E-Learning: Student's Perception in Developing Countries like India

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Abstract—*Now a days learning process has enhanced everywhere. The class room learning is not limited to black board and chalk; it is extended to plasma TVs, remote keyboards and mouse. With the help of internet services the quality of education system is proceeding and has diverged into many different platform of learning. A survey conducted on college student is analyzed for which mode of e-learning is used by students and their primary motivation and challenges. Research result presents students' perception about E-learning and discusses possible causes for the result.*

Keywords: *Online Education, E-learning, Benefits, Motivation, Challenges.*

1. INTRODUCTION

Internet is essential for current time educational changes which support flexibility, openness, education which is electrically distributed and learner controlled form of learning.

With the development of computer, a new learning platform emerged which was termed as e-learning. Online learning or e-learning is a process of learning by electronic means which involves use of computer, mobile phone or other electronic devices and accessing internet. Online learning provides distance learning which means anybody can access internet from anywhere and learn different types of courses. It is an "on demand" service providing educational content in form of virtual classroom, webinars, online course, discussions forums and many more.

E-learning is capable of creating new learning environments to achieve prosperous implementation. The e-learning system is composed of the pedagogical, technological and organizational components and e-learning environment must include the three components in order to achieve the successful implementation and it needs to try to create balance between them (Jochems, erriënboer & Koper, 2004; Garrison and Anderson, 2003). Today with the technological advancement e-learning has evolved to a different level and there are various methods of exploiting this resource. Today, it's estimated that about 46% college students at developed countries are taking at least one course online and many others engaged in some other mode of learning like discussion forums and free tutorials available. But, the developing countries are facing some challenges and therefore the statistics may be somewhat different.

This paper primarily intends to study different methods of e-learning, their effectiveness and challenges faced by students. The author presents the widely accepted mode, the motivation sources, satisfaction with the methods and major challenges faced while using e-learning method. Hence the objectives are as following:

- To investigate which types of e-learning method is widely adapted among students.
- To investigate whether the students are finding the course beneficial.
- To investigate what factors play major role in motivating the students.
- To investigate what are the major challenges faced while using e-learning.

2. TYPES OF E-LEARNING

There are two categories of e-learning in modern days, they are:

2.1 Synchronous E-Learning

Synchronous e-learning is a real time tool. It is like virtual communication between learner the one who opt for the course and the provider who is the owner and provider of the specific content. The focus here is not on distance learning but on the way of interaction between the provider and learner. With the better interaction, learner understands the subject matter more advantageously. It is advantageous for students who scarcely willing to meet or to have face-to- face communication. They can easily search answers for their doubts online. Example if a teacher wish to share his concepts on some topic in an easier way can give online lecture or do videoconferencing (webinars).

2.2 Asynchronous E-Learning

Asynchronous e-learning require online learning as well as referred books. It is not real time, one can complete the course at its own pace. There is no time constant because no one

expect an immediate answer. In this type of learning student get a chance to participate in their own learning process, they give feedback and get status of outcomes of their study and learning goals. Example if a student wish to maintain a blog to reflect individually on some topic then it comes under asynchronous. Other examples are online tutorials, online courses etc.

3. EDUCATION SYSTEM

3.1 History

The term "e-learning" has only been in existence since 1999, when the word was first utilized at a CBT systems seminar. Internet has changed the way of communicating and also the way of interaction with each other. Now a days many people use internet for different purposes. Internet is reducing physical work as online banking is commonly used in spite of going to the bank. Internet has bought an immense change in education system also. The traditional way of learning in class is transformed to internet based technology. This technology increases effectiveness of education methods; it also increases opportunities for better learning and understanding.

4. CURRENT

Learning earlier was restricted to location and time in case of face-to-face learning. This limitation is overcome by e-learning which facilitates learning without face-to-face communication. This increases the range of people participating for same type of course. There is no issue regarding time, one can read or see the videos online at any time. So there is no need to organize a place where interested students can be present. No need to worry that when and where to provide lectures to everyone who is interested in the course. The current way of online learning facilitates with the same level of interaction which was experienced if the lecturer were physically present in front of us. Other benefits of online learning is that one can replay the audio, video lectures as may time required. There is no limit and so students can gain even more out of it. Current generation if e-learning uses Learning Management System (LMS).

LMS is a software application which allows to distribute, create, documentation, reporting and track anything anywhere on any electrical device. Its products and software are reliable, flexible, manages its continuity and allows development of online coursework. LMS was traditionally used in educational institutes but now it is used by organizations to give training to their employees and customers. LMS provides many varieties for purchase today, it is up to 600 and each of them are unique and designed to meet the needs of many educators and trainers.

5. ADVANTAGES OF E-LEARNING

5.1 Saves time and money

In traditional learning methods time and money is spent in travelling and consumption of resources. In e-learning, time is not misspend, the useful resources are available on a click also, e-learning resources are inexpensive as compared to cost of attending a conventional school.

5.2 Flexible

Some students are fast learners while others are not, and therefore, one of the best advantage of e-learning is that students can learn at their own pace and according to their own convenience. Consider the case of asynchronous e-learning which permits each learner to study at his or her own pace either slow or quick. Hence augments satisfaction and decreases stress (Algahtani, 2011; Amer, 2007; Klein and Ware, 2003; Marc, 2002).

5.3 Improves communication

E-learning platform foster communication and also improves the relationships that sustain learning. Wagner et al (2008) cites that e-Learning provides auxiliary prospects for interaction between students and teachers during content delivery. Discussion forums provide a platform where learner can interact with other learners or subject specialists. In this way, e-learning helps ameliorating communication skills of the learners by motivating them to talk to other learners. E-learning encourages students to reciprocate their opinion and respect different point of views presented by others.

5.4 Capacity and consistency

E-learning provides resources to outspread audience. This method provides same message in the same way to all the learners. For example, a degree holder learner and a high school student both will be served the same content. And thus every learner is treated equally. While in conventional system, the lecturer often focus on a group of students.

5.5 High learning retention rate

Blended learning approaches has demonstrated a higher knowledge retention rate among the learners. Since the content is mostly online, this feature also helps that curriculum can be refreshed and updated as per requirement and the changes will be visible to all instantly.

6. PRIMARY MOTIVATIONS FOR STUDENTS

E-learning is primarily self-motivated since there is no mentor physically present as compared to conventional classroom method. The student need motivation for pursuing the course which requires hard work, dedication and persistency. There are multiple factors which are responsible for successful

participation and completion of the courses undertaken by students. Prominent motivations are discussed below.

6.1 Learning and teaching process

One of the primary motivations is the process of learning which provides coeval, practical, genuine and graphical examples for teaching. For example, w3Scool a web-site which provides learning, testing and training for web-development, supply tutorials along with examples and practice test and quizzes, and thus student gets immersed in learning. Also, often the quality of classroom learning is not effective, which becomes a reason to for seeking other sources of learning like online lectures from renowned universities or instructors which are easy to understand (like surabhschool on YouTube and online classes on edx.

6.2 Discussions and recognition

Many engage in e-learning because it provide a platform for discussing and recognition. These platform includes: Online learning communities and Internet forums where one can discuss on a topic or "thread"(asynchronous), synchronous (such as instant messaging, like G-talk and mobile applications), Blogs (like blog.com), collaborative software (such as groupware or group support systems). All these platforms provide facilities to the user. For example, a blogger establishes his/her identity worldwide, apart from identity it also makes money for the person who owns the blog. Many are attracted towards this platform of education because of such benefits.

6.3 Challenging and high level content

The online content often provides more heterogeneous and improved content as compared to classroom. And many students who wish to pursue latest and challenging concepts seeks the online resources. Online courses encourages students to investigate and research about the topic, thus taking student strategies to the next level.

6.4 Easy time management

E-learning is time flexible and therefore many learners primarily opt for online or computer-based learning because a learner can manage time of study according to his/her schedule. One can study at mid-night or early in the morning it becomes a matter of availability of time. Many students are engaging in online learning after their working hours to learn new technologies and build up their skills. Apart from this, the lectures in online courses are also wisely timed, thus the effective time management of virtual classes encourages more minds toward the e-learning.

7. PRIMARY CHALLENGES FACED BY STUDENTS
7.1 Lack of motivation

Many study has shown that lack of motivation is the primary factor which inhibits successful completion of course. Student

motivation depends on three factors i.e. internal, external, and personal factors, as suggested by Song (2000). Those features of the course which themselves can influence the learner's motivation are internal factors e.g. courses which presents attention seeking and relevant content. The aspects of the learning environment that can influence the learner relates the External factors for motivation e.g. lack of time and support from close ones. Personal factors refer to motivational influences caused by the learner himself/herself e.g. procrastination, learning styles of learners, thinking "Am' I too old for learning?"

7.2 Quality content and availability

Often learners need to conFig. the computer system according to system requirements as depicted by the provider, or need a high-bandwidth for proper access to user material. The design of overall curriculum becomes a problem when it becomes unsuitable for distant-learners and becomes hard to understand in absence of face-to-face communication with an instructor. Apart from above, learners face problem in locating useful content at a single point of access, therefore difficulty arises in accessing the relevant content actually needed, i.e. problem with localization of content. And therefore need to explore many other resources which is a time consuming process. Such inappropriate content though limited in number, but may exist.

7.3 Technological difficulties

Students who are not techno savvy, find difficult to access the content over the electronic medium. Many of such students perceive the e-learning as if it is not meant for them.

7.4 Miscellaneous

There are many other factors which impairs the learning, such factors are lack of support system such as help desk or proper instruction manual.

In developing countries it is major problem to get inconsistent connection be it internet connection or electricity. Many times student have to wait a lot either in buffering of video lecture or downloading the content.

Many students demonstrate lack of confidence in pursuing online courses in different field, because of factors like difficulty in understanding the foreign content. Often their analytical skills are not good enough and they lose confidence easily. For example, a student of Information Technology pursues course in statistical analysis, then inability to understand the bar graphs will impair the confidence and increase the chances that he/she might discontinue the course of study.

8. METHODOLOGY

In order to understand the perception of student on e-learning, their opinion on various aspects of this platform must be

collected. To ensure proper data collection, appropriate mode of collecting data should be implemented.

8.1 Data collection

Opinions of the learners were collected through paper-based survey who were involved with e-learning in various forms. The survey was conducted amidst of a 3-day technical fest at Medi-Caps University, where students came from different institutes and different background. The survey was conducted in two phases, first screening and second survey-form. An effective population was chosen based on their interest in e-learning methods and their experience with e-learning. This screening of population was done by asking student's perception for e-learning and how are they consuming this resource. With this brief evaluation, population of 350 candidates were surveyed to collect the actual data. The screened population consisted of students along with many teachers at the institute and their age varied from 18-45 years, also the population was heterogeneous in terms of their background i.e. some were engaged in engineering, some in business-studies and few in medical sciences.
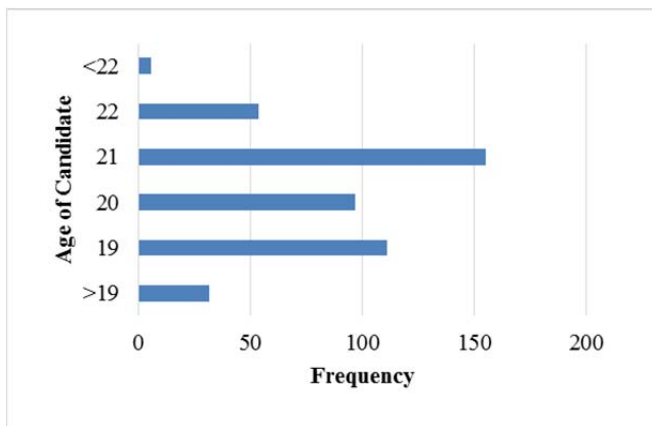

Fig. 1: Frequencies of respondents based on their age

Fig. 1 presents a demographic for students-age distribution, which clearly depicts the majority of population belongs to the age group 19-22 which belongs to sophomore, junior and senior college students.
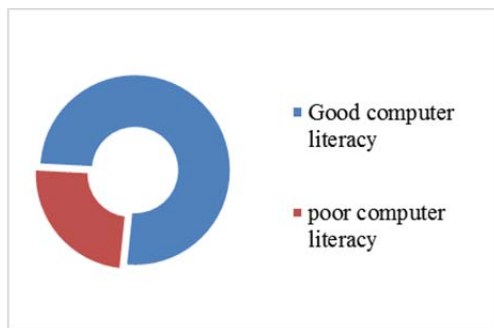

Fig. 2: Demographic information of responder with good computer literacy

This heterogeneity increased the quality of data collected. The survey asked candidate about their academics, modes for accessing e-learning, primary reason for opting e-learning over traditional classroom, their primary motivation and what are the major difficulty they face while using their preferred mode of learning.

8.2 Data analysis

Documents analysis was applied using the qualitative data analysis, which is much more effective even with small but focused samples and produce good results comparable to large sample size. The analysis was conducted in following way, the first step was organizing the data into some categories, codes are devised for each response according to these categories and stored into database for further processing. In next step, data is analyzed for possible pattern which can provide meaningful information. In step three the patterns are studied for their validity and reliability.

The data is collected on various aspects of e-learning, which are as follows

Table 1: Database snapshot representing the collected data in numeric formats

	age	gender	acad	mode	reason	outcome	rating	challenge
102	23	1	2	0100	0010	1	3	0100
103	35	1	3	0100	0010	1	3	1000
104	22	1	3	1100	1110	1	3	1010
105	21	0	2	0100	0001	1	3	1000
106	21	0	3	0010	0010	1	4	1000
107	19	1	3	0100	0010	1	3	1000
108	21	1	4	1000	0001	1	4	0010

Academic rating of the student, ways in which e-learning is utilized by them, key motivations, satisfaction for their course, key benefits experienced by the learners, and what are the challenges they face while interacting with e-learning medium (see table 1). The data is then processed for statistical analysis in search of patterns, for this many charts are created. These graphs are scrutinized for and their reliability and explanation.

9. SURVEY RESULTS

The data collected reflects the student's perception about various aspects of e-learning. Discussion presents veritable intuition of the learners.

9.1 Mode of learning

The population consumes the e-learning in different ways, not necessarily one at a time, a student may be engaged in more than one method simultaneously. Majority of population, i.e. 58%, consumes tutorials or online courses when considering e-learning (see Fig. 3). The second significant cluster of population, with 27% of share, represents the consumption of virtual classrooms. Only 9% of the total population utilizes the discussion boards or forum. The remaining 2% population

access simulators, webinars, audio/video conferencing, etc. for learning using electronic medium.

Students writing displays the superiority of tutorials, which provide self-paced mode of learning. Followed by the virtual classroom where weekly task is given during the course.
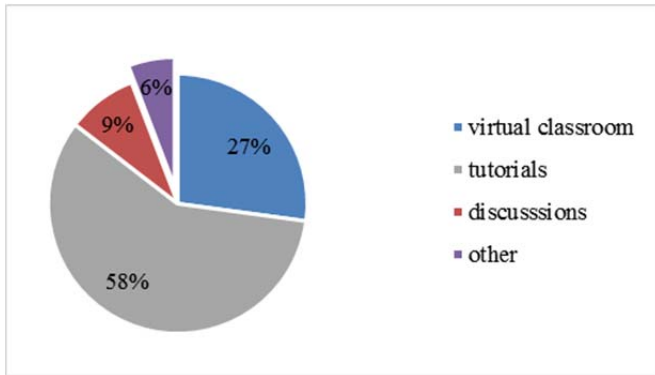

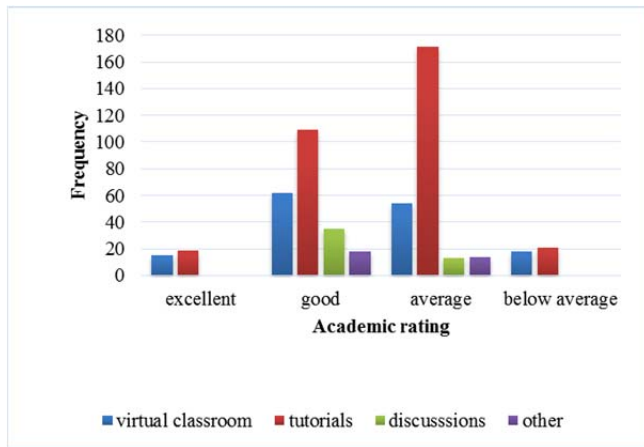**Fig. 3. Distribution of e-learning modes exploited by students**

Fig. 4. This chart illustrates the distribution graph of e-learning modes with the academic rating of students

The survey result show that, tutorials and online courses (tutorialspoint.com, codecademy.com) are widely consumed by the students whether excellent with CGPA above 8 on 10, or good 7.5 to 8 on 10, average 6.5 to 7.5 on 10 and below average i.e. 6.5 and below on 10. Students holding good academic rating explore virtual classroom and widely use self-paced courses.

9.2 Primary motivation for selecting e-learning

As the study also targets to find out the major motivation or reason for students to go beyond the classroom learning and seek e-learning. There are many factors inciting students to opt for e-learning, according to the study 55% of the student want to study a quality study material with practical examples so that they have an advance teaching as compared to classroom curriculum. 21% of the students says that, e-learning provides flexibility of time and hence manageability

with study hours as compared to rigid schedule of conventional classroom. 17% of the students select electronic mode of learning because classrooms are not effective and classroom do not provide proper teachings because of lack of proper instructor, or because of less interactive teaching sessions. Remaining 7% of students utilizes e-learning as a platform for discussions and earn some recognition on the discussion boards/forums.
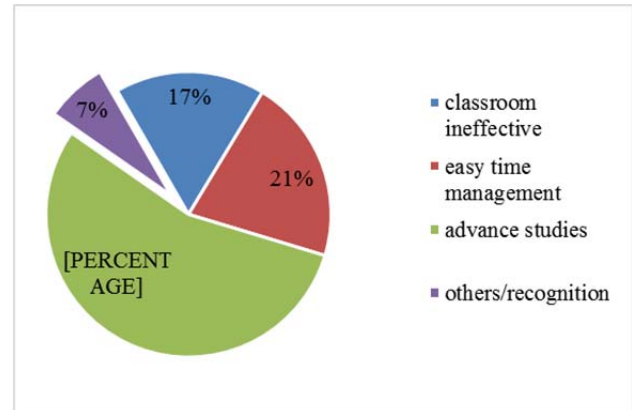

Fig. 5. This chart illustrates the reasons/motivation for selecting e-learning methods and the percentage of students citing the corresponding reason.

9.3 Benefits of e-learning to student

E-learning saves time and money of the learner and this is the primary factor which student enjoys the most. Student's responses included 56% of those who find e-learning saves time and money and is having higher ROI. E-learning platform are often internet based or can be accessed from electronic devices and therefore provides fast delivery of content. Hence very little or no cost required for learning. 33% of the total responses showed that student find it beneficial that, e-learning provide easy access to learning material such as e-book, notes, etc.
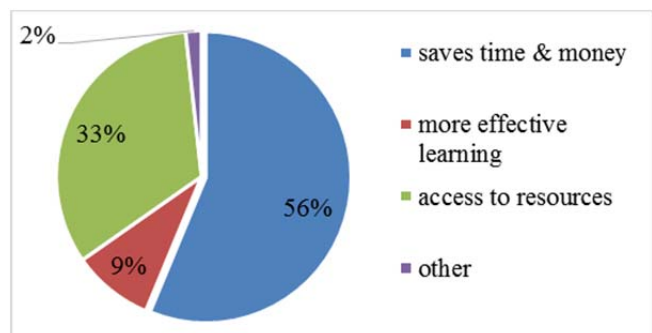

Fig. 6. Student's feedback on the benefits of e-learning

Many of learning portals provide free access to learning resources and also, they can be accesses whenever and wherever required. 9% of the responses are that e-learning is more effective than classrooms. They provide pragmatic

examples and graphical representation which have a higher retention period.

9.4 Major challenges for successful completion of course

This paper also discusses the challenges which are faced by the student while using e-learning. Therefore the survey was such that it provided details about the challenges encountered by students while accessing e-learning sources. When we say e-learning it is always self-motivated work and therefore many couldn't supplement this requirement with sufficient motivation. The study shows that 42% of the students find it most challenging to keep themselves motivated throughout the course of study. Another major challenge is that, the subject content and accessibility is limited and faced by 30% of students.
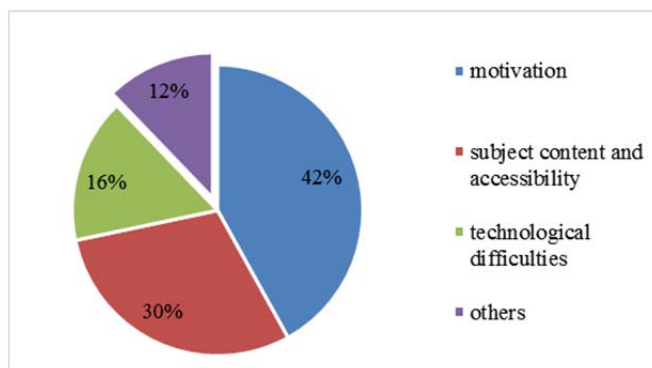

Fig. 7. Challenges faced by learners

Many students commented, on the question regarding challenges faced, that content is not available at one place and many times the content is not accessible easily, also the cost for technology or accessibility, makes it difficult to utilize the resource. 16% of the students find the electronic mode not easy to use because of less user-friendly interface and often requires computer literacy to access the resources. 12% students face challenges such as internet often becomes a necessity and content cannot be accessed offline, time management not effective and requires regular schedule planner, lack of infrastructure to access resources, etc.

9.5 Student's ratings on courses undertaken

With the student's responses it became clear that major portion of the concerned population uses tutorials or self-paced courses and students with average academics contributes the major part with total of 201 students and average rating 3.26, followed by students with good academics provided with 84 responses and average rating 4.56. Students with excellent academics provided average 3-star rating out of total 5. Students below average has given 3.94 and 4 star rating to tutorials and virtual classes respectively. Average students who undertook discussion-forums and boards rated 4 star on average. Average students show very little interest and has provide 2.6 star rating to other

e-learning modes. Also, the data shows that highest rating i.e. 5/5 is given only by average or below average students, these ratings are given only for platforms such as virtual classrooms and self-paced courses
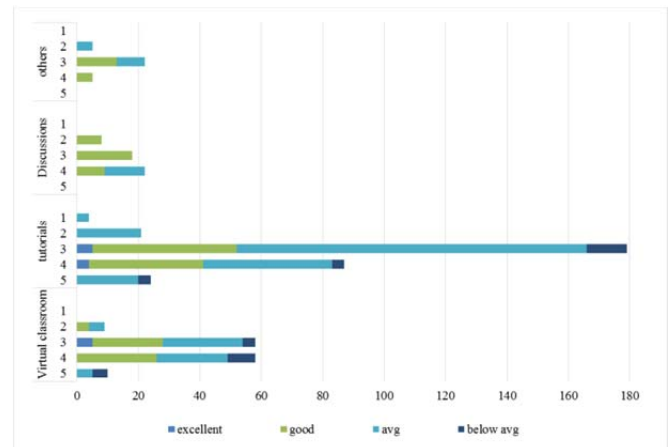

Fig. 8. Demographic for type of e-learning method and its ratings v/s student's academic rating

10. DISCUSSION

Survey results yielded facts which are important in understanding student's perception towards the e-learning. The data patters are further analyzed as below.

The analysis shows that majority of students are focused towards tutorials or self-paced learning and therefore this may be the reason majority of them finds that e-learning is better at saving time and money. Apart from this, good students have shown more interest in discussion forums as compared to any other category. These students are mostly those who have high computer literacy and find it easy to communicate through this platform.

Results shows that average students are the major consumer of the online courses or tutorials. What could be the possible reason behind this? This is because the generation is turning towards e-learning and the education delivered through this platform is effective in terms of quality and rate of delivery. Advantages of discussion forums are not exploited by the students and they should be made aware of the opportunity they bring with them.

The results on motivating factors are coherent with the results of Kiymet Selvi (Motivating factors in online courses Procedia Social and Behavioral Sciences 2 (2010) 819–824). Main advantage that students are getting from e-learning is that they can access to advance level resources. Such content is beyond curriculum and such a response from student suggests that, they wish to drill down the subjects of their interest. The second advantage is the time effectiveness of e-learning. College students often have eccentric working hours, and therefore they need access to resource when they call for it.

That is why they find e-learning asynchronous mode a click away.

The Success of learning goal is often hindered by many factors. On analysis, one can easily deduce that lack of motivation plays a critical role in impeding the learning from electronic platform. The providers can easily exploit this loophole by providing some inducement by incentives. Student's responses also demonstrate that they often find it difficult to find appropriate content to learn. Providers should model their course so that students from developing countries can easily understand the content and locate them with less trouble.

Student ratings clearly defines their satisfaction level corresponding to their e-learning experience. Excellent students has provided a neutral feedback with 3/5 rating. The average and good students seems to be very much satisfied with the tutorials and virtual classes. After all average students seek for the content easily available via tutorials which serves them quickly and thus they are satisfied with self-paced courses and provide 4/5 rating on average. Excellent grade students are seeking for more, than available which could sever their appetite for learning and according to current system falls short in this concern.

The above results can definitely play crucial in designing courses be it e-learning or traditional books, such that they can attract the students. The clear understanding of their perception is necessary in order to provide them right guidance with appropriate material so that they can ameliorate their knowledge.

11. CONCLUSION

This study shows the comparison of classroom and online learning. It shows the effectiveness of online education and student tenacity. Online learning is desegregated in present education system. The study shows different grade student and their satisfaction level with online education. This effort shows that through surveys, observations one can constantly determine and analyze demography of student which lead to more efficient online learning outcomes. We continue to improve and evaluate knowledge of efficient learning in online environment. Students will also apprehend this way of learning, they will grasp and acquire the benefits of this contemporary way of learning.

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