Traditional and Online Education and Preferences by the Students

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Abstract: With the increasing competition in the education system to survive in the race, it is becoming difficult to balance education as well as social life, resulting in a more stressful life. The aim of the study is to compare classroom teaching with online self studying for students so that they can attain competitive knowledge in less time with proper understanding. In this study, a sample of 20 undergraduate students, who secured 80 to 90 percent in 12th grade were chosen. The students were given classroom teaching for 2 hours on 1st topic and later were given 2 hours to study online on 2nd topic. After 4 hours, they were given Multiple Choice Questions based on the topics covered. In the other part of the study, the students were asked to assess both modes of studying, on the basis of (i) ease (ii) time (iii) understanding (iv) preference on a scale of 1-5. The results obtained for both parts of the study were sent for statistical analysis. It was observed that the mean performance of the students in classroom studying method was higher than the online studying method, and was statistically significant, at 0.05 level of significance. Also, the students in general rated high on ease and understanding for classroom studying method whereas they rated high on time and preference for online studying methods. Conclusions are drawn and suggestions for future study are proposed.

Keywords: Competition, Compare, Classroom, Online, Students, Preference.

Introduction

Teaching in the 21st century is riddled with technology that brings the ability to offer students anytime, anywhere performance possibilities for course work. But is this flexibility in an online delivery format as efficient as the traditional face-to-face learning experience? As the trend toward online education intensifies, it leaves in its wake a series

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of questions that remain unanswered regarding the overall efficiency of these online courses versus their in-class (i.e. offline) counterparts. Research comparing online versus face-to-face learning is mixed, with results ranging from online superiority to no difference to face-to-face superiority. Many results can be traced to sample or method differences.

Scholars have laid ingots of evidence suggesting there is no difference in online versus offline student performance based on student demographic characteristics (Huh, et al., 2010). In evaluating student performance based on student completion rates of materials, Olson (2002) found insufficient evidence to indicate that online versus offline delivery is a factor influencing a student's completion of his or her coursework. Others found lower student performance in online classes (e.g., Trawick, Lile and Howsen, 2010), while some even found higher learning in an online format (e.g., Detwiler, 2008). As technology continues to braid its way into all teaching and learning methods, investigations reveal a consistent use of the term "performance." Performance appears ubiquitous, unless otherwise stated by investigators, as "assessed at the end of the course" by the student's "final mark," otherwise known as the course grade (Bliuc et al., 2010; Olson, 2002). Other means of defining student performance include using student test scores or other graded items (e.g. discussion boards, homework) as a variable (McFarland and Hamilton, 2005; Rivera and Rice, 2002). The term "performance", unless otherwise indicated by the investigator, tends to indicate a grade achieved by the student irrespective of whether student performance is a course grade or an item grade.

This paper tends to focus on a group of students assessed on their performance based on using online and classroom teaching of theoretical concepts and applying a new approach to analysis. In this study an attempt has also been made to assess the students' preference over classroom or online studying method.

Methodology

The study was conducted in the Department of Social Work, University of Lucknow. In this study twenty students were chosen and assessed for classroom and online study. The sample so selected was purposive in nature. The sample comprised of twenty undergraduate

students who had secured between 80-90 percent in their intermediate level. The students were given a classroom teaching on "operant conditioning theory" for two hours. A break of thirty minutes was given to the students, after which they were given access to the internet for two hours to study "Classical conditioning theory". On completion of the time allotted the students were given 10 multiple choice questions equally distributed amongst both the topics. For every correct answer 1 mark was awarded and a negative marking of 1 mark for an incorrect answer was kept as a criteria. At the end of the examination the answer sheets were evaluated and the marks obtained are shown in Table-1 and the results were evaluated on the basis of readings.

Table-1 Marks Obtained by the Students in the MCQ's

Student No.	Classroom Studying	Online Studying
Student 1	3	2
Student 2	5	3
Student 3	4	4
Student 4	2	1
Student 5	5	2
Student 6	3	2
Student 7	2	3
Student 8	1	2
Student 9	4	3
Student 10	3	1
Student 11	5	5
Student 12	4	2
Student 13	3	1
Student 14	3	2
Student 15	2	2
Student 16	1	4
Student 17	1	3
Student 18	3	2
Student 19	4	2
Student 20	4	1

Post evaluation under the second part of the study the students were asked to rate the classroom and online studying method on a scale of 1-5 on the basis of ease, time, understanding and preference.

The students were given sheets and asked to record their markings for both the studying methods separately. 1 score was for the lowest ranking while 5 score was for the highest. They did not represent any determined specific numeric value but were arbitrary numbers chosen for the scale. They were given a time period of 15 minutes for the same. After this, the sheets were collected and the scoring was recorded in a tabular form both for the classroom studying and online studying methods. The tables were divided into two groups, Group A for classroom studying method and Group B for online studying method.

Table-2 Group A: Classroom Studying Method

Student No.	Ease	Time	Understanding	Preference
Student 1	3	2	4	4
Student 2	3	3	2	4
Student 3	2	1	4	2
Student 4	3	1	4	3
Student 5	4	2	3	3
Student 6	2	3	2	3
Student 7	4	3	2	2
Student 8	2	1	3	3
Student 9	2	3	4	1
Student 10	3	2	3	4
Student 11	1	2	2	2
Student 12	2	2	1	4
Student 13	4	1	4	3
Student 14	3	3	4	4
Student 15	5	1	3	1
Student 16	1	3	4	3
Student 17	4	2	2	1
Student 18	3	4	2	3
Student 19	3	3	4	3
Student 20	3	1	3	3

The results obtained were arranged in tabular form and are shown in Table-2 and Table-3. The results for both the parts of the study were obtained using T-test for independent variables. The hypothesis so chosen was a null and directional hypothesis for the first part of the study. For the second part of the study, since it was comparative in nature, an objective was chosen for the same.

Table-3 Group B: Online Study Method

Student No.	Ease	Time	Understanding	Preference
Student 1	4	2	3	1
Student 2	2	4	3	4
Student 3	3	3	1	3
Student 4	2	5	2	3
Student 5	2	2	2	2
Student 6	2	3	3	3
Student 7	4	3	2	5
Student 8	3	3	4	4
Student 9	3	4	2	3
Student 10	3	5	3	3
Student 11	4	2	4	1
Student 12	3	3	3	4
Student 13	3	2	3	4
Student 14	2	3	4	2
Student 15	4	2	4	1
Student 16	4	2	2	5
Student 17	2	3	2	3
Student 18	1	2	3	1
Student 19	3	2	3	4
Student 20	1	2	2	1

Hypothesis (H_0): There is no difference in performance in classroom studying and online studying methods amongst students.

Hypothesis (H_1): There will be difference in performance in classroom studying and online studying methods amongst students.

Objective: To compare factors in relation to classroom studying and online studying.

Results

In the first part of the study, the marks obtained by the students (Table-1) were analyzed using descriptive analysis and t-test with independent variable to highlight the significance of the study done.

Table 4: Analysis of the Marks Obtained

TMethod cd	Mean	Std. Deviation	Std. Error Mean	t	p
Classroom	3.10	1.294	0.289	1.983	0.05
Online	2.35	1.089	0.244		

The mean performance of students in classroom studying was higher than online studying methods. The difference between the 2 means was examined using Independent sample t-test, the t-test value was 1.983, $p< 0.05$. Hence, H_1 is supported. It can be inferred that there is a statistical significance between 2 studying methods.

In the second part of the study, the scoring given by the students on the basis of ease, time, understanding, preference (Table 2 and 3) was considered separately for concluding the result (Table 5 and 6).

Table 5: Mean of the Factors

Method	Ease	Time	Understanding	Preference
Classroom	2.85	2.15	3.00	2.80
Online	2.75	2.85	2.75	2.85

Table 6: Analysis of Factors based on T-Test

Factors	T	P
Ease	0.315	0.754
Time	2.303	0.027
Understanding	0.865	0.393
Preference	0.133	0.895

Based on holistic overview, the students presented a natural trend on the factors in education system. Students in general rated high on ease and understanding for classroom studying whereas they rated high on time and preference for online studying methods. A statistical significance was observed between classroom studying and online studying methods in relation to time.

Discussion

The results based on the marks obtained by the students in the MCQs indicated that there is better performance of the students in the classroom studying as compared to online studying. The students felt grasping of the topic was more in classroom studying as there was more scope of clarity of doubts and attentive gaining of the knowledge. The students mostly were able to answer questions from the classroom studying topic when compared to online studying topic. The second part of the study highlighted that there is a bent of students based on factors of ease and understanding for the classroom studying

method. This can be largely attributed to the fact that more clarity and understanding of the concept is gained while studying in classroom. There is also direct clarification of any doubts or possible queries which are not possible in online studying. There is more focused and undivided attention of the students in the class as the surroundings are same for all. Also, fixed time slots help in keeping a determined schedule of the students and outlining their activities. While some students gave a higher rating for time and preference to the online studying method as it is convenient and largely helpful for those people who want to pursue jobs or are married or running business and cannot afford to give time in classrooms.

Comparison of online versus offline learning is no doubt of substantial interest to educators and the focus of numerous studies. As preference for online learning increases, mostly due to the convenience and flexibility it offers students, universities find themselves increasing the number of online format courses to meet the growing demand. However, the question remains whether the delivery format of a course, i.e. online versus offline, impacts student performance, their satisfaction and learning.

Online education as a means of course delivery has proliferated in the last decade. While there is evidence that the achievement of online students is significantly higher than the achievement in classes taught in traditional classes (for reviews see Means, et al. 2010; Shachar and Newman, 2003), the interpretation of this finding is open to some question. Many previous studies were not able to control for selection effects. It is plausible that the more industrious, married, mature, older, self motivated students are more apt to select online classes than their counterparts as was found in a study of microeconomics classes (Gratton-Lavoie and Stanley, 2009). Bray, Harris and Major (2007) call for investigations that randomize students into online vs. offline sections.

Learner's Satisfaction and Benefits

One key factor of education is the motivation of learners. Multiple experiments have been made to measure the satisfaction of students and its influence on participation. Furthermore, multiple authors have

conducted studies to compare the satisfaction of learners using online resources with learners who are taught in a classroom.

Various factors can be associated with the increasing likeness for the online studying method. Some of them are highlighted below:

- Ease of use of the application of software
- Computer skill
- Interaction with fellow students and instructors
- Flexibility of the medium
- Motivating aims
- Time and location flexibility
- Self-paced learning process
- Unlimited access to material

Interaction

An important component of classroom learning is the social and communicative interactions between student and teacher, and student and student. A student's ability to ask a question, to share an opinion, or to disagree with a point of view are fundamental learning activities. It is often through conversation, discourse, discussion, and debate among students and between instructors and students that a new concept is clarified, an old assumption is challenged, a skill is practiced, an original idea is formed and encouraged, and ultimately, a learning objective is achieved. Online learning requires adjustments by instructors as well as students for successful interactions to occur. Online courses often substitute classroom interaction with discussion boards, synchronous chat, electronic bulletin boards, and e-mails. The effectiveness of such a virtual interactive venue is not without debate. Student-to-instructor and student-to-student interactions are important elements in the design of a Web-based course (Fulford and Zhang, 1993; Kumari, 2001; Sherry, 1996) because learners can experience a "sense of community," enjoy mutual interdependence, build a "sense of trust," and have shared goals and values (Davies and Graff, 2005; Rovai, 2002). Some scholars suggest that interaction in an online environment promotes student-centered learning, encourages wider student participation, and produces more in-depth and reasoned discussions than a traditional classroom setting does (e.g., Karayan

and Crowe, 1997; D. Smith and Hardaker, 2000). Interaction in an online environment is less intimidating between individuals and also has less time pressure on students than does interaction in a face-to-face setting (Warschauer, 1997). Online discussions also can encourage more reticent students to participate to a greater extent (Citera, 1988). However, the advantage of online interaction may not be realized if close connection among the learners is absent. Haythornthwaite and colleagues (2000) found that students who failed to make online connections with other learners in their group reported feeling isolated and more stressed. McConnell (2000) provides a comprehensive comparison of the differences between online and face-to-face learning. Important differences related to interaction in the two modes of instruction are adapted in Table 7.

Table-7 Important Differences related to Interaction in the Two Modes of Instruction

	Online	Face-to-Face
Mode	Discussions through text only; Can be structured; Dense; permanent; limited; stark	Verbal discussions: a more common mode, but impermanent
Sense of Instructor Control	Less sense of instructor control; Easier for participants to ignore instructor	More sense of leadership from instructor; Not so easy to ignore instructor
Discussion	Group contact continually maintained; Depth of analysis often increased; Discussion often stops for periods of time, then is picked up and restarted; Level of reflection is high; Able to reshape conversation on basis of ongoing under-standings and reflection	Little group contact between meetings; Analysis varies, dependent on time available; Discussions occur within a set of time frame; Often little time for reflection during meetings; Conversations are less likely being shaped during meeting
Group Dynamics	Less sense of anxiety; More equal participation; Less hierarchies; Dynamics are 'hidden' but traceable; No breaks, constantly in the meeting; Can be active listening without participation	Anxiety at beginning/during meetings; Participation unequal; More chance of hierarchies; Dynamics evident but lost after event; Breaks between meetings; Listening may be frowned upon; Medium (room) may have less impact; Certain expectations about participation; Quicker, immediacy of interactions or discussions
Rejoining	High psychological/emotional stress of rejoining	Stress of rejoining not so high
Feedback	Feedback on each individual's piece of work very detailed and focused; Whole group can see and read each other's feedback; Textual feedback only; No one can "hide" and not give feedback; Permanent record of feedback obtained by all; Delayed reactions to feedback; Sometimes little discussion after feedback; Group looks at all participants' work at same time	Less likely to cover as much detail, often more general discussion; Group hears feedback; Verbal/visual feedback; Possible to "free-ride" and avoid giving feedback; No permanent record of feedback; Immediate reactions to feedback possible; Usually some discussion after feedback, looking at wider issues; Group looks at one participant's work at a time
Divergence /Choice Level	Loose-bound nature encourages divergent talk and adventitious learning; Medium frees the sender but may restrict the other participants (receivers) by increasing their uncertainty	More tightly bound, requiring adherence to accepted protocols; Uncertainty less likely due to common understandings about how to take part in discussions

Source: Adapted from McConnell (2000)

Student Performance

Student performance is a multidimensional concept; successful completion of a course, course withdrawals, grades, added knowledge, and skill building are among some of the aspects. Nevertheless, researchers have been interested in differences in performance between the two modes of instruction. McLaren (2004) found significant differences in persistence between the two instructional modes, though no significant performance difference was noted as measured by the final grade. Carr (2000) reported dropout rates as high as 80 percent in online classes and suggested a rule of thumb that course completion rates are often 10 to 20 percent higher in

traditional courses. This result can be attributed to the demographic that distance education students are frequently older and have more life obligations. It also can be attributed to the mode of instruction itself, because online classes are often viewed as easier to drift away from or sever ties with. Comparable performance findings were identified in different academic curriculums. Moore and Thompson (1990, 1997) reviewed much of this type of research from the 1980s through the 1990s and concluded that distance education was effective in terms of achievement of learning, attitudes expressed by students and teachers, and return on investment (1997). Harrington (1999) compared classroom and online statistics instruction for master's-level social work students and suggested that students who previously have been successful academically can do just as well with a distance learning approach as can students in a traditional classroom course. Thirunarayanan and Perez-Prad (2001), in their study of education programmes, found that although the online group scored slightly better than the campus group on the class post-test, the difference in performance was not statistically significant. L. Smith (2001) compared instruction in an MBA marketing planning course, providing descriptions of the differences needed in the two environments to achieve the same learning objectives. McLaren (2004), in comparing performance measures of an undergraduate business statistics course, provided evidence that the final grade for students who successfully completed the course is independent of the mode of instruction. Despite the proliferation of literature, performance measurement for online instruction is quite difficult and often problematic. For example, Brown and Wack (1999) point out the difficulty of applying a clinical experimental design to educational research and suggest the efforts to compare distance and conventional courses and programmes are problematic, especially as distance and campus programmes and populations are increasingly integrated.

Within the limited amount of original Comparing the Effectiveness of Classroom and Online Learning 2004 Journal of Public Affairs Education Research, three broad measures of the effectiveness of online education are usually examined: (a) student outcomes, such as grades and test scores; (b) student attitudes about learning through distance education; and (c) overall student satisfaction

toward distance learning. Such research studies have often demonstrated weak designs, especially in control of the populations under comparison, the treatment being given, and the statistical techniques being applied (Moore and Thompson, 1990). A study by Phipps and Merisotis (1999) found that several key shortcomings are inherent within the original research on the effectiveness of online learning, including no control for extraneous variables (and therefore no demonstrable illustration of cause and effect), lack of randomization for sample selection, weak validity and reliability of measuring instruments, and no control for any "reactive effects." It is important to note that, despite the proliferation of literature on online learning, there is a relative scarcity of true, original research dedicated to examining online learning effectiveness.

Conclusion

With this research work, it was concluded that there is a significant difference in the level of performance by the students based on classroom studying and online studying methods. Though the younger generation is hooked onto the VIRTUAL world, they are realizing the importance of studying in classrooms which not only helps in attentive grasping of the knowledge but also gives a major boost to the all-round development of the student. Discussion with peers and teachers is a major factor in clarification and retention of concept, apart from also helping in socializing with the REAL existent world. The study also concluded that there is a natural trend seen among the students, for their ease of grasping knowledge and understanding the core and basic concept, which is essential for clarity of knowledge, to the classroom studying method. However, a rising trend was also seen for time and preference by the students for the online studying methods, since it can be done as per the convenience of the students and does not require long segments of time consumption in attending classes. The implications of this effect can be seen as more and more universities are coming up with smart classes and online oriented studying methods. Also, there has been an increase in the number of online courses being offered by the universities, keeping in mind the need of the hour and to cater to the demands of the people. However, the number of students opting for classroom courses cannot be understated as they are slowly regaining

their preference over the online courses. Still a lot of deeper study and analysis needs to be done, to figure out the ideal method, and whether anyone method can undermine the other or a combination of both is necessary to meet the needs of the upcoming generations.

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