Preferences of Adult e-learners towards Online Resources

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Abstract

e-Learning offers education at a fraction of a cost in comparison to the cost of enrolling full time for a course. It also provides flexibility to students in terms of choosing their study time and place. Research indicates different factors like computer literacy, learning styles affect student preferences for e-learning.

This paper goes a step further to find which learning resources do adult e-learners prefer to learn from, to complete a course successfully. This will aid in adopting an instructional style, which is consistent with their learning style. In addition, the paper aims to find the essential attributes of online learning course that will ensure its success among adult learners.

An online questionnaire was sent to e-learners and potential e-learners to find their preferences towards online resources. The data was analysed using frequency distribution and graphical visualization. Some of the findings were that, online and distance education courses are preferred by full time employees who wish to improve their work performance, most e-learners learn by experimenting and feeling, videos are the most preferred resources and they should be long in length, and final assessment should be in the form of MCQ's (Multiple Choice Questions).

The study indicates that preferences of the e-learners are consistent with the constructivist approach of teaching. Well-presented and longer videos, adoption of the R2D2 model, rich instructional material, structured content, strong guidance, asynchronous activities, well defined MCQ's, robust student support to prevent dropouts and well tested and bug free technology are the factors that will ensure the success of any online course aimed at the adult e-Learners.

Keywords: E-learning, Adult learners, MCQ, R2D2 model

Introduction

Isaac Pitman introduced modern distance education in 1840. Students received assignments by mail, which they completed and sent back to Pitman for evaluation.

The University of Chicago started the first distance education course at college level in the year 1892. With the advent of the technology golden era in 1921, colleges started delivering education through live radio shows. In 1963, the Instructional Television Fixed Service (ITFS), a low cost system, broadcasted lessons live on television. The State University of California was the first to apply for this ITFS. In 1964, the University of Wisconsin introduced AIM (Articulated Instructional Media) project. The University was instrumental in categorising and systemising distance learning practices.

In 1970, the virtualized system campuses were born. While 1980, saw the commencement of disseminating course content using educational satellite system. Further, in 1985 National Technological University hosted the first online degree course by satellite transmission. The learning content was delivered to adult learners by accessing it from other universities. To clear doubts, a student could directly interact with a professor through a telephone.

The delivery of distance education and costs of transmission drastically changed with the introduction of internet in 1991 and the subsequent development of the World Wide Web. In 1996, asynchronous learning was introduced which gave students the freedom to learn at any time and from anywhere using the Internet. Massachusetts Institute of Technology in 2002 launched an open access website

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for its courseware. By 2005, there was a strong indication that online education was here to stay.

Who are e-Learners?

e-Learners are self-motivated and goal oriented persons who are place-bound and learn online. The responsibility of e-learning is on the e-learners. e-Learning is rigorous, challenging, and different from regular classroom learning. In comparison to the classroom learning, it offers a convenient and flexible form of learning where the e-learner is able to manage time. It is well organised and effectively budgets the time required to learn the course.
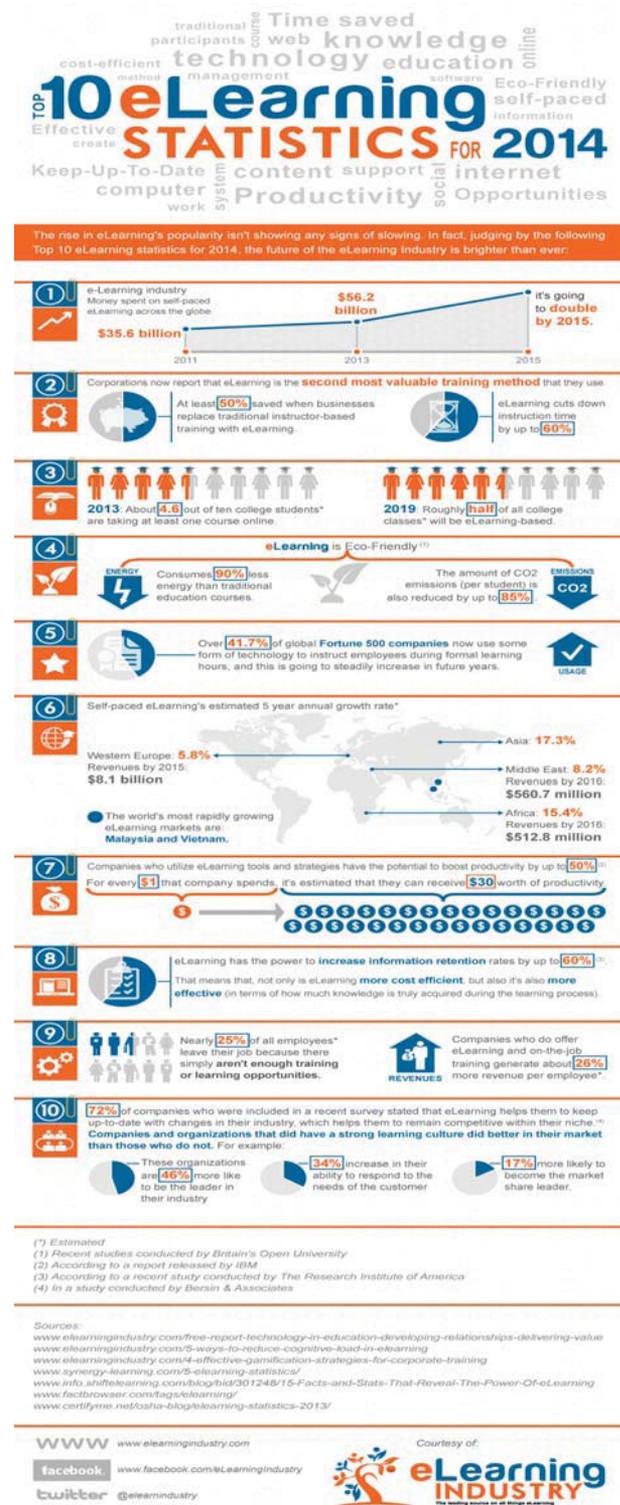
Why e-learning?

The best reason that many people, especially working professionals, opt for e-Learning is that it allows them to complete their course in their own time. e-Learning is cost effective and saves time. A learner can complete the course whenever and wherever they are free without any disruptions. A well-implemented Learning Management System (LMS) makes it easy to track and prove progress in an online course. It allows the e-learners to tackle the subjects at their own pace, and interact with the content to get a thorough understanding of every module. The most important thing is that it allows one to fail with freedom and motivates in improving learning performance. E-learning courses that give feedback on time aid the e-learner in increasing their scores.

Survey of Online Learning

Because of the reasons mentioned in the previous section, many adult e-learners enrol for online courses. In the year 2008 around 4, 35,000 adult learners applied for online courses. As per a study conducted by Babson Survey Research Group and College Board in the year 2010, the proportion of online courses continue to grow. Around 6.1 million students had enrolled for online courses in the year 2010, an increase of 560,000 students over the previous year. In 2013, there were 7 million, a 15 per cent increase in just two years.

The following is an infographic on an e-learning survey report.

TOP 10 eLearning STATISTICS for 2014

The rise in eLearning's popularity isn't showing any signs of slowing. In fact, judging by the following Top 10 eLearning statistics for 2014, the future of the eLearning Industry is brighter than ever:

1. e-Learning industry — Money spent on self-paced eLearning across the globe: $35.6 billion (2011), $56.2 billion (2013), it's going to double by 2015.

2. Corporations now report that eLearning is the second most valuable training method that they use. At least 50% saved when businesses replace traditional instructor-based training with eLearning. eLearning cuts down instruction time by up to 60%.

3. 2013: About 4.6 out of ten college students are taking at least one course online. 2019: Roughly half of all college classes will be eLearning-based.

4. eLearning is Eco-Friendly — ENERGY: Consumes 90% less energy than traditional education courses. EMISSIONS: The amount of CO2 emissions (per student) is also reduced by up to 85%.

5. Over 41.7% of global Fortune 500 companies now use some form of technology to instruct employees during formal learning hours, and this is going to steadily increase in future years.

6. Self-paced eLearning's estimated 5 year annual growth rate: Western Europe: 5.8% Revenues by 2015: $8.1 billion. Asia: 17.3%. Middle East: 8.2% Revenues by 2016: $560.7 million. Africa: 15.4% Revenues by 2016: $512.8 million. The world's most rapidly growing eLearning markets are: Malaysia and Vietnam.

7. Companies who utilize eLearning tools and strategies have the potential to boost productivity by up to 50%. For every $1 that company spends, it's estimated that they can receive $30 worth of productivity.

8. eLearning has the power to increase information retention rates by up to 60%. That means that, not only is eLearning more cost efficient, but also it's also more effective (in terms of how much knowledge is truly acquired during the learning process).

9. Nearly 25% of all employees leave their job because there simply aren't enough training or learning opportunities. Companies who do offer eLearning and on-the-job training generate about 26% more revenue per employee.

10. 72% of companies who were included in a recent survey stated that eLearning helps them to keep up-to-date with changes in their industry, which helps them to remain competitive within their niche. Companies and organizations that did have a strong learning culture did better in their market than those who do not. For example: These organizations are 46% more like to be the leader in their industry. 34% increase in their ability to respond to the needs of the customer. 17% more likely to become the market share leader.

(*) Estimated
(1) Recent studies conducted by Britain's Open University
(2) According to a report released by IBM
(3) According to a recent study conducted by The Research Institute of America
(4) In a study conducted by Bersin & Associates

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Source: http://elearningindustry.com/top-10-e-learning-statistics-for-2014-you-need-to-know

For a large country like India, e-Learning offers the reach and richness to improve the graduate enrolment ratio and support continuous learning of individuals. According to the report "E-Learning Market Trends & Forecast 2014 – 2016" by Docebo[9], the worldwide five-year growth rate in self-paced e-Learning is 7.6% and may reach revenues of $51.5 billion by the year 2016. In Asia, the predicted growth is 17.3% and much of the growth will come from India, China and Australia. In India, government support is likely to propel the growth of the e-Learning.

According to news, in the Financial Express, Open Distance Learning (ODL) contributes 22% to Graduate Enrolment Ratio (GER).The ODL institutions provide an online portal for students to access a wide variety of resources that will aid them in their studies. According to a survey conducted by the University of Pennsylvania among Coursera (a Massive Online Open Course platform) student community, 10% of Indians form second largest group on to enrol into its various programmes.

The drivers for growth of e-Learning in India are internet penetration, a young knowledge work force that wants to upgrade / build skills, access to various devices from laptops to tablets, flexible learning hours and affordable cost of education.

Some universities and online course providers offer a wide variety of resources for students to learn a course. Whether a student has enrolled for a distance education programme or an online course, the student learns by accessing various resources like PDF's (Portable Document Format) of courseware, videos, concept maps, wikis and blogs. However, the question is which of the learning resources enable the students to learn effectively in an online course. ?

This paper investigates into the learning resources adult e-learners prefer to learn from to complete a course successfully. This will aid in adopting an instructional style, which is consistent with their learning style. In addition, the paper aims to find the essential attributes of online learning course that will ensure its success among adult learners.

Literature Review

1. Bertea (2009), Drennan, et al. (2005); Liaw et al.(2007); Nogueira and Machado(2008); Sharma et al.(2007); Sun et al.(2008) indicate that ; positive perceptions of technology, ease of access and use of internet, computer literacy, perceived usefulness, self- efficacy, motivation, patience, self-discipline, self- regulation are among factors affecting students' attitudes toward e-learning and achievement on these programmes.

2. Caglar and Turgut[3] feel that information and communication technology has become an important tool in education. The main purpose of their research was to analyse students' preferences towards e-Learning and to determine some factors that have an influence on it. Results revealed that there is a remarkable connection between computer literacy and students' preference towards e-Learning. As their technical abilities and familiarity in using computers increase, their preference to have classes on the internet is also scale up. With respect to age and grade; as the students get older and reach higher grade, they prefer e-Learning. The comparison test displayed, that private university students are more willing to use e- learning.

3. Gülbahar and Alper[17] are of the opinion that learning preferences and learning styles are a way to enhance the quality of learning, especially for those who are alone in front of a computer. The aim of their paper was "to reveal possible learning preferences and learning styles of students in online environments" and "to provide sample ideas for e-instructors". They report that the preferences of learners may fluctuate for different content, instructor and so on. Hence, it is important to collect continuous data through an inventory, get feedback from the learners as to whether the results are reasonable and appropriate, and re-organize all aspects to reach a more effective solution.

4. From the learning styles point of view listed by MacKeracher (2009),

   a. Adult learners have individual learning styles and mental abilities and are heterogeneous in terms of these characteristics,

b. If learners' and facilitators' learning styles mismatch, the result will be unsatisfactory,

c. Learning styles are value-neutral, a style adaptive in one situation may not be adaptive in others,

d. Adults prefer to select learning situations and learning facilitating interactions individually, and

e. Adults prefer to start from the learning activity they feel most comfortable with (p. 82-83).

5. Salih Rakap's[31] paper examined the influences of learning styles/preferences, prior computer skills and experience with online courses on adult learners'. The results of the study showed that students with read/write learning preference showed the highest level of performance in the quizzes. It also examined the relationship between students' computer skill and their success in a web-based course. It also showed those students' knowledge gain changes as a function of learning styles. The World Wide Web continues to be a practical medium for delivering trainings, in-service education programs and undergraduate and graduate level courses, and learning. The findings of current research further support the necessity of identifying individual differences (e.g., learning styles and computer skills) of online course participants in order to optimize instructional design and strategies, maximize learning opportunities for students enrolling in online programs and courses, and address their diverse needs for learning.

Research Methodology

To find the preferences of e-learners towards online resources primary data was collected. Anonline questionnaire (created on Google docs) served this purpose. The online questionnaire was first sent to e-learners who had enrolled for any online or distance education course. Then the online questionnaire was sent to potential e-learners interested in enrolling for an online or distance education course. The respondents were from diverse occupation like students, bankers, and teachers.

The responses to the questionnaire were gathered by sending the link to e-learners and potential e-learners through email, posting the link on the LinkedIn and the student portal at the university where the authors work. 62 responses were received out of which five were rejected as they had incomplete data. Among the 57 responses, 26 were e-learners and 31 were potential e-learners.

As the data collected from the questionnaire was qualitative and the sample size being small it was analysed using frequency distribution and graphical visualization to find the distribution of e-learners in terms of occupation, gender, reason for taking up the course, challenges on course completion and style of learning, delivery style, grading and assessment.

The analysis was done as follows. First data was analysed for e-learners who have enrolled for an online course. Then the data was analysed for potential e-learners. This helped in finding if the expectations of potential e-learners match with the preferences of e-learners who have already enrolled for the course. Finally, the findings were verified with the available literature on each question.

Discussion

The objectives of the research paper was to find the preferred online resources that adult e-learners use to complete a course successfully and determine the attributes of online learning, which are essential for the success of an online or distance education course targeted at adult learners.

The findings of each question of the questionnaire are presented below followed by a discussion to arrive at the conclusion. The discussion begins by considering the general characteristics of the e-learners.

Most of the respondents (e-learners) who enrolled for online courses are into the teaching (54%), and finance and banking profession (31%). Of these 85% work full time and the gender distribution (54% females and 46% males) is fairly balanced. 73%of the e-learners enrolled for an online course to improve their performance as employees. 12% to switch careers, 8% to answer certification exams while 8% undertook the course to supplement their regular studies as students. This corresponds

to 73% of the respondents enrolled for short-term courses, 12% for diploma courses, 8% for tutorials and 4% for degree programmes.

Among potential e-learners 74% fall into the category "others" (most these learners work in the education services industry as administrative staff), 13 % into banking and finance and 10 % into teaching. An overwhelming majority of them work full time, 55 % of them are female, and 45% are males. As in the case of e-learners who have enrolled for an online course, majority (77%) of potential e-learners want to enrol for the online courses to improve their performance as employees.

This indicates that full time employees irrespective of gender wish to improve their performance as employees hence opt for online and distance education courses.

Most of the e-learner respondents (77%) spend at least two times a week online for studying their course content (Refer Figure 1). Since most of the respondents are working this may indicate that they access the online portal for their studies on weekends. On the other hand, 39% of potential e-learners have planned to access the portal twice a week, 23% once a week while 32% are undecided. The 32% who are unsure of their plans of accessing the portal for studies may even drop out of the course or may need instructions for the time to spend learning online. Sending regular updates to such students may aid them in accessing the learning portal more frequently. Hence providing instructions and guidance for study will aid the student in completing the course. Overall as many of the respondents spend once or two times week studying from the online portal it is best to provide at least a week's time for the students to complete assignments, quizzes and learning activities.

When it comes to the learning style, majority of the respondents say that they learn by experimenting and feeling (Figure 2). In other words, e-Learners want to be in control of their learning by relating concepts, experiences and the sequence they follow in learning etc. Therefore, a learner centric approach like constructivism will aid such students. In this approach, students learn by "constructing
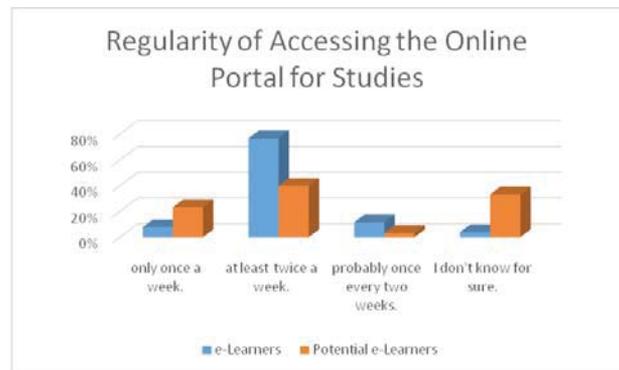
Figure 1: Regularity of Accessing the Online Portal for Studies by Respondents.
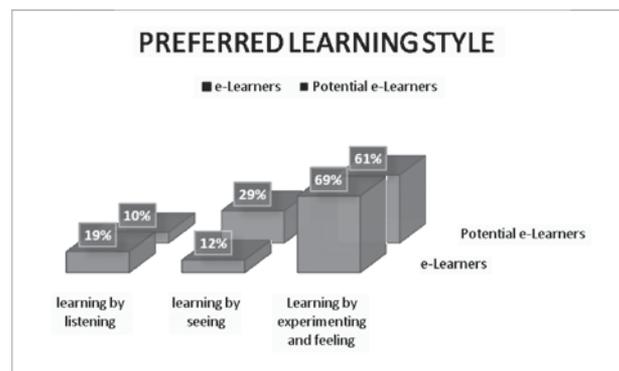
Figure 2: Learning Style Preferred By Respondents.

knowledge by collecting, synthesising and integrating information by probing, communicating, and critical and creative thinking[21]". Piaget & Inhelder[29] report that such learners gain knowledge if constructivist approach is used for teaching (1969). In his article "Designing Constructivist's Environment", David Jonassen[23] expresses that E-learners have to be provided with rich learning resources so that they can construct their knowledge and understand problems. He advocates the use of "text, graphics, sound resources, videos and animation that are appropriate for learners to comprehend the problem and understand its principles". According to Huang[20], a constructivist approach will support the application of instructional principles like interactive learning, learner centric learning, authentic learning, facilitating learning, collaborative learning and high quality learning.

From the above viewpoints, it is clear that constructivist approach will suit the "experimenting and feeling" learning style of the e-learners. That is the learning resources must provide instructional guidance to this type of e-learner in their quest to construct their knowledge from their experience and learning.

The type of resources that e-learners accessed in the order of ranking are

1. Videos
2. Infographic
3. Blogs
4. Webinars
5. Games
6. Presentation
7. Case study

Whereas the ranking given by potential e-learners for the type of resources they will access are:

1. Videos
2. Games
3. Presentation
4. Webinars
5. Infographic
6. Blogs
7. Case study

The top four learning resources ranked by e-learners are videos, infographic, blogs and webinars whereas potential e-learners prefer videos, games, presentation and webinars. This preference may have to do something with their prior experience in using them for learning. In addition, the top four learning resources can be used effectively to support the dominant learning style (experimenting and feeling) of these learners using a constructivist approach. Blogs and webinars help the learners to interact with each other as well as the instructors. It also facilitates the learners in asking questions to their peers and instructors to clear their doubts.

Willis[39] advocates the use of the R2D2 model for supporting a constructivist approach in teaching. Bonk and Zhang[1] in their paper on R2D2 (Reading, Reflecting, Displaying and Doing) model for online learning suggest that for the reading component instructors may provide videos lectures, infographic

and webinars. For reflection provide blogs and streamed video[1], for visual learning infographic and presentation, for doing, provide games[1] and assignments which may be submitted in the form of a video, presentation or a blog. Schell & Janicki[33] mention that learning resources like videos help students in understanding a complex problem or can be used to demonstrate an experiment or spread sheet. That is it can provide details of how concepts are applicable in real life (authentic learning) Also Glogoff[14] reports that blogs can be used collaborating and providing personalised feedback.

The e-learners and potential e-learners agree that videos are the most preferred resource in understanding the course content. It is interesting to note the disparity thereafter between the ranking of the resources given by e-learners and potential e-learners. This difference may be because e-learners are aware of the type of resources available in an online classroom in comparison to the potential e-learners. Games, presentation and case study are usually not provided for short-term courses on learning platforms like Coursera. Hence, e-learners may have ranked these in the last half of their online learning resources list. Potential e-learners may have ranked presentations as the third best resource because they are familiar with the traditional classrooms where presentations are used to deliver lectures. Games may have been ranked two as potential e-learners may be active gamers on various devices or might have used them in the traditional classroom to learn. Interestingly webinars are ranked fourth and case study is ranked seventh. This may be because participating in webinars and case study consumes work time or free time.

From the discussion on the learning style and ranking of resources, it is evident that using the R2D2 model will greatly enhance learning in a constructivist classroom. It allows the course creators to create a variety of resources rich in instruction like videos, blogs, animations, simulations and discussions that are interactive and allow students to learn on their own by visualising, reflecting and actually doing.

A remarkable observation is e-learners and potential e-learners agree that videos are number one

resource for learning. Hence, it is imperative to create videos that catch and sustain the attention of the student throughout the course. This thought is in accordance with Stilborne and MacGibbon[35] who that argue that videos deepen the learning experience and the engagement level of students. Joint Information Systems Committee (2002) suggests that videos aid the student to absorb the course content and motivate them to learn. Karppinen[24] mentions that achievement of learning objectives by the student is determined by the videos. Dorai, Kermani and Stewart[7] report, many e-learning systems make use of videos and presentations to teach learners.

This above findings indicates that videos are the most effective online learning tool for students. This may be because videos allow the e-learners to re-play the content until they grasp it. This in a way is more effective than traditional lectures where students have to jot down the notes as the instructor speaks. Brecht[2] mentions students can replay and skip parts of the video to enhance their understanding. In addition, Brecht further mentions that videos are essential in an online course as it reduces the dropout rate for the course. Videos also aid in creating instructor presence in the online classroom. 28% of the e-learner respondents feel that the videos must be of 5 minutes duration while 24% feel that the videos must have duration of more than 10 minutes and 20% feel that the duration of the videos must be at least 10 minutes (Figure 3). Agrawal (2011) mentions 50% of learners will view a 5-minute video from start to end in comparison to 77% of them viewing a 1-minute video start to end. In addition, Guo, Kim and Rubin[18] found that learners engage with the videos for not more 6 minutes regardless of its total length.

Results indicate that 52% of the potential e-Learners prefer videos of 10 minutes of duration. It would be interesting to find if they would prefer long videos when they are going through the course. From the preference of e-Learners and potential e-Learners, there is no clear indication for the duration of video preferred by respondents. Literature on surveys done abroad suggest that videos should be short in length whereas in this survey the preference is

towards longer videos (more than 5 minutes). This is similar to the anecdotal data that audiences abroad prefer shorter movies (90 minutes) in comparison to the longer length (2 hours and 30 minutes) of movies preferred by Indians.

Majority of the e-learners have indicated that course content must be delivered in conversational style, provide examples and contain activities (Figure 4). This means that e-learners study better when the content is presented to them in conversational style. Clark and Mayer[6] suggest that conversational style helps when the e-Learning is personalised. In addition, Ginns, Martin and Marsh[13] report that the learning material presented in conversational style is more effective than the material presented in formal style as it fosters deeper learning. Engh and Stav[10] articulate that activity based e-learning helps the working professionals in upgrading their skills.
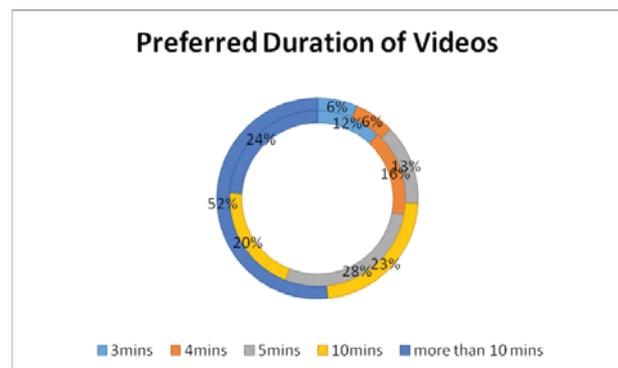

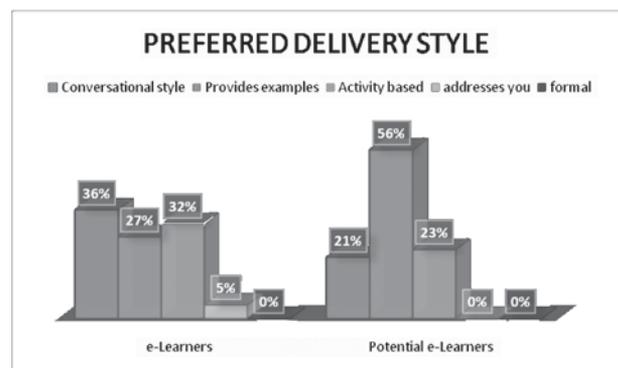**Figure 3: Preferred Duration of Videos.**

Figure 4: Delivery Style Preferred By Respondents.

Potential e-learners want more of examples, followed by activities and conversational style (Refer Figure 4). Examples help students to understand difficult concepts and know where they are applied in the real world. Vita (2001) suggests that preference for examples may indicate that some of e- learners surveyed are sensing learners. Concrete examples help such learners in understanding abstract concepts.

The discussion on delivery style indicates that the e-learners will actively participate in the online classroom if content is delivered in conversational style with relevant examples and activities. This is in agreement with their learning style of "Learning by experimenting and feeling".

More than half the e-learners and 70% of potential e-learners prefer MCQ's for the final assessment (Figure 5). Govindasamy[16] maintains that well designed MCQ's can test all six cognition levels of Bloom's taxonomy in comparison to other types of assessments. He further contends that MCQs cannot be used as the only final assessment for two reasons. Firstly, students can score marks by pure guesswork. Secondly creating MCQ's to test higher levels of cognition is difficult. However, Peel upholds the use of MCQs as it provides the advantage of automated grading and feedback to the creators of the course. On the other hand, Palmer and Devitt[28] support the use of MCQ for final assessment in clinical medicine as "well-constructed peer-reviewed multiple-choice question meets many of the educational requirements".

Similarly, there is criticism for essay type assessments. For example Higgins and Tatham[19], say essay type assessment requires the students to answer a few questions to test the whole syllabus in comparison to MCQ's which is more effective in covering the whole syllabus. They also argue that guesswork in MCQ's can be avoided by using negative marking, normalising marks and providing enough number of choices for each question.

The above discussion specifies that MCQ's may be solely used for final assessment as long as they are well defined, moderated and test the learning objectives of the course. The advantage of using MCQs for assessment is that e-learners will spend
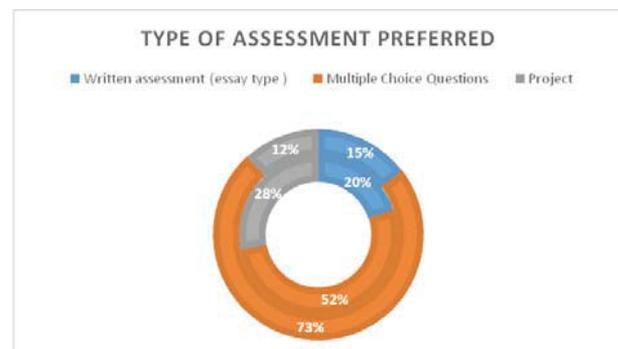

Figure 5: Assessment Preferred For Final Exam.

less time in answering the MCQ's in comparison to written assessments. Also with written assessments, students can complete a course without going through the learning resources provided. They can answer the questions from prior knowledge and searching relevant information elsewhere like the internet.

Another alternative is to use a mix of MCQ's and written assessment but this may lead to many students to not answering the essay type questions. A curious observation is that students prefer MCQs when majority of them learn by experimenting and feeling. Has this something to do with education system in India where the final assessment is essay type and where the education system advocates memorisation for learning? 48% of the e-learners polled completed the course, the rest of them (52%) did not complete the course due to reasons like not finding enough time(29%), course in progress(29%) and course duration too long (14%)(Refer Fig. 6). Lack of time is one of the reasons specified by Frankola[12] for corporate e-learners to drop out of the course. In addition, Carr[5] reports that in online and distance education courses the dropout rates are higher when compared to a regular course. According to Willging and Johnson[38] the reason for students not completing the course are unique for each of them. This reason for lack of time could be because, majority of the e-learners surveyed are working full time. This indicates that strong student support is required to advise students on how to navigate the portal, digital literacy, Q & A forum, BOYD (Bring Your Own Device) has to be provided to motivate the

student to complete the course. 48% of e-learners completed the course because they could achieve the learning objectives, there was quiz provided at the end of each topic, a summary of the content learned was provided at the end of the module and the concepts were explained from simple to complex (Figure 7).

The inference is that E-learners like a method of instruction where the course content is created by listing learning objectives, arranging topics from simple to complex, presented in conversational style with lot of examples, summary, activities and quiz to test if they understood the topic. Such type of learning material puts the onus of learning on the e-learner where learner can choose topics for learning. Real world examples help in feeling and activities should be provided for experimentation.

The top two reasons that the respondents felt allowed them learn the online course on their own pace are viewing /reading the resources any number of times till they understood it (35%) and learn at their convenience (31%) (Refer fig. 8). Sit et al[34] report that online learning allowed students to learn at their own pace. Whereas Northrup[27] reports that the main reasons for student opting for distance learning was flexibility and convenience.

The findings imply that e-learners prefer a course having downloadable/ replay-able content and asynchronous learning activities. As mentioned earlier, video lectures make it possible for students to view it any number of times until they have understood the material. Recorded links of Webinars make it
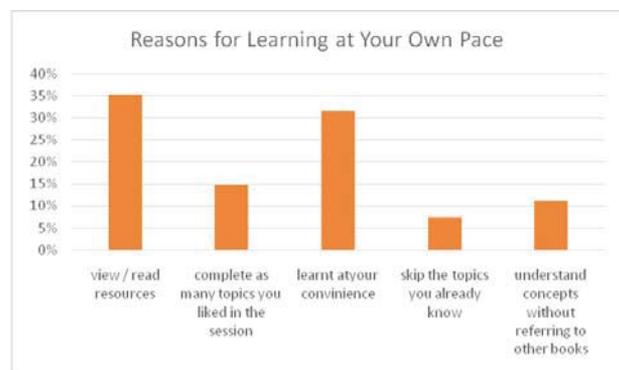

Figure 6: Reasons for Not Completing the Course.

Figure 8: Reasons for Learning at One's Own Pace.

Figure 7: Reasons for Completing the Course.

Figure 9: Challenges Faced While Going Through the Course.

possible for students to replay the lecture or talk. Asynchronous learning and 24 X 7 availability of resources supports the e-learners to learn at their convenience. Activities on blog and discussions allow the e-learner to post replies at their convenience within the deadline.

The top three challenges the e-learners faced while going through the course are technical issues (40%), complex language (27%) and concepts not organised properly (20%)(Refer Fig. 9). Muilenberg and Berge (2005) report technical problems or issues are one of the main factors inhibiting online learning. Also, as per Tyler-Smith[37] reducing the technical issues could be one of the strategies for decreasing dropout rate among first time e-learners.

The above discussion implies that online course should be tested for technology related issues like traffic limits and whether the activity is completely supported before its launch. In addition, the course content should arranged in a proper sequence.

Conclusion

The study indicates that online courses catering to working people should enhance their work performance and allow them to spend the least time in learning. The study also indicates that preferences of the e-learners are consistent with the constructivist approach of teaching. Adoption of the R2D2 model, structured content, conversational and example rich instructional material, longer videos, strong guidance, asynchronous activities, a week's deadline for assignments/activities and quizzes, well defined MCQ's, robust student support to prevent dropouts and well tested and bug free technology are the factors that will ensure the success of any online course aimed at the adult e-Learner.

Further Research

Further research could be conducted to find which other learning model best fits the e-learners requirements to improve their performance at work. In addition, research could be conducted in the area of the type and design of resources that best suit the "experimenting and feeling" e-learner in a constructivist classroom.

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