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Some New Initiative in Active Learning and Teaching

Dr. Nahid Fatima

Associate Professor, Prince Sultan University, Riyadh

Abstract - The goal of the study was to demonstrate how the digital revolution has had a significant impact on education, as well as many other sectors. The related effects have resulted in significant changes in the recognized teaching and learning methods in the sphere of education. When compared to previous generations, today's pupils have very different features, and their expectations have been adjusted accordingly. As a result, traditional teaching methodologies are finding it increasingly challenging to pique students' interest and curiosity in learning activities.

In the digital age, learning may take place at any time and from any location. Learning that takes place outside of these physical and temporal constraints should be on par with, if not better than, traditional classroom learning. Furthermore, using outdated methods to solve various difficulties in teaching and learning is difficult. In this sense, today's educators are very interested in creative teaching methods that address the needs of this generation. Discursive Dimensions of Learning and Cognitive Dimensions of Learning are two of these techniques. We have introduced strategies such as flip class room, blended learning, ICT etc. to monitor achievement of students, expand and enhance mental approach. and improve accuracy by increasing the feedback loop between assessment and learning.

Index Terms - Cognitive Dimensions of Learning, blended learning, Digital technologies, Flipped class rooms.

INTRODUCTION

New technological advancements have made it possible to make certain adjustments in the way we approach teaching and learning. Technology can be helpful with change, and thus, it can also be employed in more traditional ways.

The communication and knowledge architecture of a traditional classroom is based on a top-down flow of information from the teacher's desk to the students. For all phases, communication is established between the teacher and the individual students (information delivery, assessment, feedback). This environment does not promote student communication or cooperation.

I. Flipped Class Room

The flipped classroom is a teaching method that reverses the typical teaching style. The lecture (information delivery) takes place in the classroom with the teacher, while the exercises (information processing) take place at home with homework and exercises. The lecture (information delivery) occurs at home in the flipped classroom, where students engage the new content individually. Exercises and group work take up the majority of their time in the classroom (information processing). Teachers can now utilize this paradigm more easily thanks to modern technologies. Lectures can now be videotaped, and materials are available online for students to watch, read, or listen to at their leisure.

II. Active Knowledge Making

Learners must be actively involved and held accountable. Horizontal partnerships are promoted. The emphasis shifts away from cognition and memory and toward knowledge presentation and representation.

III. Multimodal Meaning

Making use of new media resources, learners nowadays can link text, graphs, tables, datasets, video documentation, audio recordings, and other media using digital platform. Digital production skills and technology are now supporting and enhancing meaning making and knowledge representations across all topic areas.

IV. Cognitive Dimensions of Learning

Learners are forced to reflect metacognitively about the nature of the job and the cognitive processes of the field as a result of this. Learners must progress from empirical and experiential understanding to pattern recognition and theory formation — metacognition is critical in this regard. Learners must be aware of their strengths and shortcomings and modify their learning practices in order to maximize their time and effort and contribute meaningfully.

It is quite a bit unusual for few parents and teachers today to see increasing interest of youngsters in advance technologies such as computers, tablets PCs, smart phones and other comparable technologies. One of the most important reasons for the discrepancy in the views and experiences of digital immigrants and digital natives is the current digital revolution, which has had a profound impact on our lives, as well as the new conditions that have resulted. Following the industrial revolution, the digital revolution is often regarded as one of the most significant changes that has had a profound impact on humanity. This fundamental shift can be seen in a variety of sectors, including pedagogy, sociology, psychology, the economy, and society's culture.

According to Drucker (1994), the most significant change in this process will be in the area of information, which includes the structure, substance, meaning, and relevance of information.

As a result, the digital revolution restructures and transforms society's educational systems, as well as eliminating a number of unpopular beliefs (Toffler, 1996). This revolution, which has resulted in a profound shift in global learning systems (Prashar, 2015), highlights the importance of updating and rethinking the architecture of the teaching and learning environment, the roles of teachers and students, and the educational technologies utilized (Kuhn, 2003). It is vital to make educational activities more efficient by retaining past achievements while meeting the needs of the period we live in. Reorganizing the teaching and learning environments is one way to accomplish this goal. According to H. Dumont, D. Istance, & F. Benavides (eds.) (2010), it's critical to understand what pupils already know in order to suit their learning needs. Using digital evaluation tools like online testing and digital portfolios is one of many formal and informal methods to do this. These produces a wealth of information which can be collected over a period of time.

V. Benefits of using digital assessment tools

According to a recent report (JISC, 2010), employing digital technologies for evaluation, as outlined below, provides the following advantages:

communication and dialogue: while transcending time and space, online contact via forums, blogs, email, and voice boards can enrich feedback and assist clarify learning goals and standards.

contingency and immediacy: for learner-led, on-demand formative assessment, interactive online assessments and handheld tools (such as voting devices and internet-connected mobile phones) can be employed.

legitimacy: students can practice real-world skills and experience both success and failure using online simulations and video technology;

self-directed learning: students take responsibility of their learning and develop higher-order thinking skills, which improve their performance through peer assessment, evidence collection which reflect on their achievements;

VI. Online assessment tools

Today we can get real time feedback from the technology (such as computer) and other online assessment tools from either the system or the instructors. On-demand assessments give teachers and students the freedom to take them when it's convenient for them. Students can assess their own preparedness, repeat examinations as needed, and use the results to enhance their studies because these evaluations are available at any time and can be accessed from any location. Teachers can save time by using on-demand assessment technologies because most types of test questions are automatically marked and student outcomes can be evaluated through several forms of reports. Since most of the test paper are marked automatically and the students are able to access the results through the various of reports, this has helped teachers save a lot of time. Additionally, students also gain from getting instant and results, which in turn can be used to help them learn by encouraging, motivating, and supporting them.

VII. Portfolios or e-portfolios

User now a days can store variety of data files such as text file, audio (wav, aiff etc.) and video portfolios (mpeg, mp4, mov) on Portfolios, also known as e-portfolios. These show what the user have achieved over a period of time (Maher & Geber, 2009). The learner can easily control these documents for a variety of purposes including documentation. It is quite beneficial for all age learners.

One of the benefits of portfolios is the large amount of information students may save and display to numerous audiences at any given moment to demonstrate their progress and achievements.

It is not mandatory for the Portfolios to include each and every piece of work which is produced by a student. The learner with the help of teachers and parents can individually set a goal and audience for their portfolios and showcase achievements by selecting a set piece of work.

Victorian schools have a long history of integrating digital resources in the classroom for teaching and evaluation. Virtual classrooms, social networking software, the internet, email, and video conferencing are among the things that teachers say they utilize with their students to help them improve abilities.

VIII. Teaching, learning, and feedback

Teachers play a crucial role in supporting and monitoring student learning, and our understanding of the critical relationship between feedback and learning has grown over the last decade. Feedback, according to Hattie (2009), is the most effective single influence on accomplishment, and not just from teachers to their pupils. Teachers are being offered more opportunities to receive real time feedback on their teaching techniques. This in turn has a more cascading action on the students.

IX. Significance of Our Study:

We studied over 200 students, both male and female. These students were doing B.Sc. in India and out of 200, 100 students were using ICT for various assessments, learning and teaching. The result showed that

When using ICT, teachers were evaluating deeper topics.

The teachers are having more time to assess student’s work as the student took charge of their own learning;

students were encouraged to reflect so that they may review and improve their output, such as podcasts; Frequently enabled feedback technologies such as student response systems and to monitor students' performance like digital stories have proven to be effective in progressing outcomes;

X. Research Methodology:

We studied 200 Students during 2020-21 both male and female. These students are doing B.Sc. in India and we are dividing these students into two groups for the same subjects. One group (G) is for traditional class room teaching and other (H) is for all new active learning such as digital technologies, ICT, and flipped class rooms etc.

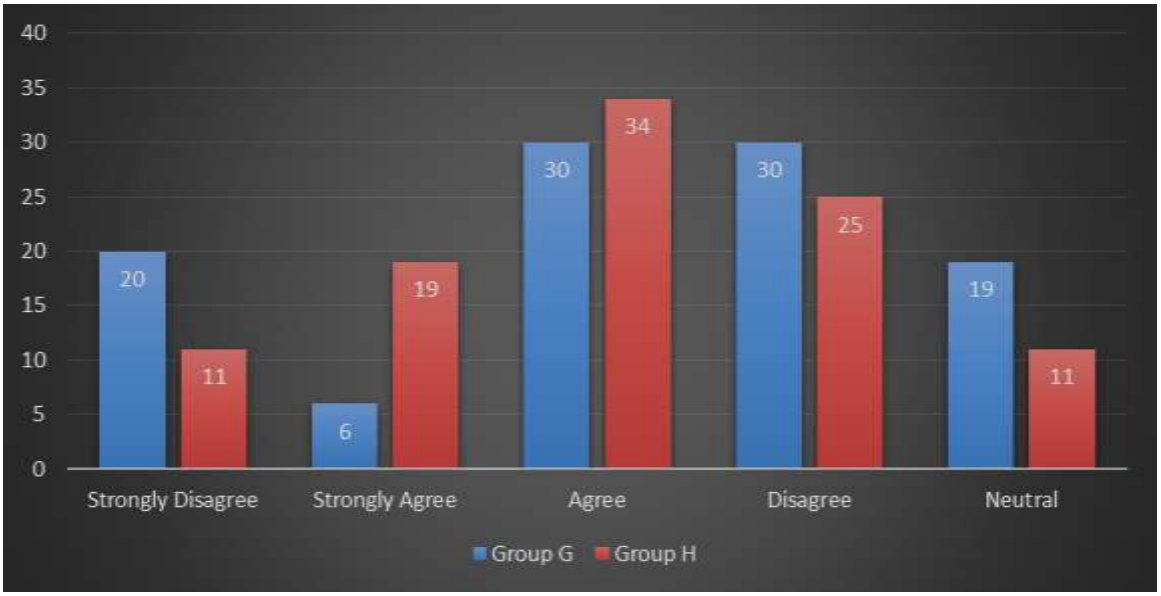
We employed a survey questionnaire, one for traditional class room teaching and one for new active learning to collect quantitative information from the students group.

XI. Survey Results:

Comparing the survey result of both groups and combining the percentage of strongly agree and disagree, we have found that Group H participants, were more satisfied as compared to Group G.

Groups Responses	Strongly Disagree	Strongly Agree	Agree	Disagree	Neutral
Group - G (%)	20	6	30	30	19
Group - H (%)	11	19	34	25	11

We can see that Group H is more agreed (53%) as compared to Group G which is 36%, and this shown in the graph below:



CONCLUSION

The universities, schools and other vocational education and training institute around the world are using technologies in the digital advancement to modernize evaluation process. Some of the benefits include new approaches for awarding student success, extending and refining psychometric theory, thereby raising the feedback loop between assessment and learning, and improving accuracy.

Parents/guardians can access the Ultranet at any time to check on various activities in the class and track their children's development and get real time feedback from the instructor. Since they have continuous access to the Ultranet, the parents can now easily discuss their children concern with the instructor and thereby encourage their children's growth.

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