Scope of E-Learning Implementation**

E-learning can be examined at two levels. The first one is education and another one is training. For education can be used at both elementary and higher levels. In training it can be used by companies to train and upgrade their employees.e-learning permits the delivery of knowledge and information to learners at an accelerated pace, opening up new vistas of knowledge transfer. In learning, two terms are well known, i.e., not distance learning and distance learning. Both methods relate to synchronization of time and space (Davidson & Rasmussen 2006, p. 10), Figure 1. Distance learning can be carried out at the same time (synchronous) or at different time (asynchronous). E -learning can be used for both methods.

						LOCATION		
						Same	Different	
						Not		
						Distance		
TI ME	Same					Learning		
						Learning		
	Different					Distance		
						Learning		

**Figure 1. Synchronous and Asynchronous Learning**

**Note:** From “Web Based Learning,” by Davidson & Rasmussen (2006)

Asynchronous e-learning, commonly facilitated by media such as e-mail and discussion boards, supports work relations among learners and with teachers, even when participants cannot be online at the same time. It is thus a key component of flexible e-learning. In fact, many people take online courses because of their asynchronous nature, combining education with work, family, and other commitments. Asynchronous e-learning makes it possible for learners to log on to an e-learning environment at any time and download documents or send messages to teachers or peers. Students may spend more time refining their contributions, which are generally considered more thoughtful compared to synchronous communication.[ 7]

Synchronous e-learning, commonly supported by media such as videoconferencing and chat, has the potential to support e-learners in the development of learning communities. Learners and teachers experience synchronous e-learning as more social and avoid frustration by asking and answering questions in real time.

**E-learning and Implementation Obstacles**

E-learning in fact gives benefits in learning as published by many authors, among others including Shiung (2005) stating that e-learning in vocational education gives many benefit, i.e.: (1) increases the mastery of student comprehension; (2) gives equal learning opportunity to every student based on his/her capability; (3) improves learning motivation; (4) support individual learning; (5) creates engaging learning situation; (6) enables students to carry out difficult, expensive, and dangerous experiment if it is carried out in a conventional way; (7) improves creativity and imagination of learners and teachers; and (8) enables learners to comprehend learning materials with minimal guidance.

There are many advantages and benefits obtained, but why there are still many teachers reluctant in using e-learning for their learning? The result of field survey above is supported by the view of Sutjiono (2005) stating that at least there are five reasons why teachers are reluctant to use learning media, i.e.: (1) using e-learning is difficult and need preparation; (2) they do not know how to use; (3) e-learning is an entertainment, whereas studying is serious; (4) they are accustomed to lecturing method (high speech culture); and (5) e-learning users are lack in reward from their superior. The fourth reason is supported by the finding of Wahyono (2006) that low utilization of e-learning is caused by low reading culture and high speaking culture.

The five reasons above can be categorized into some factors, i.e., content preparation (reason 1), cultural and resistant to change (reason 2, 3, 4), reward and leadership (reason 5). Cultural change, reward, and guarantee to develop real e-learning should be supported by regulations related to e-learning, at least at school level. However, to date, it is only in the stage of normative recommendation. Thus, e-learning development is still a choice (freedom to choose or not to choose).Similar to the field finding, Kareal (2006) identify that there are several types of e-learning barriers:

**Personal Barriers** (attitude towards e-learning and learning style or preferences)

**Organizational Barriers** (lack of time for study, interpersonal barriers, and registration system problems...)

**Technological barriers** (course management systems quality and limitations of technical support)

**Content-Suitability Barriers** (content not audience-specific, poor content quality and limited rigor, and poorly constructed assessments)

**Instructional Barriers** (lack of progress reports and feedback, limited learner engagement, poor instructional design, limited reference materials, access and navigation problems, limited use of multimedia, unclear or inconsistent instructions, inability to save work, information overload, lack of instructor presence/interaction.)

Mungania (2003) identifies that there are seven e-learning barriers: (1) Personal barriers; (2) Learning style barriers; (3) Instructional barriers; (4) Organizational barriers; (5) Situational barriers; (6) Content suitability barriers; (7) Technological barriers. Subsequently the Australian Institute for Social Research (2006) identifies e-learning barriers including: (1) attitudes by teaching staff, particularly fear of replacement of people with computers; (2) broader faculty culture; (2) resistance to change; (3) inadequate timeframes provided to develop and implement online courses; (4) individual learners' capacity for independent study; (5) access to library resources; (6) the cost of materials and infrastructure; (7) lack of policy leadership; (8) failure to provide technological assistance and other supports to learners.

### **Strategy for development and E -Learning Readiness**

Some successful learner motivation methods that for many years have helped instructional designers enhance the learning experience. They can be incorporated into development of e-Learning courses. These strategies are as follows:-

#### **Strategy 1: Learn the basics of motivation**

A serious discussion of learner motivation should include at least a cursory look at the ARCS model. Originally published in 1987 by psychologist John Keller (See the References at the end of this article), ARCS is an acronym that identifies four basic elements of motivation:

**Attention** This is essential. If one can't gain and keep the learners' attention, one can have no hope of motivating them, much less teaching them anything. With e-Learning, one must employ tricks like animation, emotional stimuli, and storytelling to maintain learner attention.

**Relevance** There is also little hope of success if the learners don't know why it's important for them to learn the information contained in your e-Learning courses. As with traditional face-to-face learning, it's best to make it clear up front why it's important to know this information.

**Confidence** If learners do not feel they're capable of achieving the learning objectives, their motivation levels will decrease. To help with learner confidence, always indicate up front how long it will take them to complete the session.

**Satisfaction** Learners feel a greater sense of motivation when they anticipate some reward for their efforts. This could be a simple certificate or verbal recognition from a superior, or might include steps along a path to a raise or promotion.

Also, research indicates (Malone and Lepper, 1987) that intrinsic motivation is much more successful at reinforcing desired behavior than extrinsic motivation. Put simply, intrinsic motivation is what makes people do the things that they normally would do on their own, whether or not you coerce them with external motivators.

#### **Strategy 2: Think structure**

A well-structured e-Learning piece is more motivating because it addresses the "C" in the ARCS model: confidence. Your audience will feel more confident about completing the learning session if they can visualize the overall structure of the piece. Put simply, if they can see where you're going, they'll be more motivated to head in that direction.

Also related to learner confidence is the length of the sessions you create. Research (Hartley and Davies, 1978) shows that on average, your learners will only be able to pay close attention to your content for about nine to ten minutes at a time.

#### **Strategy 3: Increase visual interest**

The best way to enhance learner motivation is to make sure the courseware you develop looks appealing to the eye. This can be as simple as a nice HTML treatment based on the principles of good graphic design or as elaborate as a fully scripted video with professional actors and high production value. In the end, the degree of visual interest you add to your production all depends on your budget and schedule, but the good news is: if you

plan carefully, a little bit of visual variety can go a long way toward giving your learners the desire to complete the course.

**The most common ways of adding visual interest to an e-Learning program include the following:**

**Photography** The use of photographs – especially stock photography – is one of the most common ways that e-Learning designers add visual interest to their programs. Unfortunately, it's often not done well; in order for a photograph to have impact, it must directly represent one or more key elements of your content. Just putting a pretty picture in each slide won't do the trick. How many times can we look at the same professionally-dressed, "multi-culti" group of people sitting around a table? That's the problem with stock photography: the good images get used over and over, and people get this sense of *deja-vu* when they view your work ("Didn't I see that woman in a Web banner ad earlier today?"). When done well, however, a quality photograph that actually portrays one of the concepts you're trying to teach can be very effective in enhancing learner motivation.

**Video** If done correctly, a short video clip greatly enhances an e-Learning production. There are a lot of pitfalls in the video approach, however. Video production is expensive, difficult, and time-consuming. Today's audience has very high standards – they tend to expect everything to have the same production value as the Martin Scorsese film they just watched. One approach that doesn't work very well from an instructional perspective is the talking-head approach; simply putting someone onscreen to speak the lines your audience could just as well have read for themselves doesn't enhance learner motivation much. The lesson here is to make sure the visuals support the message of the content. Don't just add video for video's sake.

**Graphics** A nice visual display of quantitative information (Tuft, 1983) can be very effective at increasing the visual interest of your work. It can be as simple as a two-dimensional Excel chart; indeed, the best rule to follow with graphics is, the simpler the better. Even more effective is a simple ideogram, or graphic symbol that represents the idea or concept you're trying to get across in your e-Learning content. Think of stick figures and those international symbols you see in airports, and you're well on your way.

**Animations** Perhaps the best way to increase visual interest while enhancing learner motivation and retention is through the use of simple animations. Jonathan Jarvis's 11-minute animated video about the 2008 financial meltdown ([www.crisisofcredit.com](http://www.crisisofcredit.com)) illustrates how animating a set of simple graphics to voice-over narration can be very effective in conveying complex information in an entertaining way. Jarvis's video quickly went viral, and it's now been viewed over a million times on YouTube and Vimeo. While Jarvis's video undoubtedly took a very long time to complete, and making such animations requires mastery of programs like Adobe After Effects and Adobe Illustrator, the good news is you don't have to go this far to make something that's very appealing to your audience. Start simple; start with a voice-over audio narration, make some basic graphics, add a little motion in your rapid e-Learning tools (even fading picture elements in and out is a good start), and start enhancing the key ideas in the narration with a little visual pizzazz.

**Strategy 4: Incorporate emotion**

Neurologists have grappled with the idea of emotion for many years – what, exactly, is it? And what role does it play in giving humans an edge in survival? The jury is still out on that question, but some neurologists suggest (Medina, 2008) that emotion plays an important role in memory. The theory is this: we tend to experience emotions when we're in a situation that has some kind of bearing on our survival, and this makes the experience worth remembering: fear helps us remember situations that threaten our safety, anger helps us remember situations when others threaten our interests, and love helps us remember the joy we've felt when we've successfully cooperated with family and friends.

Psychologists have a name for an event that triggers an emotion: it's called an emotionally competent stimulus, or ECS. To unleash the power of emotion in your e-Learning content, you simply need to incorporate an ECS now and then – not just any ECS, but one that fits nicely into the subject matter you're teaching. Perhaps the simplest way to do this is to incorporate images that have a mild emotional impact. I say "mild" because, as with many aspects of e-Learning design, it's best to use a light touch. With emotions, a little goes a long way, but a lot can turn your audience against you. Examples of images with mild emotional impact could include a young couple holding hands, a child playing on a swing, or an athlete receiving a trophy.

Emotions don't just play a role in making your content more memorable; they also can help make your content more interesting and engaging. Isn't that at least partly why we sit through films for two hours at a time, or read hundreds of pages of novels in a single sitting? They've successfully appealed to our emotions as well as our intellect. And that brings us to our next strategy for increasing learner motivation: telling a story.

**Strategy 5: Tell a story**

When I tell people that I have a Master's degree in history, they often say something like this: "History? Really? I never liked memorizing all of those names and dates." And I always reply with an explanation of the difference between history and chronology: the latter is just a list of dates and the people and events associated with them, whereas the former is more concerned with the underlying story that weaves all of those dates, events,

and people together. A series of events has no meaning by itself, but the story of how all of those events relate to one another can be very powerful.

One of the reasons why stories can be such powerful tools in motivating your audience is because stories help fulfill the “R” in ARCS: they help people see why something is relevant to their experience by making it more concrete for them.

Here are a few examples of simple ways to bring the power of stories into your e-Learning content:

**Anecdotes** As you write your e-Learning content, think of examples from your own life that could provide an illustration of the concepts you're trying to convey.

**Examples** After discussing some high-level concepts and abstract ideas, bring your audience back down to earth with a story of a real-world situation that incorporates those concepts and abstract ideas.

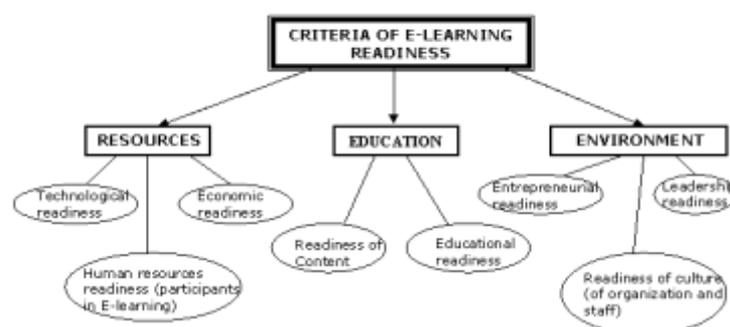
**Narrative structure** If you're ambitious, you might consider framing an entire nine- or ten-minute e-Learning segment as a story. Open with action; establish some characters; move the plot forward toward a climax. Along the way, you can incorporate the necessary knowledge and skills, then quiz learners on these items after the story's conclusion. It might be a little difficult to pull this off successfully, but it can be very powerful if done properly. [8]

(Chapnick, 2000). Chapnick designed a model for measuring the e-learning readiness of an organization. His proposed model groups different factors into eight categories:

- **Psychological readiness.** This factor considers the individual's state of mind as it impacts the outcome of the e-learning initiative. This is considered one of the most important factors and has the highest possibility of sabotaging the implementation process.
- **Sociological readiness.** This factor considers the interpersonal aspects of the environment in which the program will be implemented.
- **Environmental readiness.** This factor considers the large-scale forces operating on the stakeholders both inside and outside the organization.
- **Human resource readiness.** This factor considers the availability and design of the human-support system.
- **Financial readiness.** This factor considers the budget size and allocation process.
- **Technological skill (aptitude) readiness.** This factor considers observable and measurable technical competencies.
- **Equipment readiness.** This factor considers the question of the proper equipment possession.

Views similar to Chapnick's are those published by Economist Intelligence Unit (2003), Rosenberg (2000), Broadbent (2002), Workknowledge (2004), and Borotis and Poulmenakou (2004). The six views, by Psycharis (2005), are categorized into three major categories that constitute the components of every organization (Figure 2).

- **Resources:** it includes the technological readiness, which investigates the access to the Internet or/and the intranet provided, the available technological systems and the way they are used as far as e-learning is concerned, the economic readiness, which examines the willingness of the organization to invest in e-learning and the readiness of the human resources, examining the knowledge and the skills possessed by the ones involved in e-learning.
- **Education:** it includes the readiness of content, which examines the availability of the educational content, its form, its characteristics, the degree of its reuse and its adequacy for the enhancement of personalized teaching; it also includes the educational readiness, which examines the ability of an organization to organize, analyze, design, implement and evaluate an educational program.
- **Environment:** it includes the entrepreneurial readiness, which examines the structure and the practices of the organization that affect e-learning, the readiness of culture, which examines the organization's as well as the staff's behavior and attitudes in relation to e-learning, and the leadership's readiness which examines the support provided by the administration.
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**Figure 2.** Criteria of e-learning readiness. [9]

From Figure 2, it is clear that e-learning readiness is influenced by three key factors, i.e., resources, education, and environment. Thus, Chapnic's view is very reasonable if one of strategies in developing e-learning should consider e-learning readiness score, because e-learning readiness measures the readiness of every aspect in an organization. Disregarding one of these key factors will decrease the score of e-learning readiness as marked by low level of e-learning utilization at school.

## II. CONCLUSION

E-learning is not merely a summing factor in learning process, but it is an enabler of learning paradigm transformation process to increase effectiveness and efficiency of learning process. E-learning development in India has not considered existing barriers and e-learning readiness. Barriers in using e-learning in India are not only caused by resources, but also by the obstacle in that there has not been any attention on educational readiness, i.e., unavailability of regulation on e-learning, school culture, and unsupportive leadership.

E-learning development in India should give more attention to two very influential key factors. The first, education factor, should pay attention on educational readiness, i.e., ability of an organization to organize, analyze, design, implement and evaluate an educational program. The second is environment factor, including entrepreneurial, culture, and leadership readiness. Paying attention to and developing resources, education, and environment factors in a convergent way are imperatives in e-learning development in India.

The readiness for the engagement in e-learning is an issue which all organizations wishing to adopt and use e-learning innovation should focus on, so that they are able to accomplish the desirable results, reducing at the same time the risk of failure. Investigating the organization's readiness as far as e-learning is concerned, addresses both the organizations that wish to include it in their educational methods, and the ones that have already implemented e-learning and are either willing to expand its use or are in search of the reasons that have resulted in less effective applications.

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