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Using Effective Analysis Techniques, Distractions were solved in E-Learning Environment

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Abstract: *The integration of information and communication technologies in education through E-Learning environment, some distractions arises, when learning through Computer Based Training(CBT), Learning Management System(LMS) and Web Based Learning. The proposed environment focus on analysis in learning methods, this paper presents some of the effective analysis techniques to overcome distraction in E-Learning environment. While learning through computer web based environments, learner will get distraction and learner can skip the learning content or not that much concentrate in learning. To avoid this situation, the learning environment which includes questionnaires and it will be appeared with some intervals while learning. And it is stored in the database and data analysis is done. From the Analysis of the learner's data, the prediction may analyze that how the learner understands the learning content. It will more helpful to the learner to check their score. It makes the learner to redo the learning content, if the analysis is in worst case. For the best predictions of learners, It can be implemented by storing the learners data in backend and through supported front end, the learners analysis is to be done.*

Keywords: *Analytics, Distractions, E-Learning, Learner Analysis, Data Analysis.*

I. INTRODUCTION

Several studies stated that, E-Learning offers opportunity to raise educational standards in institutions. It makes potential to support interaction, communication and collaboration between learner and learning environment. It enhance in developing digital literacy skills and promoting different pedagogical procedures. Some kinds of creativity and innovations were created, and students were grouped or connected beyond the formal education. It will result; easily the learning is reached to every learner. Learning made simple of using these concepts, which made improved in employability for slow learners and remote village peoples. The importances of teaching in E-learning Environment were increased in society. Large number of tools and softwares were available for teaching and learning.

Learning management system and some web based learning tools helps the learner to learn in sited place itself. It breaks the gap of "Digital Divide", though it is Learner centred involvement of teachers and students is important. Through these E-Learning environments the learning contents were delivered better, only delivering the educational content to learner will not help the learner to learn better. The LMS softwares or any web based learning tool should have the process of analytics. Many of the LMS softwares have analytics. After the entire learning content is finished by the learner, finally the questionnaires will be raised and analysed. While getting the analysed data, it predicts the knowledge of learner, that how much is strong in that learning content. Getting input from the learner through questionnaires, between some intervals questions will be raised during learning time, the questions will be uploaded by the instructor, when the learning content is uploaded in the learning softwares, and the answers provided by the learner will be saved in database. The data collected from the learner and it will be stored in database. To analyse the learner knowledge in particular learning content. Of every content the analyse is done and saved in database. It will make the learner to improve their learning; it will be useful to predict the learner, and make the progress assessment and evaluates the grades. In the previous study, the software used in E- Learning will have static analysis and assessments. But in future the analysis will be in dynamic predictions, during the course of study itself, distractions can be identified by using time interval questionnaires. Evaluation process needs some sort of storage and retrieval. If the video is playing and learner is learning the content, total run time of the video is 20 minutes, on every 5 minutes questions will be displayed that will be related to last 5 minutes session. Getting the answers from the learner for every 5 minutes, finally these data will be stored in the database for predictions and analysis the learner. By having the learners data, which get through questionnaires and it will be analysed by using best database backend and best frontend programming languages to predict and analyse the learner.

The following sections focus on E-Learning environments of knowing the education process. And how the learner is to be analysed. The first section addresses E-Learning environments concepts and its future. The second section addresses the learning distractions, and the third section implies the analytics of learner's data.

II. E- LEARNING ENVIRONMENTS

Learning with information technology is the future of education. Education through electronic device with internet or with stored data, internet plays a vital role in learning environments. Learner may use E-Learning software or websites, to learn. Apart from traditional learning techniques like classroom learning, reading books in library and group discussion with friends in face to face interaction. Education with information technology will be easy for learners to study or to discuss. In traditional education learners will be dependent on instructor. But in e-learning, learner without the help of instructor the learning content can be delivered. Both advantages and disadvantages will be arises on both the cases. Through E-Learning 24 x 7, parent portal, discussion board and without instructors, these will be possible in E-Learning but in traditional Learning it is not possible. Vice versa in traditional learning learners may feel better in learning real time with role-play situations, with highly skilled trainers to explain their doubts. These E-Learning environments described below were used in current learning environments.

A. Learning Management System(LMS)

Learners who want to shift from traditional Learning to E-Learning then LMS is the solution. LMS is the web based application in which trainers upload learning materials or courses. And learners access courses flexibly at a convenient time using desktop, laptop or mobile devices. LMS includes learning and training management modules, it needs for schools, colleges and companies by delivering of their domain related E-learning courses, assessing learners to improve their performance. The main functions of LMS were user management, online course management, tracking of courses and online assessment. Improves classroom training experiences with reduced cost of instructor led trainings with LMS. Conducting online assessment for specified group. Feedback and surveys made important in LMS is a fine thing to get better future enhancement. Thus conducting survey on specific group of learners and feedback post completion of course assigned. LMS softwares like Some of the LMS software's used mostly in educational institutions like uQualio, Easygenerator, Courseplay, TalentLMS, CANVAS, Moodle, iTunes U, Adobe Captivate Prime, Edmodo, WizIQ, Easy LMS, Teachable, OpenEdX, EduBrite, Totara Learn, Schoox, Path LMS, DeveLoop, LearnDash, NEO LMS, swayam.

B. Web Based Learning

Through internet some of the web sites and blogs were delivering the learning content like youtube, Khan Academy, Skill Share, Code academy, Lynda com, EdX, Internet Archive, Big Think, NPTEL and university websites. While learning in web based learning the learner can search the learning content, and from the web server the content is downloaded and learned. Some content will be cloud storage; of accessing this cloud storage content, internet is must to download it. All the learning content and web based application content were stored. And these volumes are high, storing these large data represented as big data. By 2020 IDC and EMC estimate that 40,000 ExaBytes by 2020. Thus through web based learning some of the redundancy materials will also appear. Some of the web based applications were not user friendly and these applications make the learner to create distractions.

III.DISTRACTION IN E- LEARNING

A. Modes of Distractions

While Learner is learning in specific domain, some unrelated content will also be displayed like advertisements on product or unrelated videos or unwanted plug-in, the learner can't concentrate in the learning content. There is the possibility of distraction occurred. Some of the major distractions were listed below.

- 1) *Advertisements:* while learning in web based in some situations advertisements with some offerings and attractive posters may be displayed in the website. It will be disturbed by scrolling or some sort of animations of advertisements in the learning page The learner has to reply for that advertisement or supposed to close it or if the advertisement is attracted by the learner, by clicking it it will redirected to the advertisement website and learner will be distracted on entire learning process.
- 2) *Unrelated Learning Content:* learner learns on specific topic some entertaining content, news or social issues will also be listed in the website. In this environment learner will be moved to unrelated learning content and there is the chance of distraction. While the user searched the keyword like machine learning the website searches with two keywords machine and learning, the search results will show the machine related contents and learning related contents, it results to some films and entertaining social related contents.
- 3) *Learners Concentration:* Learner they have their own problems and thinking something, with their psychological situations distraction will arise. Also in Group discussion forum learner will chat with other learners to share some thing, in that situation they may distract by sharing unrelated content which is not related to their study.

B. New Method to overcome Distraction

To avoid distraction in E-Learning platform, analysis should be done on every learner with learning content. If the learner comes to know that if it is ranked by how much knowledge the learner has and level of distraction is to be found. This can be done only of getting input from learner through Questionaries, Gaming Methods, Quiz and CAPTCHA related to the specific learning content, from the learner input the analysis is performed to check the learner ability in that specific learning content, the percentage of distractions and analysis of learner's data will be predicted.

IV. ANALYTICS OF LEARNERS DATA

Analytics can help to determine if learners may benefit from supplementary E- Learning materials or peer, instructor aid throughout the E-Learning course. This leads to higher grades and a more meaningful and complete E- Learning experience. Provides learners with a personalized e Learning experience, Through learning analytics, E- Learning professionals and online instructors gain the ability to custom tailor E- Learning experiences for each and every individual learner.

- 1) *Stored in Database:* While learning, through questionaries the answers were checked whether it is true or false and the result is stored in the database for future assessment or survey. These input data get from the learner will be stored in database for trained data for analysis and prediction. Some of the database used in analysis oracle, MySQL, NoSQL, Microsoft SQL Server, MongoDB, Postgre SQL, DB2, Microsoft Access, Cassandra, SQLite, Redis.
- 2) *Programming Languages Used:* For Analytics or statistical data analysis, programming languages were used for Data analytics, standalone computing, analysis on individual servers, quicker use of statistical models, easy to implement algorithms, packages using formulas without installing it, Integrated Development Environment. This feature is not present in other programming languages. Some of the programming languages used for analytics R, Python, SQL, SAS, Java, and MATLAB.
- 3) *How it is predicted:* Depends upon the learners information like age, gender, qualification, specialization, working organization, living town etc, and the main thing is learners input data, which saved in the database while learning. When questionaries asked while learning in E- Learning environment, those answers were stored in database. Keeping those data analytics is performed by programming language through regression or categorical predictions depends upon the learner's strength, the prediction is performed.

V. CONCLUSIONS

In E-Learning environment learning were made simple through technologies and web, while using these technologies some of the major distractions were arises, to control it and to improve learning challenges, the learner has to know that, the level of understanding in learning the educational content. The learner comes to know about their distraction level and analytics. It will increase the learners to improve their level of learning without distraction. The learner results and analysis is stored as a report database for every user. Through the classification it will be predicted that learners level of distraction while learning. For easy and quick analysis, from the users input data the analytics is done using analytics programming languages and database retrieval. In future the analysis is done with their details like Age, Home town, sex, working organization, qualifications, these will predict and analyze the future of E-Learning.

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