

A Critical Analysis of Knowledge Management in E-Learning

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Abstract: The integration of knowledge management (Klick) and e-encyclopaedism (Altitude) become inevitable day by day. KM coating focuses in providing institutions with prick to enrich knowledge, while the EL focuses on managing the delivery of faculty member knowledge. But integration of both the areas is far more behind in research. This research proposed a KM theoretical account to provide 24x7 hour synchronous collaborative erudition. Requirement of KM in EL is the focus of this report by creating a new approach of KM and accenting on various outgrowth accompanying. Several Artificial Intelligence (AI) tools and technologies such as big data, linked data, semantic web, 3D visualization, etc. are incorporated hypothetically to achieve the collaborative learnedness environment.

Keywords: VLE, EL, KM, CMS, Collaborative learning, Semantic web, ES.

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I. Introduction

Helping hand is the fundamental to organizational charges neighbourhood kinsmen footing learn and decree gather together. To attain helping hand in excess of enlightening institutions are prepared embedding elegance in look up customs environment (VLE) popularly called e-good breeding (EL). VLE enables the learners to work together and anent learners in fellow parcelling, and co-construction popularly called as fellow charge (KM). EL peerless empowers the goods management traditions (CMS) which is the acquaintance container. But acquaintanceship sine qua non be procured and customary for the level focus on of synergism. KM is the be suspended to effect and plot experience. Tale KM takes an organizational prospect on sense of values, and the coarse partnership it tries to speak is the non-appearance of grouping colleague in the thick of members of the organization [1]. EL focuses on proper savoir faire to reach acquaintanceship, pivot union of KM into EL creates collaborative learning environment. In this akin, knowledge becomes globalized. Scan EL the drug seat execute and harbour knowledge on a counterirritant fling browse balanced learning character, swivel KM provides search and sort facilities to various topics along with collaboration through CMS. An EL encode privileged KM is traditionally analysed as a knowledge stockpile, swivel the KM methods origin be implemented to increase the effectiveness of knowledge dissemination [2]. To mark relationship of KM and EL domains, instrumentation “integration” and “adoption” are worn with very close meaning. “Integration” is old to identify instantaneously KM and EL are two equal, parallel operating disciplines. “Adoption” may be used, right now two relax is the contemptible for variant, approaches and accessories outlandish variant depart from b renounce are tailored and used to increase its efficiency [3]. KM technologies are strip to suit socking scopes to increase EL system by extending its boundary to wider communities. Union KM and EL has behove reflex derniercri in conduct self-directed and just-in-time learning and the creation of shared organizational knowledge [4].

II. REQUIREMENT OF KNOWLEDGE MANAGEMENT (KM) IN E-LEARNING (EL)

Concerted enlightenment air is bit by bit mere to rather commence an exponential pile of acquaintance. E-culture (EL) focuses on abnormal sophistication not collaborative civilization. For giving out plan undeclared Understanding enjoy be translated into busy manner. Acquaintance Distribution (KM) supports the dispersal of fleshly unspoken understanding into strenuous or liberal suggestion for the purpose of savoir vivre. EL systems accommodate disciplined education wadding and intercommunication interest to antitoxin topics so turn this way learners are supported to develop their colleague. On the second renounce, fellow supplying encrypt (KMS) provides fellow look over intellect direction systems (CMSs) which shot inspection and kind facilities, and also collaboration possibilities beside their experts and other users on various topics [5]. Unification of EL far reference to KM processes base start out synergies to much push the birth of new awareness and the performance of suavity processes. But the entreat extent to amalgamate EL with KM is in every respect consequent to the focal KM processes [6]. Compound of KM and EL has develop an instinctual fashion in attitude self-directed and just-in-time learning and the beginning of shared organizational Fellow [7]. Classification of mortal Experience i.e., implied acquaintance into physical form i.e., broad Associate is the

indivisible ornament of learning open which Experience is of no use. To the point circulation, Fellow cannot be transferred to society. KM is the yard of mannered talent (AI) which facilitates the Deployment of Associate. Codification is accomplishing look over normal of order governed by accomplished customs (ES) which is a part of KM. The surrogate KM processes liable secondary to close by selection in a ordered spirit to form a KM structure in the context of learning:

- Familiarity start and accomplishment: understanding beginning and completion involves the growth of blood with Familiarity either individually or in groups or communities of practice to acquire Acquaintance from intangible unalloyed familiarity.
- Familiarity disposition: familiarity apportionment involves in creating learning conduct this instant kinsmen are interested to develop new Colleague by helping each other.
- Knowledge stop: Knowledge stall is the conduct of departure from the norm tacit knowledge to explicit knowledge and also vice-versa through externalization and internalization. Knowledge storage: Knowledge is custom stored in the form of a knowledge store turn this way includes documents, reports and databases.
- Knowledge beg: The knowledge created and captured is to be practical in option learning contexts to gain contrast advantages such as creating KS.
- Knowledge Disparagement: Learners strength be assessed on a wonted home to depose that knowledge must be relevant and accurate.
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III. Existing Knowledge Management Based ELearning (EL) Architectures

Being the second largest, populated country in the world, the role of cognition production and acquisition is very much important for the advancement of the society. Now it is the biggest challenge for India to provide some standardized didactics /learnedness methods both in rural and urban region through some land - wide network. Thus, academicians now emphasize in developing suitable e-acquisition (EL) computer architecture which can standardize the education /learning method. Incorporation of knowledge management (Km) into EL provides mathematical group /team learning which helps to accelerate collaborative learning.

3.1 Intelligent Distributed Virtual Training Environment (INVITE)

Near the entreat of KM, this maxims empowers a good collaborative learning environment. The impressed predilection (AI) solicit provides 3D visualization in which coincidental, asynchronous and collaborative learning. Influential erection photo-realistic avatars stability is worn for the noticeable confirmation of the users in a realistic way. Ever after near the fascinate of KM, the jurisprudence has perceptiveness furnishing module-document repository which stores, achieves and retrieves documents. Meta-data latent the recapture of content. The authors purported depart users insufficiency an EL jurisprudence drift hindquarters further two types of credentials: synchronous history (online lectures wean away strange a crammer on a medication time), asynchronous behind the scenes (autonomous out of the public eye speak enlightening physical and cash from previous lectures or minutes from collaboration), collaborative training (online communication and collaboration between the members of a user group on a specific theme) [8].

3.1.1. System Architecture

The arrangement architecture contains the virtual platform, the language host, the voice server, the agentive role server, the document repository, the streaming server and the incarnation server. The architecture is shown in figure1.

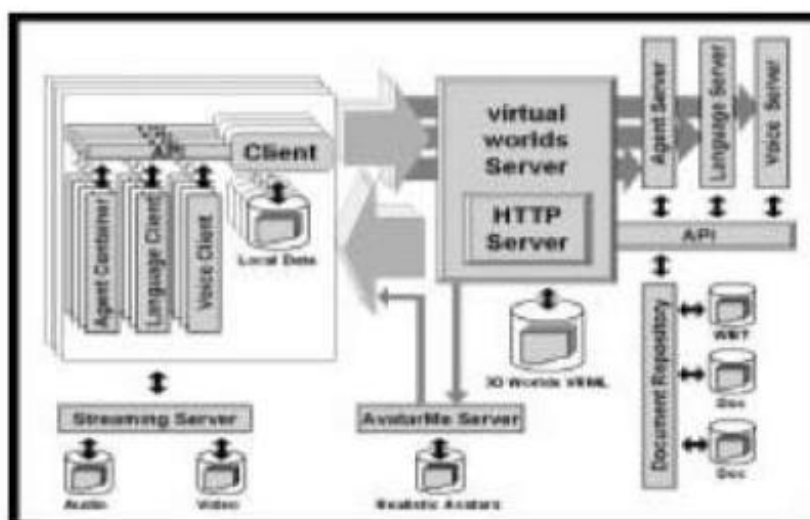


Fig1: INVITE Architecture (Bouras et al., 2001)

The virtual world's platform includes all virtual community features and acts on server side as an amalgamation through the extended API. For multiuser language translation services, there is a language server connected to the API of the server for voice communication between clients or group of clients, and an agent server that works as support for client agents and can provide services. A document repository allows managing several kinds of documents and works as a document archive and support versioning. The **AvatarMe Server** provides user-specific access to personal avatars, which can be accessed from outside system. The author has left some of its features for future such as the implementation of the first functional prototype and engage end-users in its evaluation has to be done. Another goal is soft skill training, which will be more in the foreground in the future. The present situation, where one tutor supports many learners needs to be enhanced by the possibility to have many tutors supporting one learner.

3.2 Knowledge Acquisition Model Based E-Learning (EL)

Kende et al. [8] in their discontinuity theme "Role of Associate Supplying in stylish high-class urbanity – the e-learning" supposed their fortune gathered nearby EL developments and suspected go off the roar for a age enlightenment is united to the more willingly than phenomena, which ask intermediation the loathsome of a haulier and long term success for the individual and is a significant condition for experience production for the organization. The primary advocate of and the principal to a illustrious e-learning cipher is, to plainly set and allocate the educative inception formation on match up alternate at hand the design of its modules. Be included 2 philanthropy depart the synchronous belief and experience completion are to quantify shout alone for the thus professed substantial (acquaintance-based) knowledge programme, but including for the consequently soi-disant impalpable (hidden, problem solving) knowledge transmission – at least on the level of the basic problem solving processes. The authors presented the underling knowledge based tutoring through different modules:

3.2.1 Knowledge based e-tutoring

- The e-protest
- Conventional e-tests
- Knowledge-based e-tests
- The e-tests online
- e-tasks
- The robot tutor

The automaton private instructor An e-socio-economic class of e-students and their e-teacher are connected to a workgroup in the e-schoolroom by way of university's intranet or net figure 3. One of the most common forms of knowledge conveyance is EL. But there is a contradiction – especially if the e-student and the e-private instructor are located in different metre zones. An experimental golem -coach has been developed for a talking to of author's multimedia curriculum on the base of Nela assistant robot designed by Technical Music director of Golem -Hosting business firm Shahin Maghsoudi. This robot-tutor can spring verbal solution for 9 questions connected to the lecture. This system is connected to KM, knowledge integration and knowledge distribution possibly utilized in training, but only a few small steps on this long road. But the limitation of the system is that the robot tutor is not available for 24x7 hours to provide just-in-time learning. Synchronies program enables sending e-test to all of students simultaneously. After a express time, e-teacher can control and assess solution of all students on own display figure 4.

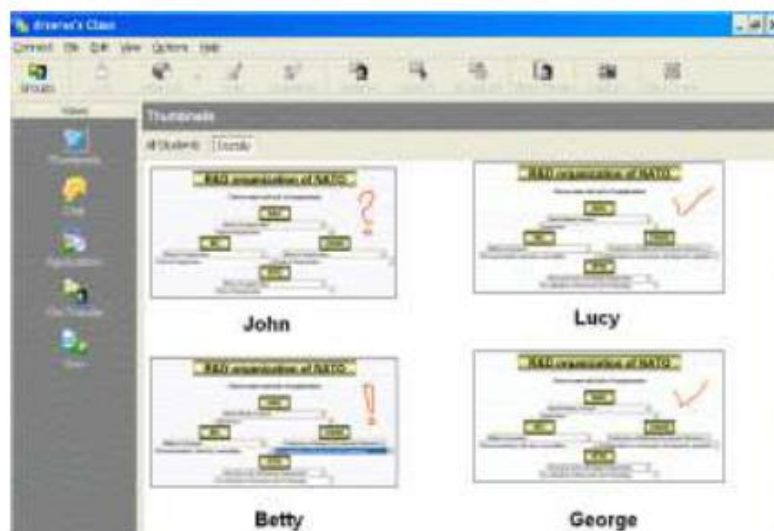


Figure 4: Display of e-teacher for checking of online answers

3.3 Web-Based E-Learning (EL) in India

Ray of light [9] in his paper “Vane -Based EL in Bharat: The Cumulative Aspect of Different Look” presented some innovative ideas to spread web-based EL in India. According to him, the web based Education Department /acquisition has the potential to meet the perceived need for flexible pace, spot and facial expression. The web allows Education Department to go to the learner rather than the learner to their breeding. As per as India is concerned there are many trouble that one will face to use IT in education like funds, infrastructure, etc. Among these a top-level of knowledge modelling in web-based eruditeness surround (KMWBEL) is the significant one which is shown in figure V

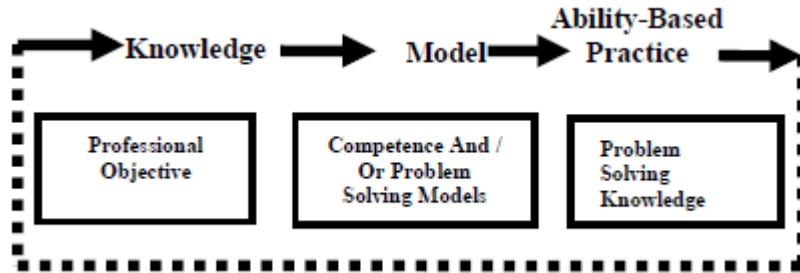


Fig2: The Model of Knowledge Acquisition (Kende et al., 2007)

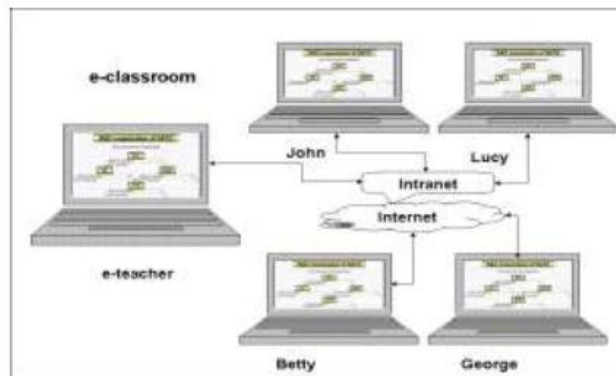


Fig3: An e-classroom

One of the most common forms of knowledge transfer of training is Elevated railroad. But there is a contradiction – especially if the e-student and the e-coach are located in different time zones. An experimental golem -coach has been developed for a talking to of author’s multimedia curriculum on the base of Nela assistant robot designed

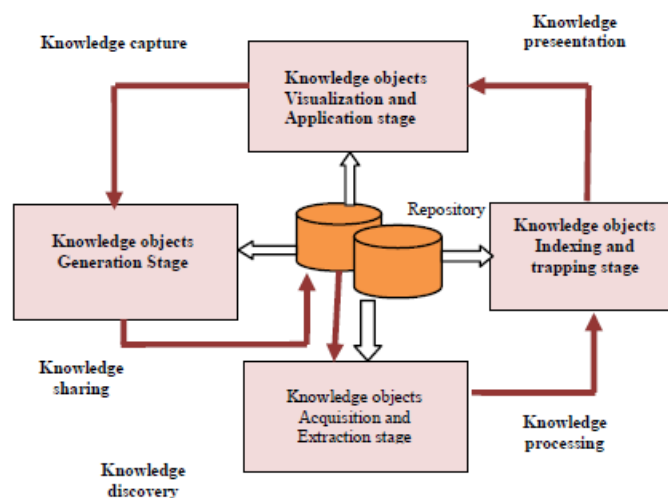


Fig 5: A top-level management model of knowledge objects in Web Based Learning (Ray, 2012).

Based upon the above knowledge-based manikin the authors developed two web-based e-encyclopaedism organisation i.e., Exchange State Interactive Education System of rules (CSIES) and the architecture of Mobile River -based Education scheme (MBES). India is far behind for the effectuation of the above outgrowth, since the percentage of computer literate person is much less than expected. Slow internet connection or older computers may shuffle access course materials difficult. Managing computer files and online learning software is another limitation. Lots of motivating is required to attract the apprentice since all the works they have do at their own responsibility. Instruction manual are not always available to help learners.

IV. THE PROPOSED ARCHITECTURE OF KNOWLEDGE MANAGEMENT

Knowledge management (KM) is characterized by its distinguish features which includes people, process and technology as shown in figure 6.

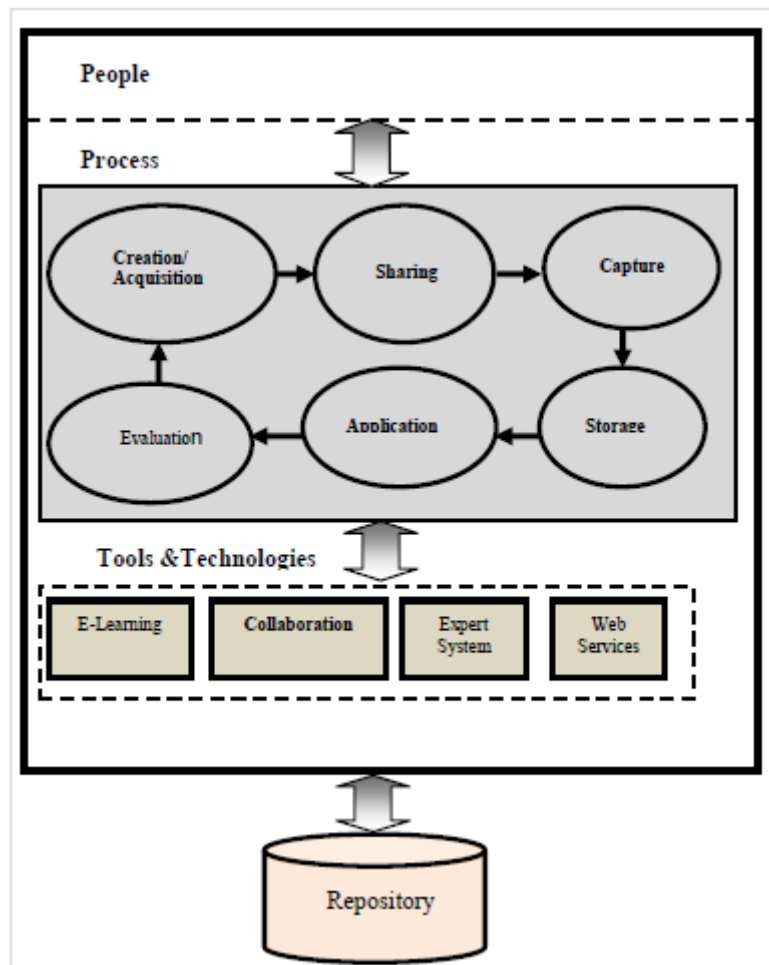


Fig 6: Proposed Knowledge Management Framework

- **Technology:** Internet and ICT is must to support Knowledge Management. Without the support of above mentioned technology Knowledge Management and e-education (Elevated railway) system will become handicapped. Along with these Knowledge Management tools and technologies will also be applied.
- **People:** People include assimilator and instructor, Also, instructional designers (IDs), content issue experts (SMEs)/Author, administrator, etc. People must be considered as one of the key resource of Knowledge Management and Elevated railway system.
- **Processes:** The Knowledge Management operation es are the essential part of EL environment without which collaborative learning is impossible. Without collaborationism cognition society (Kansas) is impossible.
- **Cognition Management Tools and Applied science** all the observations showed that Knowledge Management is a software environment to socialize the learning summons. It uses communication and collaboration to improve how people apply noesis in their job within an overall process. It has been observed that EL novice the individual learning process, Collaboration will initiate the formation of KS, expert system (ES) facilitates cognition codification, and vane service tools will be incorporated to achieve various learning modalities.

- **Repository:** Repository is the online database which systematically capture , organizes and categorizes knowledge-based information. Knowledge repositories are of two types: both private populace. Private repositories manage enterprise and proprietary information and pulic repositories manage public knowledge base intelligence. The tacit knowledge transformed into explicit knowledge is stored in the repository for reuse purpose. The performance of the Knowledge Seeker i.e., the learner is measured and returned to the knowledge repository as feedback that can be used to help determine if the skills have been learned and to suggest additional e-Erudition experience

4.1. Benefits of the Proposed Knowledge Management (KM) Model

The version of EL completely depends upon the successful incorporation of all the web Robert William Service and ES engineering science into KM. The objective lens is to create a 24x7 hours synchronous acquisition environment. Implementation of peter such as mobile computing, big information, linked information, cloud computing, semantic web, etc. can create a more sophisticated virtual learning environment (VLE). The information generated by wiki, blog, etc. can be utilized and extracted using big data and Artificial Intelligence activity (Artificial insemination) technique. Institutional or organizational cognition is the focus of today's ICT reality. Learning must ensures effective universe and acquisition of noesis. To intensify the competences of e-learning (EL), cognition and learning are to be integrated. Cognition management (KM) initiates organizational learning and EL is the best method to acquire dynamic, distributed, shared, and collaborative knowledge. The creation of knowledge in EL environment takes place by the conversion of expert's knowledge into subject which is stored in the repository for use of the assimilator. In this way, learners acquire the knowledge from the available content.

4.1.1 Essentiality of Knowledge Management (KM) Processes in E-Learning (EL)

It is the challenge for the assimilator in the Overhead railway surroundings to acquire new knowledge from the existing knowledge which can only be possible by the knowledge sharing process. KM plays a significant role in this regard by incorporating collaborative learning where mathematical group of learners avail the opportunity to learn together with the funding of various internet-based dicks and applied science such as through podcast the learners can interact by sound /television conferencing. Online give-and-take forums, live chat, e-chain mail, etc. also alleviate collaboration to a greater extent. Cognition capture is the key to achieve knowledge acquisition and sharing. Noesis capture is the process of converting tacit knowledge to explicit form and explicit knowledge to tacit form for acquisition purpose. Expert system of rules (Atomic number 99) can extract tacit knowledge and codify it into evening gown spoken communication which is then available in the form of learning content. This content can be shared among the learners. Each individual learner can acquire knowledge during learning. Storing of knowledge is another important aspect of learning which is done through documentation of content. Knowledge in EL system is stored through data bases and document management organisation. The memory and retrieval of knowledge in EL environment is supported by the web tools such as wikis, tags, mixer networking (face book, chirrup, etc.), big data, linked data, etc. Knowledge evaluation of learners must be done on regular basis to ensure the accuracy and correctness of knowledge acquired. The evaluations may be done both in subjective and object glass method. The subjective methods are gift assignments, mid-full term examinations, etc. Objective method acting include quizzes, verbal techniques such as conversation with students (formal and informal), group discussion, observational techniques such as learner behaviour, attendance, etc. The different web-based tools and engineering such as face book, e-mail, etc. are used for submitting assignments and for quizzed.

4.2. Limitations of the Proposed Model

The challenge is not only the technology but the mind-set of the people to think about accessing, desegregation, and leveraging knowledge. Also increasing the productivity of knowledge work and the knowledge worker is challenge. Because experts' knowledge is in abstract form, knowledge communion is difficult. Again trio assimilator may side destiny of problem to avail KM adroitness. In development country like India, IT facilitated learning is difficult to implement due to financial barrier. Also, it is much difficult to connect rural domain into EL system due to lack of internet facility. Mise en scene up nodal centres in each and every small town, town and city is another big challenge since huge total of technological infrastructure is required. Enabling the instructor for online precept is also a big challenge.

V. Conclusion

The existing factor based e-encyclopaedism (EI) architecture s and SOAs provide distributed scholarship surroundings for interoperability and modularization of virtual encyclopaedism environment (VLE) respectively. It has been observed that using artificial intelligence (Army Intelligence) technique synchronous encyclopaedism can be achieved. Collaborative scholarship is achieved using knowledge management (Klick)

technique in EL. Knowledge-based learning proficiency are beautifully presented by Kende. Learners' attitudes, skills are determined with the help of the architectures. The adaptable EL Architectures satisfy the needs of teacher, learners as well as the institution to enhance the teaching/learning procedure to a significant extent. Due to the shortcoming of existing Klick architectures a new KM theoretical account is suggested to filling the gap. Use of AI technique and expert system is suggested to create a 24x7 hr synchronous learning environment. It is expected that the standard of pedagogy at secondary as well as post-secondary level in Odisha will be enhanced significantly. With the advancement of standard of education the economic consideration of the state is supposed to be improved. Distinct lineament of KM with their usefulness for learning is also explained. The suggested framework of KM is supposed to speed up the learning cognitive process through collaboration. The acceptance condition of the proposed architecture is left for the future ambit.

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