TOWARDS QUALITY ASSURANCE IN INDIAN E-LEARNING

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ABSTRACT:

The purpose of this paper is to suggest measures for Quality Assurance in e-Learning in the Indian Context, based on experts' knowledge through Delphi Research and available literature. Quality assurance is an iterative process which has to be embedded within the e- learning system. The growth rate of self-paced eLearning in India is 55%, which is higher than China (52%) and Malaysia (41%). Most of the Indian Higher Education Institutions have embarked on the Digital Initiatives, in line with the policies and priorities of the MHRD. But unfortunately, the quality assurance mechanism in E-Learning has been given far less consideration. This paper focuses on contributing with means to address this grey area of concern and provides insights into improving the various aspects of e-Learning. The paper also proposes an e-maturity model and suggests measures for ensuring quality in e-learning development and delivery, the development and application of Small Private Online Courses (SPOC), which refer to the local version of a MOOC (Massive Open Online Course) and effective integration of social networking sites and web 2.0 technologies such as blogs, wikis and podcasts.

Keywords: Quality Assurance, E-learning.

"I Dream of a Digital India where Access to Information knows no Barrier"
Honourable Prime Minister of India at Silicon Valley, 2015

BACKDROP AND STATEMENT OF THE PROBLEM

The Global Education in general and Indian Education in particular is awash with statistics on the impact of the web on 21st century learning. Teachers today are challenged to face a new student generation (born between 1990-2000), called Net Generation who learns and communicates differently, relying on Internet as a feature of everyday life and who are always connected as 'digital natives' (Jones and Fox, 2009 The Pew Report). As society is shaped by the rapid diffusion of sophisticated digital devices, applications and trends like Web 2.0 Technologies and Social Media, a changing social order and culture are emerging. The Status is not one is awake or asleep, but whether one is offline or online. Facebook, Twitter, Instagram are the new neighbours of the new world. Our 21st century learners have digital limbs. We cannot amputate them at the front door of learning. The National Mission of Digital India is based on the lofty objective that Quality education should reach the most inaccessible corners driven by digital learning. In order to ensure Quality in Higher Education, Indian Universities and Colleges have embarked on the Digital Initiatives, in line with the policies and

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priorities of the MHRD. Digital India campaign launched by the Government of India in 2015 has taken initiatives for the introduction of Information Technology to empower people in areas relating to education, labour and employment. In July 2017, the Government of India launched four major digital initiatives in higher education namely Swayam - an indigenously designed massive open online course (MOOC), Swayam Prabha - 32 Direct-to-Home channels for transmitting high-quality educational content, the National Digital Library containing 6.5 million books and the National Academic Depository for authenticating all certificates issued by institutions. Considerable resources are invested in these efforts. While some institutions have achieved considerable success, others have struggled to realise marginal adoption rates or attain limited educational value. The research indicates that the reasons for these limited successes are many and varied and reflect the complex nature of the problem. The creation, utilisation and support of e-learning have been a complex multi disciplinary activity, further increasing the tensions between technical, organisational and pedagogical considerations. Jones and Fox (2009) in 'The Pew Report' characterizes the new generation of learners as digital natives. As a digital native, students expect the learning environment to be highly digital to satisfy their needs. This expectation is extended to the teachers as well. Not only have the societal changes warranted the teachers to use ICT but also the nature of the student in this digital society that demands for it. The teachers turn to be digital immigrants and update themselves with the changing technologies to narrow down this gap. The increasing uses of social media and Web 2.0 tools as well as different strategies like sharing, tagging, rating, commenting in e-learning systems usher in new opportunities for communication, collaboration and active participation in the e-learning process. The growth rate of self-paced eLearning in India is 55%, which is higher than China (52%) and Malaysia (41%). Most of the Indian Higher Education Institutions have embarked on the Digital Initiatives, in line with the policies and priorities of the MHRD. But unfortunately, the quality assurance mechanism has been given far less consideration. E-learning in the Indian Higher Education Area has stampeded its way to the foreground and it is a key and emerging issue among quality assurance agencies and institutions in the Indian Higher Education.

RATIONALE OF THE STUDY

The research done by Zhihua and Zhaojun (2009) suggests that institutions that ensure Quality in E-Learning improved their performance levels significantly and more quickly than those that are not. Similarly, Marshall and Mitchell (2006) conclude that the results of the application of the e-learning quality model have been found valuable for strategic planning activities in universities. All these evidences suggest that Universities need research evidence and support to make decisions about ICT and E-learning investments. An Extensive review of research reveals a research gap in the vital and critical area of Quality Assurance in E-Learning and the present research has been undertaken to fill the research gap. Since e-learning is currently such a relevant and hot topic, there is a dire need for Research Efforts on Quality Assurance in E-Learning. Quality assurance is an iterative process which has to be embedded within the e-learning system. The purpose of this paper is to propose an e-maturity model for ensuring quality in e-learning development and delivery and also to suggest measures for Quality Assurance in e-learning in the Indian Context, based on Experts 'knowledge through Delphi Research and available literature.

OBJECTIVES AND RESEARCH QUESTIONS

The objectives of the study are:
- To probe into the Quality Issues of Indian e-learning through the insights and perceptions of Experts.
- To suggest quality enhancement measures and models through the insights and perceptions of Experts in the areas in e-Learning.

Based on the problem definition stated above and the fact that e-learning is still a relatively new field of research, the study purports to answer the following research question:

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1) To what extent can the Quality Issues of Indian e-Learning be addressed, based on available literature and Expert Knowledge?

OPERATIONAL DEFINITIONS OF TERMS
E-learning:
The definition of e-learning and its characteristics may differ from country to country. For the purpose of this study, e-learning is defined as ICT facilitated learning which compasses every form of it including Online Courses and programmes (both synchronous and asynchronous), blended learning, MOOCs and OERs. E-learning components present opportunities for students to use personalised and flexible (in time and place) paths exploiting online information sources as well as video and audio channels, while ensuring the achievement of learning outcomes.

Quality Assurance:
The definitional challenge associated with the concept of quality stems from the juxtaposition of internal and external university stakeholders' interests, expectations and requirements which contribute to the conceptual and operational imprecision which surrounds any attempt to define quality.

Quality can be perceived as added value, fitness for purpose, customer satisfaction, or positive transformation.

Quality Assurance is defined as that part of quality management focused on providing the confidence that quality requirements are being fulfilled. For the purpose of the present study, Quality Assurance is defined as the systematic management and assessment procedures used to ensure achievement of quality outputs.

METHODOLOGY
The present study is heuristic in nature. No pre-conceived hypotheses were made for this exploratory investigation, which was hypothesis-generating and not hypothesis-testing. Hence, the present study has applied a Mixed-Method of Research, which is a judicious combination of Literature Studies, Interviews and Expert Sessions through the Delphi method, a structured, systematic and interactive communication method. This Mixed-Method of Research offers a robust way for the researchers to achieve the research objectives. The Delphi technique is a widely used and accepted method for achieving convergence of opinion concerning real-world knowledge solicited from experts within certain topic areas. Predicated on the rationale that two heads are better than one, or... n heads are better than one, the Delphi technique is designed as a group communication process that aims at conducting detailed examinations and discussions of a specific issue for the purpose of goal setting, policy investigation, or predicting the occurrence of future events (Ulschak, 1983). Common surveys try to identify "what is," whereas the Delphi technique attempts to address "what could/should be" (Miller, 2006). In the literature, Delphi has been applied in various fields such as program planning, needs assessment, policy determination, and resource utilization. The Delphi technique can be used for achieving the following objectives: 1) To determine or develop a range of possible program alternatives; 2) To explore or expose underlying assumptions or information leading to different judgments; 3) To seek out information which may generate a consensus on the part of the respondent group; 4) To correlate informed judgments on a topic spanning a wide range of disciplines, and; 5) To educate the respondent group as to the diverse and interrelated aspects of the topic. The Delphi technique is well suited for the purpose of the present study as a means and method for consensus-building from a panel of selected experts.

The first step of the research is to conduct the literature study. The literature study is conducted by means of the structured literature approach technique (Watson, 2006). Watson describes a three-step approach in order to cover as much literature as possible with regard to a certain field of interest. The first step is to identify a list of literature, based on a certain amount of keywords, in an online

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database. The articles found are reviewed based on their relevance and a list is made of relevant articles to continue in the process.

The next stage of Research namely Delphi Method is intended to validate the findings in the literature and also to expand the models and measures of Quality Assurance in e-learning with practical expert knowledge. These Expert interviews for Delphi Study were held at the Central University of Tamilnadu. The Experts included a cluster sample of 40 University Faculty Members representing different states and regions of India with expertise in e-Teaching Methodology. A field note of interviews, responses and document reviews ensured the critical component of credibility through triangulation. Content analysis of the responses was done. Generalizations were made, based on a consensus of ideas expressed by a majority of the respondents. The grounded theory generated from the theoretical discussions in this Qualitative Research resulted in scenarios of the grey areas of Quality Assurance in e-Learning in which reforms are needed.

A feedback report including a comprehensive list of responses was constructed, with similar responses combined and listed only once. The report also included a summarization of the most frequent items from the original response set. In Phase 2, participants were given a survey containing the aggregate list of responses from Phase 1 and the summary of the most frequent items. They were asked to perform three tasks: (a) rate each of the items in importance (b) select the most important items from the list, and (c) provide a brief explanation for choosing each of the top.

RESULTS, DISCUSSION AND GROUNDED THEORY GENERATED

Domain analysis was used as the qualitative method to determine the themes and categories from the Delphi query. Responses were grouped into categories and then the categories were grouped into themes. Frequencies were calculated for items, categories, and themes based on the number of separate responses they represented. Items were ranked based on their frequencies. The item frequency was calculated on the number of responses the aggregated items represented. The grounded theory generated from the theoretical discussions in this Qualitative Research is presented in the following sections:

Need for SWOC Analysis

The degree of Quality that an Institution has in implementing e-Learning will depend, in part, on the quality and maturity of its e-Learning plan. Therefore, the institution needs to periodically check its status towards technology integration and use the assessment results to plan its e-Learning programme, e.g., SWOC Analysis as well as components such as skill development, technical support and infrastructure.

Need for Staff Development Plan in E-learning

Many institutions introduce e-learning without a proper staff development plan and without a pedagogical perspective, which leads to low-return investment and compromise on Quality standards.

Need for e-Maturity Model

The review of previous research suggests that the institutions that are more e-mature improved their quality of output considerably than those that are not. The application of emerging technologies in Institutional Management is found to be a key factor to upgrade administrative processes. Similarly, Marshall and Mitchell (2006) found that the application of the e-learning maturity model has been valuable for strategic planning activities in universities.

The development of e-maturity models has been a strong trend in various organisations abroad. These models are useful because they enable the Institutions to self-examine the maturity of various aspects of their processes against benchmarks. The best-known models are those belonging to the Capability Maturity Model Integration family developed by Humphrey at Carnegie Mellon University. These models are typically constructed with five levels, where each maturity level provides a new foundation of practices on which subsequent levels are built. All these proposals were developed as an

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E-learning Maturity Model to provide a means by which tertiary institutions can assess and compare their capability to develop, deploy and support e-learning (focused on learners rather than teachers and institutions).

A maturity model framework is suggested which includes six components:
1. Technology
2. Curriculum
3. Leadership/Management
4. Workforce
5. Inter/intra-institutional linkage
6. External linkage

       Each component consists of a number of dimensions and each of the dimensions may be treated on a six-point Likert scale with positive scoring; an Institution that fulfils all the attributes within a given level of a dimension is assigned an appropriate score. It is suggested that this proposed model could be used as an action guideline for the institutions, one that would prevent deviation from the scheduled targets. Given the desire to embed technology within the learning environment, the Universities face a notable challenge in balancing the use of technology with the demands and abilities of learners at different ends of the E-Maturity spectrum. The e-Maturity Model will allow the institution to diagnose the situation and from there generates a roadmap that guarantees a virtuous cycle of continuous quality improvement. The roadmap helps to optimise the technology investments and enables the institution to reach higher levels of maturity.

Need For E-Learning Readiness Assessment

       E-learning readiness is the mental or physical preparedness of an organization for some e-learning experience or action. E-learning readiness assessment is needed for an organization to plan e-learning techniques comprehensively and to apply its e-Learning goals effectively. Learners must also be "e-ready" so that a coherent achievable strategy, tailored to meet their needs, may be implemented. The parameters to be addressed when evaluating the e-readiness for an institution include infrastructural availability, access to infrastructure, manpower availability, policy and regulatory framework and the Digital Culture of the Organization.

Need for e-Learning Standards

       Institutions should have a policy for quality assurance in e-learning that is made public and forms part of their strategic management. Internal stakeholders should develop and implement this policy through appropriate structures and processes, while involving external stakeholders.

Need to create 24/7 e-Learning Experience

       Though Considerable resources are invested in the Digital Learning efforts, it is difficult to meet the expectations of the n-Gen with the existing electronic learning supports. All the best efforts fall short of satisfying the n-Gen needs. While few institutions have achieved considerable success, others have struggled to realise marginal adoption rates or attain limited educational value. The research indicates that the reasons for these limited successes are many and varied and reflect the complex nature of the problem. The creation, utilisation and support of e-learning have been a complex multi disciplinary activity, further increasing the tensions between technical, organisational and pedagogical considerations. As a digital native, students expect the learning environment to be highly digital to satisfy their needs. This expectation is extended to the teachers as well. Not only have the societal changes warranted the teachers to use ICT but also the nature of the student in this digital society that demands for it. The teachers turn to be digital immigrants and update themselves with the changing technologies to narrow down this gap. The increasing uses of social media and Web 2.0 tools as well as different strategies like sharing, tagging, rating, commenting in e-learning systems usher in new opportunities for communication, collaboration and active participation in the e-learning process. Web

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2.0 technologies such as blogs, wikis and podcasts are found to be powerful tools for the majority of students to develop their critical thinking and research abilities. The most important factors that affect students using social networking sites for E-learning are security and privacy. Similarly, inside the Campus, the factors affecting students' use of social networking sites in e-learning are networking speed and networking access. Advancing learning with technology in the campus is the need of the hour, which will enhance overall student experience through the creation of the 24/7 e-learning experience and maintain classrooms at highest level of technology.

Need for reaching the Students through DTH

Since it is difficult to synchronize the e-learning deliveries with the teaching taking place through conventional methods all over the country, it is suggested that students should be reached at their Homes through DTH, besides reaching them at Institutions through IP N/w.

Need for Establishing Global Classrooms

Virtual courses can be developed with international partner institutions. Presently, only the basic digital technology is provided as e-learning facilities in most of the Universities and Colleges. It is recommended to practice the systematized aspects like LMS/CMS to ensure optimum and successful e-learning.

Need for Small Private Online Course (SPOC) along with Massive Open Online Course (MOOC)

MOOCs represent a global low cost flexible and sustainable model to massify higher learning. However, the trends in enrolment and completion rates indicates that a majority of those enrolled are enthusiastic in enrolling but fail to maintain the same enthusiasm in completing the studies. MOOCs need regular access to reliable broadband internet connectivity, which is not always available at affordable prices, especially in rural India. The dominant language of communication in MOOCs is English. Many students in rural India are not in a position to cope with the language proficiency expected to pursue the course.

Hence, alternatively, the Small Private Online Course (SPOC), a version of a MOOC (Massive Open Online Course) may be experimented and used locally within-the campus students. University of California Berkeley Professor Armando Fox coined the word in 2013 to refer to a localized instance of a MOOC course that was in use in a business-to- business context. The SPOC should integrate blended learning and flipped classroom learning along with online resources and technology. As Early research results point to improved learning and student outcomes using such approaches, Colleges and universities can create SPOCs, or license them. In the latter instance, a SPOC might give the instructor an opportunity to deliver the material directly to students using video delivered by another expert. Harvard University offers SPOCs for its curriculum. Unlike MOOCs, SPOCs have limited enrolment and are often used as part of a course for credit
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Need for Blended Courses and Webagogical Skills

Blended Courses have higher potentials and may become more wide spread. Blended e-Learning provides access to a wide choice of alternative resources drawn from international as well as institutional digital repositories, with Seamless integration of Physical and Virtual Learning Spaces that integrate and accommodate technology with a focus on student learning. When courses are a blend of face-to-face learning and e-learning, the student support services including counselling, communication etc. will resolve many problems. The Final need emerged out of this study is that the E-Learning Quality Improvement Measures have a significant implication for the Teachers of Higher Education, who have to trained in the Webagogical Skills as well as On-Line Tutoring Skills for the Brick Institutions, Click Institutions and Brick and Click Institutions.

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CONCLUDING REMARKS

The maturity model emerged out of this Delphi Study, can be expanded further by applying in different institutions to test the content of the model even further. The construction of a maturity model is an iterative process that could potentially take even years. Further research can be done in looking at the maturity within different capabilities. The Ten Needs, which emerged from this Delphi Study, can be taken like Ten Commendments for ensuring Quality Assurance in Indian e-Learning. When implemented, it will go a long way to enhance Professionalism in all aspects of e-Learning for the achievement of excellence in e-Learning environment of the 21st century. With the fast development of web 2.0 technologies, further research is suggested to identify the best ways of the use of web 2.0 technologies to improve quality in e-learning.

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