

Pedagogies and practice: online teaching during COVID-19

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Abstract

At this pandemic situation worldwide, most of the Universities are offering online teaching as an alternative of face-to-face study through Technology-enhanced learning (TEL). To ensure pedagogies and practice for online teaching, we have chosen and critically analyzed the theory “Seven principles for good practice in undergraduate education” by Chickering and Gamson for effective online teaching that researchers highly appreciated. Based on two case studies of two different UK universities and research review, we have also proposed recommendations to implement these seven good practices for online teaching. We have realized that there should be different group discussion forums like café, forums, a conference to engage students to share their ideas, justify their ideas with reliable sources, and finally, reflective thinking and writing, which is essential for learning. Wiki is a good example for group working where everybody shares their ideas about Seven Principles of good practices, then we moderated poster contents and finally prepared the poster the product of knowledge.

Keywords:

E-learning; online teaching; pedagogy; virtual learning environment; technology enhanced learning.

1 INTRODUCTION

Because of COVID-19 issues most of the higher education institutes worldwide have started to offer online learning and teaching. However, this approach's most important challenge is to ensure proper utilizations of Virtual Learning Environment Like Moodle, Blackboard, Canvas, etc. along with Live virtual lecture delivery software like Zoom, MS Teams, and Cisco WebEx etc. It is also important to ensure the quality of academic standards and a better learning experience for online learning and teaching. There are different types of theories for effective face to face delivery of learning and teaching of which Chickering and Gamson (1987) is one of the best theories that has given a clear guideline about how to ensure pedagogies in Undergraduate Education. That is why this paper's researcher has chosen an effective way to apply this theory for the effective delivery of online education.

“Seven principles for Good practice in Undergraduate Education” by Chickering and Gamson is one of the milestones to ensure pedagogies in undergraduate education for face-to-face study. However, during this COVID-19 pandemic most of the higher education institutes are offering online education in UK and other parts of the world but the major concern is the academic quality assurance and pedagogies for effective online teaching. In this research we have critically investigated “Seven principles for good practice in undergraduate education” by Chickering and Gamson and have applied all the seven principals using technology enhance Learning (TEL) for effective online teaching that may be useful for other academic institutes all over the world. We have also proposed to use this integrated method of online teaching and delivery for both online and on campus education. Two case studies of the London based universities have been used to support our proposal and data collection and analysis have been used for justifications of our proposed research.

Although Chickering and Gamson introduced seven principles for good practice in undergraduate education during 1984 but during our research activities we realized that these seven principles are basic to achieve learning objectives of any disciplines like technology, arts, commerce, or even medical science. Even for online education, these seven principles are applicable. According to Billings (2000) the Seven Principal Framework (SPF) best suits the principle and practice while designing and developing the delivery instructions that are sourced and internet-based but the main challenge for online teaching will be the effective use of online technology with suitable method and instructions. Finally, during the research and investigation of those two case studies, researchers have successfully implemented seven principles of Chickering and Gamson's Good practice using virtual learning environment.

2 LITERATURE REVIEW

2.1 Access Motivation and Socialization

Student faculty contact and cooperation among students are the first two principles. At the beginning of the teaching news forum, Lets share, our café, introduction forum, learning online forum, consider your learners forum, general conference forum have been created by lecturer's for different types of communications and sharing information. These forums have created the opportunities operate each other. Using theses forums, we have introduced ourselves which has helped us to know our background, qualification, and interests. We believe knowing the learners is also important for lecturers.

In our virtual learning environment lecturers have uploaded lecture materials where we have seen Salmon's (2011) 5 stages model of online learning which has a close relationship with 7 principles for Good practice by Chickering and Gamson (1987). Access–Motivation and Online Socializations are the first and 2nd steps of Salmon's 5 stages which are important for us specially socialization is challenging as for example: 11 students enrolled in this module but so far during group activities for the conference only 6 students took active parts which seems to form a single group.

For online socialization cooperation is essential and the key points of cooperation among learners is aligned with their constructive activities and concept (Svinicki, 1999). To generate effective understanding about learning objectives

students, need to have facilities to demonstrate their peer learning abilities through learning sensors, including active listening and language participation. Students also need to be engaged in problem-solving activities exercises which will help them to apply their acquired skills (Millis & Cottrell, 1998). To provide these facilities in Moodle for our conference our lecturers have created 7 forums and they have started discussion which we have just carried on. Even to be socialized lecturers have sent email to us with instructions.

We think another principal respect talents and ways of learning is also closely related with online socialization. Students bring a diverse range of academic talents, preferences, and experiences to instructional environments. For example, when our students of our group introduced themselves, we were really amazed to see that 6 group members are from about 4 different countries and our two respected teachers are also from 2 different countries, a perfect example of classroom with multicultural teachers and students. At the beginning we were really worried about how to become friend with them. Fortunately, at the university we had training about “Diversity at Workplace” which was helpful for us. First paragraph.

2.2 Information sharing, Knowledge construction and Development

Although it was bit late to be active in group, but active learning is one of the most important point of 7 principles. At the beginning we tried to post some views at different forums but without getting response that much because we were bit late and our group members were busy to participate at wiki. Our colleague advised us to take part at wiki for poster development. We started to share our concept about Poster's contents and images and really enjoy cooperation of our friends. The manual and account login information provided by Mike was also helpful. According to Giguere and Minotti, (2003) “When Internet-based teaching experts suggest that active learning and collaboration are supported through learner-centered curricula that encourages discovery learning through the use of authentic instructional activities and interactive communities of learners” which was proved to be true for us.

From the group activities it was realized that feedback has a big impact for active participation. Feedback also guides us to share knowledge in proper direction. Especially prompt feedback can increase learner self-efficiency, which has been identified by Schunk's (1983) research. Feedback that I received from our colleagues or Lecturer s through different discussion boards was helpful for me.

2.3 Time and Task

Time on Task is very important for learners. According to Lent, Brown, & Larkin, (1984) “Improved learner self-efficacy is necessary for supporting the principle of time on task because students who are confident about their skills maintain the academic persistence necessary for high levels of academic achievement”. As for example Toufik and Bindu are working with us. At this moment all of us are delivering Lectures for about 18 hours weekly moreover we are engaged to supervise dissertation students at different level. So, it was difficult for us to manage time for our online activities and assignments. Sometimes, whenever we met, we discussed how to become more active as a learner and finally managed to prepare our Poster on time. But we realized that scheme of works and time management systems of Moodle are helpful for online learning.

Normal paragraph.

3 METHODOLOGY

This research's main goal is to critically analyze the adaptation of the theory “Seven principles for good practice in undergraduate education” by Chickering and Gamson (1987) for effective online delivery of milestones to ensure pedagogies in undergraduate education for face-to-face study. We have considered that case study methods remained a controversial approach to data collection, however, after considering its wide range of validity in many social science studies especially when in-depth explanations of a social behavior we have decided to choose case study as our research methods. This article has used two distinct case studies from two different university perspectives to create a relative study. To support our research and investigation we have designed questionnaire to collect data from our students. Because of limited number of learners of the disciplines, questionnaire has been designed based on qualitative data collection method. Data has been analyzed to get the perceptions of learners about effective online delivery of modules. However, to ensure our research and findings' accuracy, we have also applied data triangulation methods by mapping our research findings with similar research and case studies of other researchers.

4 FINDINGS

Being a Lecturer, Module Leader and Academic Coordinator, we have reflected our experience and investigation as case studies for all universities. The authors have discussed the findings of using E-learning tools for these two types of students interesting for this research.

4.1 Case Study One

Group Learners: B.Sc. Applied Computing (Level 4,5,6) and M.Sc. Applied Computing.

Method of Teaching: Face to face teaching with formative and Summative assessments.

Supporting E-Learning Tool: Moodle.

4.1.1 Characteristics of students

Fresh International students from different backgrounds and societies. Most of the Level 4 students are familiar about hardware and software. But as a beginner they were unable to design website and they have no idea about how to do

blogging of collaborative education. They are also unable to learn by studying book. Level 5 students have basic skills of IT but still not familiar about collaborative learning or Podcast. Level 6 students are fine with all except collaborate learning and podcast. M.Sc. students are also like level6 student just they are not familiar with collaborative learning or podcast. Besides some students of Level 4 are weak at Academic Technical Writing.

Table 1. Learning comforts levels

	Our comfort level	Our students' comfort Level 4	Our students' comfort Level 5	Our students' comfort Level 6	Our students' comfort Level 7
Learning based on reading text	√	X	√	√	√
Learning through collaboration	√	X	X	X	X
Contributing a blog	√	×	√	√	√
Creating a Web page	√	×	√	√	√
Downloading music from the Web	√	√	√	√	√
Listening to a podcast	√	X	X	X	X
Using instant messaging	√	√	√	√	√
Using presentation software (e.g., PowerPoint)	√	√	√	√	√
Searching the web / on-line databases	√	√	√	√	√

4.1.2 Advantage of E-learning Technology

According to UKVI (United Kingdom Visa and Immigration) regulation International students are bound to take at least 15 hours face to face classroom-based study. These students need to work 20 hours to survive in London and meet their educational expenses. So, we are getting those about 2 days on average in the classroom. So, rest of the five days these students require teaching and learning support at their convenient time. The answer is use of E-learning tools like Moodle to facilitate their learning needs. There is no doubt that only E-Learning Technology can provide learning needs according to individual needs when the students are out of the classroom. There may be some other solution like Ivan arrange a workshop and seminar presentation every month at their convenient time. 2/3 hours seminar or workshop may be very useful for them or we can arrange an online class using adobe connect.

4.1.3 Major barriers of implementation of e-learning

According to our findings E-learning tools are excellent to support classroom-based study. Besides classroom-based face-to-face study, if we could use E-learning technology like Moodle or Blackboard, it will meet 100% needs of the learners. But the main challenges or barriers are as follows:

4.1.3.1 For lecturers

- Lack of technical knowledge about using E-learning tools of Moodle, Blackboard.
- Lack of knowledge about facilitating online learning resources for learners needs.
- Lack of knowledge about suitable interactive communication techniques from VLE or alternative of VLE other than Moodle/Blackboard for example MOOC, WIKI etc.
- Lack of knowledge about rules and regulations and netiquette of online education
- Lack of concentration about BCS, IEEE, ACM Code of ethics or code of conduct which are essential for IT professionals.

The solution for above major barriers on e-learning implementation for lecturers are as follows:

- Arranging workshop/seminar to introduce technical feasibility of E-learning technology like Moodle, blackboard.
- Arranging teachers training session about how to facilitate learning resources for students.
- Arranging discussion/ meeting about online interactive communication
- Awareness about ground rules, netiquette, health, and safety regulation etc. which we signed at the beginning of our contact for online teaching. Even there should be a mandatory exam as “Diversity in Workplace” which everyone also took before online teaching.
- It is mandatory that all IT professionals or Lecturers be the IT professional association members for developing their knowledge and code of conduct or ethics.

4.1.3.2 For students

- Lack of knowledge about tools and techniques of E-learning technology.
- Lack of communication techniques
- Lack of knowledge about learning resources

- Lack knowledge about rules and regulation for VLE

The solution for above major barriers on e-learning implementation for students are as follows:

- Arrange of workshop seminars during induction about effective use of VLE
- Special training to enhance online communication techniques between students and teachers and among students
- Awareness about ground rules of VLE

4.2 Case study two

Group Learners: MBA, BA (Hons) and Certificate in Higher Education.

Method of Teaching: Online teaching with formative and Summative assessments.

Main E-Learning Tool: Blackboard, Blackboard Collaborative, Moodle, and Microsoft Team.

The teaching was seriously challenging as this course were completely based on E-Learning Technologies.

4.2.1 Characteristics of students

Most of the students at the level 4 certificate were not qualified previously and Level 6 students were Pearson HND (Higher National Diploma) qualified and enrolled for final year top up. These students were relatively good in IT but were not familiar about Academic environment of university, but their communication was also good. Most of the MBA students were from the UK and few students from Africa and Asia and Europe. These students were working in managerial position in different organizations. Main advantages of these students were their excellent communication skills and individual respects, and team works.

4.2.2 Barriers for online teaching

- Students who came from HND and had no prior qualification were struggling to cope with the university environment, especially for the virtual learning environment.
- Few students were aggressive and not familiar about rules and regulation of VLE.
- Few students from Asia and Africa were confused about taking part in online activities like discussion forums/blogs.
- One student complained to customer service due to our delay to response their emails.

4.2.3 Solution

- Induction and ice breaking activities at the beginning of the course through discussion forum.
- Tried hard to do initial assessment to understand the learner's need. Checked their previous qualification, job experience. For global students also tried to know the about their culture and society.
- Establishes ground rules during induction to control the full academic environment.
- Three induction were conducted by through Blackboard and MS Team collaboration to train Lecturers which was helpful. Individual tasks were given to all Lecturers to get ready for the course. Respect to service level agreement and quality assurance of customer service
- We offered individual tasks in group discussion on weekly basis to engage student for group activities. We also encouraged them by sharing different internet resources and motivated them by giving feedback when it was needed.
- We realized that discussion forum, blog, wikis, and podcast were not sufficient reduce the communication gap as a result we have decided to offer additional 1-hour live class using blackboard and MS Team collaborate which were useful and appreciated by line manager.
- To be honest, we enjoyed our classes with MBA students as they were mature, experienced, and active about their tasks. We just facilitated all the resources, started the discussion and they did everything.

4.2.4 Research and findings about drivers and barriers of e-learning

According to our opinion, E-learning tools like Moodle and blackboard are very useful in supporting classroom-based face-to-face lectures. But we were teaching completely online courses at the other university which was really challenging and difficult. Specially to implement the seven principles we used to use all available blackboard tools like discussion forum, blog, wikis, podcast. It was not easy to keep our eyes open most of the time to monitor students' activities. But after taking learning and technology course it seems to us that it is better to use minimum but effective available tools of VLE which will ensure maximum learning objectives. But main challenge was to deliver online live lectures around the globe using blackboard collaborate was time management. For example, in one batch there were students from Asia, Africa and Europe. So, we used to find two suitable options for them. Time management was also important to ensure learning objectives at the end of each week. To be honest during our first semester it was huge mental pressure comparing with classroom-based teaching.

4.2.5 Areas to improve for online teaching

Although we have experience of teaching as an online tutor at different other institutions, but we have realized that there are few areas that we can improve in future:

- Lecturers need to be more organized with necessary learning resources and different discussion forums
- Lecturers need to guide students more about their critical reflective writing rather than just sharing information or links with simple comments
- Lecturers need to engage students more on group activities
- Lecturers need to be also very active moderator
- Lecturers need to ensure more prompt feedback on time and our feedback should be more specific
- Lecturers need to inspire different learners to explore their own unique qualities on their own ways
- Lecturers need to make students clear about his expectation to them and their expectation to lecturers.

4.3 Data Analysis

Following the path of Song et al, (2004) and their research about student learning and experiences on their use and utility of online learning the authors have surveyed total seventy-six (76) graduate students to capture and capitalize the insight into learners' perceptions of online learning. The data presented below depicts the level of satisfaction on various elements.

Table 2. Components of successful online environments

Degree of measure	Satisfaction Level (More-Equal-Less)	Components with their corresponding percentage
Satisfied with the online learning and learning components	More	87% respondents are satisfied with the course design while 75% demonstrate that they are happy with the online technology. Finally, 62% indicated that they were motivated and well managed time using the online learning platform.
Satisfied with both face-to-face and online learning	Equally	82% respondents are satisfied with the course design while 82% demonstrate that they are happy with the online technology. Finally, 80% indicated that they were motivated and well managed time using the online learning platform.
Online learning	Less	89% respondents are satisfied with the course design while 82% demonstrate that they are happy with the online technology. Finally, 80% indicated that they were motivated and well managed time using the online learning platform.
Overall	N/A	83% respondents are satisfied with the course design while 78% demonstrate that they are happy with the online technology. Finally, 76% indicated that they were motivated and well managed time using the online learning platform.

4.3.1 Data analysis report about the survey on barriers of e-learning

Table 3. Components that create barriers for online learning environment

Degree of measure	Satisfaction Level (More-Equal-Less)	Components with their corresponding percentage
Satisfied with the online learning and learning components	More	75% reported that they faced technical difficulties at various stages
Satisfied with both face-to-face and online learning	Equally	Among all 54% reported about technical problems
Online learning	Less	71% reported that they felt out of human touch meaning lack of community engagement while 60% reported that it was difficult for them to concentrate on their aim/goals and finally, 50% reported technical difficulties like previous group.
Overall	N/A	The overall reported incidents combined the 58% technical problems and 50% lack of community engagement.

Blackboard/Moodle contains activity monitoring tools which must be used to track students' activities like which contents are visited by the students and how often and when. During our teaching as an online tutor, we did not follow this technique but at the end of the course we realized the effectiveness of these tools. While analyzing, the student engagement and retention level in the class it was emphasized that if we practitioners can truly demonstrate the pedagogy principles including appropriate direction towards active learning and teaching methodologies, use active formative and summative feedback, introduce in-class activity which reflect employability it will ensure the online delivery success. This was also reflected by Berge (1995) where the appropriate design of the resources and learning content played a vital role in classroom learning.

We have read a few research papers and so far, we have not seen any debate or alternatives about 7 principles for good practice in undergraduate education by Chickering and Gamson. Most of the researchers tried to design or propose technology-based learning keeping these 7 principles intact. At present as a lecturer, we are using Moodle as a supportive E-Learning tool for face-to-face classroom-based study. One of us has also few teaching experiences as an online IT tutor where he was completely depended on Blackboard and Blackboard collaborate for delivering lectures online around the globe. Now we have done a few researches on these tools and are amazed to see that both tools are developed facilitating the seven basic principles of Chickering and Gamson. These two tools are most powerful platforms of E-Learning specially most of the Universities of UK using these two tools. Besides there are some other tools like Edmodo, Skillsoft, Sakai etc. Massively Open Online Course (MOOC) is also getting popularity specially this format can be very much successful as a possible pedagogical approach that may explore mobile learning. UCISA has recently published an interesting survey report based on TEL's uses in UK higher education institutes (England, Wales, Scotland, and Northern Ireland) Table [4] that also support our research and findings.

Table 4. Uses of TEL in UK

Response	Total		Type			Country			
	No	%	Pre-92	Post-92	Other	Eng.	Wal	Scot	Ni
Base: Respondents	All	104	51	43	10	84	07	12	01
Yes	103	99%	100%	100%	90%	99%	100%	100%	100%
No	1	1%	0%	0%	10%	1%	0%	0%	0%

Source: <https://www.ucisa.ac.uk/en/Resources/2018/Technology-enhanced-learning-survey>

4.4 Recommendations

VLE to meet the Chickering and Gamson's seven principles of Good practice.

Student Faculty Contact.

Blackboard Collaborate, Group Discussion, Message/Emails.

All most all VLE tools have these facilities but the question is how effectively the tutors are using these tools. We have realized that there should be different group discussion forums like café, forum, a conference to engage students to share their ideas, justify their ideas with reliable sources and finally reflective thinking and writing, which is so essential for learning. Wiki is a good example for group working where everybody shares their ideas about Seven Principles of good practices, then we moderated poster contents and finally prepared the poster the product of knowledge.

4.5 Communicates High Expectations

We believe Moodle and Blackboard software have all tools to meet learners' high expectations, but it depends on the activities and training of the facilitator (Teachers). This is a very important point. From this point we have realized that leaning has no boundary. As a teacher at the beginning of the new module, we try to explain what our expectations from students will be and discuss what they can expect from us. We don't want to keep our students only to syllabus learning objectives rather we try to encourage them to share, discuss case studies, take part in debate, read journals, and share their reflective thinking which create not only learning activities but also supports principle of high expectations.

4.6 Respect Talents and Ways of Learning

We believe this point is completely related with the role of teachers rather than technology. Especially for online learning environment teachers will get students from different parts of the world with different culture and societies. So training is essential to meet these requirements. Finally, to achieve the goal of these 7 principles technology is ready, but it completely depends on how effectively the teachers will use these tools.

5 DISCUSSION AND LIMITATION

Although Chickering and Gamson introduced seven principles for good practice in undergraduate education during 1984 but during our activities we have realized that these seven principles are basic to achieve learning objectives of any disciplines like technology, arts, commerce or even for medical science. Even for online education these seven principles are applicable. According to Billings (2000) the Seven Principal Framework (SPF) best suits the principle and practice while designing and developing the delivering instructions that are sourced and internet-based but the main challenge for online teaching will be the effective use of online technology with suitable method and instructions.

Research findings of Diogo *et al.*, (2011) about Technology Enhanced Learning in Higher Education also suggested and validated our finding and recommendations. Arbaugh and Steven (2006) also suggested that seven principles of good practice developed by Chickering and Gamson (1987) could be also useful for online MBA program and have justified our recommendations and findings.

However, the use of technology and the comfortability was always an arguable debate. Research addressed that technology integration is an integral part of active learning. According to Hooper and Rieber (1995), technology played a vital part in introducing game-based online learning tools that assist many million learners in applying their cognitive ability to learn and assess their skills and knowledge level achievement. A similar research was conducted by Rovai (2002) where the researcher took a sample of 314 students from 26 different graduate school students to capture their views on online learning using Blackboard.com as a delivery medium. The research findings also indicated a relationship among students' perceived sense of being in the community and the development of the cognitive learning approach.

However, the main limitation of this research is the number of participants. Because of limited number of participants, we have focused more on qualitative research methods. If we could ensure more participants of different programs that may ensure more accuracy for quantitative data analysis. But we have overcome this limitation by applying triangulation and validation methods with other research findings.

6 CONCLUSION

"There has been concern among educators that quality assurance procedures for the design and delivery of Internet-based courses have been ignored, as colleges and universities rush to offer an array of distance-delivered programs that will allow them to maintain and grow enrolments" (Motiwalla & Tello, 2000; Phipps, Wellman, & Merisotis, 1998).

According to our opinion there should be a different quality assurance policy for online education rather than traditional policy of on campus education. For example, we used to teach as an online IT tutor. It has formed a separate department with different quality assurance policies with different e-Learning experts who can guide and train online tutors to implement the 7 principles for good practice in Chickering and Gamson's undergraduate education.

During our teaching as an online tutor, we allowed students to choose the pathways that they wanted to achieve their learning objectives as self-regulated learning should be appreciated for online education. To facilitate active learning, the online tutor needs to prepare his resource with case studies, problem definitions, debate topics, journals, videos, simulation software, etc. These resources should be placed to discussion forums to engage in active demonstration of the skills on improved skills and knowledge and create new dimensional cognitive schema.

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