



Is flipped classroom preferred learning style for the Millennials? An Exploratory study

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ABSTRACT

Millennials prefer to change the traditional ways of learning in educational institution that will provide life-long learning skills. This brings a huge challenge for the educational institutions; how to cater to the learning needs of these millennial who desire to change the traditional way of learning by exploring ideas, investigating problems and prefer more interaction using social mediums and experiment new ideas before making a conclusion. This research paper is an exploratory study to investigate; whether the flip classroom approach is a suitable learning approach to meet the expectations and the learning style of these millennials? The research paper is an attempt to compare two teaching styles (traditional in-classroom and flip classroom approach) on a group of millennial students to assess which learning approach these students prefer more. Findings of the paper will highlight the impact of flip classroom approach on overall satisfaction of the students, completion of different tasks, prefer learning approach and overall impact on the quiz and final exam results.

Keywords: Millennial, Flip Classroom, Social Networking, Traditional Classroom.

1. Introduction

The technology is playing a vital role in the transformation of our educational institutions and how we disseminate knowledge to millennial generation. The relationship between millennial generation and technology is strong and its implications are far reaching. Due to this relationship we are experiencing a massive change in-terms of knowledge delivery in educational institutions and there is replacement of the traditional classroom model of delivering knowledge to a model that meet the new innovative market demands [1]. We are experiencing a change of requirements in the labor markets and these changes will impact how we train, educate, and prepare our millennial generation. The use of highly advance technology is becoming a norm in the job market and these educational institutions have to integrate technology in the course delivery so that young generation is prepared to meet the ever-changing challenges. To remain competitive the educators have to change and incorporate new ways of learning and use of technology or they will lose students. The millennials make the major portion of our educational and job market now and various research completely supports the use of technology in the classrooms to build a relationship with students. Millennials are in there comfort zone where learning or integrating a technology in their lives is a norm and they are well familiar with this approach [2]. The use of technology in our society is at massive scale and the impact is evident on millennials as they are the example of this change process.

The change in any society must be supported by the education as the characteristics of millennials how they seek education and how they should be taught will bring massive changes for these educational sector. These millennials are digital learners and they seek knowledge differently from the generation before as they prefer to do multiprocessing and try to explore and investigate things by using the technology [3]. The use of digital media platforms have allowed the millennial to think in a new way about teaching and learning process. The new shift has moved from the instructor led teaching to explore, research, construct and discover new concepts models from the teacher-centric learning process to the learner-centric education and from memorizing facts and figures to process of how to learn and use these concepts outside the school in lifelong learning experience [3]. The new shift demands to move away from one fixed size that fits everyone to individual learning based on the learning styles and the learning process should be just like a game full of fun and various exciting activities rather than burden on the students. Where the teacher role changes to become supporter in the process rather than just communicating the facts [4]. The use of technology and the impact on learning style is changing the educational institutions and millennials can benefit the change in the society. The research paper initially contains the literature review followed by research question to be investigated. In the next section of the paper research methodology is discussed that will be used to investigate the problem. The latter part of paper will present the findings of the research and the last part of the paper will list all the findings from the research.

Set the Context: A Brief Literature Review

A. Millennial and Technology

Writing in Huffingtonpost.com, Russ Warner, 2013, identify the importance of technology for these millennials as more important than life. The author explains these millennials were grown up using the technology and it is integrated into their lives in such a manner that “*more than half of them will give up their sense of small than a critical device*”. It was evident from the literature and all scholars agree that millennials have seen and observed the connected world with the use of technology where the access to the information is easy. The information is captured, processed, sent, and received using various devices such as wireless smartphones, PDA-phone and portable gaming devices [5]. The introduction of social networking sites has even revolutionized the way these millennials are interconnected with each other and the society. The recent survey indicates that that 96% of the millennials generation are a member of at least one these social networking sites [6]. The high integration of technology into the lives of these millennials have influenced how they approach and like to seek higher education. The high use of technology will stipulate the demands on the course curriculum and how the knowledge will be transferred to them [7]. The preference of these millennials to learn by exploring and investigating a problem using various sources. The use of multimedia modes play a central role in their learning process as they desire to have entertainment during the learning process [8]. The technology drives their lives and how they communicate with each other. The internet is a platform that allows them to live publically, record each experience, and share these experiences using the technology across the wider community as the privacy norms have disappeared as compared to the generations before. The use of technology is so important that they don’t abide with workplace policies. According to Accenture Management consulting [9], more than 66% of millennials reported that they don’t follow the IT policies at work and more than 45% employed millennials globally use social networking sites at work. This clearly indicates that use of the technology is crucial for these millennials and regardless of any restrictions they will use technology to remain connected. The research conducted by Pew Research Centre Social & Demographics Trend Projects, “Growing Old in America”: Expectations vs. Reality” [10], identifies that millennials have outpace the older Americans in Internet and mobile usage. They will have presence over the social networking platforms and the desire to remain connected wirelessly with the social friends while they are at work or travelling. The use of technology by millennials is more than any other age group as identified in the following research. As the research data suggest more than 75% of millennials have social networking profile and around 62% use wireless internet connection away from home and 20% post videos about themselves and share with everyone. These millennials use more mobile phones with than 88% uses mobiles to text and an alarming 64% text while driving.

Millennials Outpace Older Americans in Technology Use				
	Millennial (18-29)	Gen X (30-45)	Boomer (46-64)	Silent (65+)
Internet behaviors				
Created social networking profile	75	50	30	6
Wireless internet away from home	62	48	35	11
Posted video of themselves online	20	6	2	1
Use Twitter	14	10	6	1
Cell phones and texting				
Use cell to text	88	77	51	9
Texted in past 24 hours	80	63	35	4
Texted while driving	64	46	21	1
Have a cell phone/no landline	41	24	13	5
Median # texts in past 24 hours	20	12	5	--
Note: Median number of texts based on those who texted in past 24 hours.				

Figure 1: Millennial using more technology [1]

The research clearly highlights that overwhelming majority of millennials 90% are using internet to communicate. This number is increased to 92% for millennials between the age of 18-24 years old using internet. The research identifies the fact that for millennials the use of technology is a norm and it is an essential part of their lives.

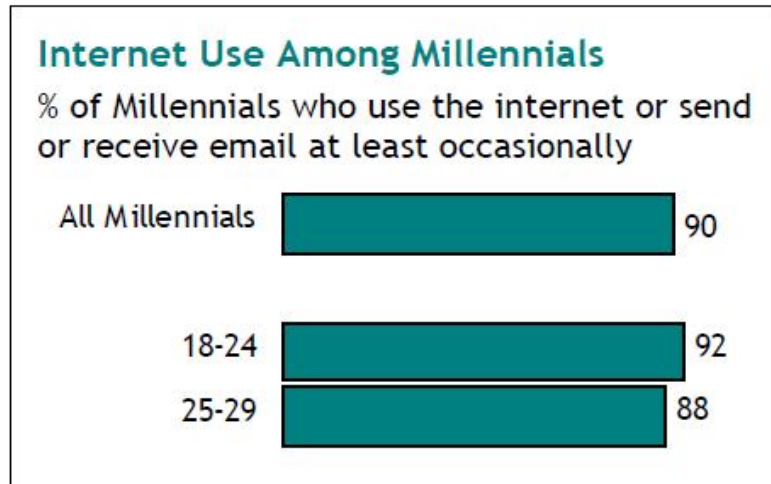


Figure 2: Millennials high use of Internet [1]

The millennials are having various devices other than mobiles and computers. As mentioned by Zickhur & Smith (2012) in the following table, millennials are having various devices such as games consoles, e-book reader and tablets. The game consoles are the most widely used as compared to the ipods and MP3 player. This clearly indicates that from the early age these millennials are using the technology and it's a part of their normal lives.

Ages	Devices											
	iPod/MP3 player		Game console			e-Book reader				Tablet		
	'09	'11	'09	'10	'11	'09	'10	'11	'12	'10	'11	'12
-33	73	74	59.5	-	63	-	-	5	-	-	5	-
34-55	-	44.6	-	-	41.6	-	-	6	-	-	4.5	-
+55	-	15	-	-	10	-	-	3.6	-	-	1.6	-
All adults (18+)	50	37	43.3	42	-	3	5	7	19	4	7	19

Figure 3: Millennials having more Electronic Devices [3]

According to the research published in American Press Institute in 2015, "How millennials use and control social media", the social networks are a very important part of millennials digital lives as these platforms have become more than just connecting people together. Millennials are using variety of social networking platform to acquire the latest news. The report mentions that 88% of millennials get their news from the Facebook whereas sizable minority also get their news from Pinterest (36%), Twitter (33%), Reddit (23%) and Tumbir (21%).

Millennials have positive feelings about the technology. According to the survey overwhelming millennial (74%) think that the use of new technology makes the life easier and convenient. As they are familiar with the technology at a very early age the introduction of the technology is a norm and they are used to it.

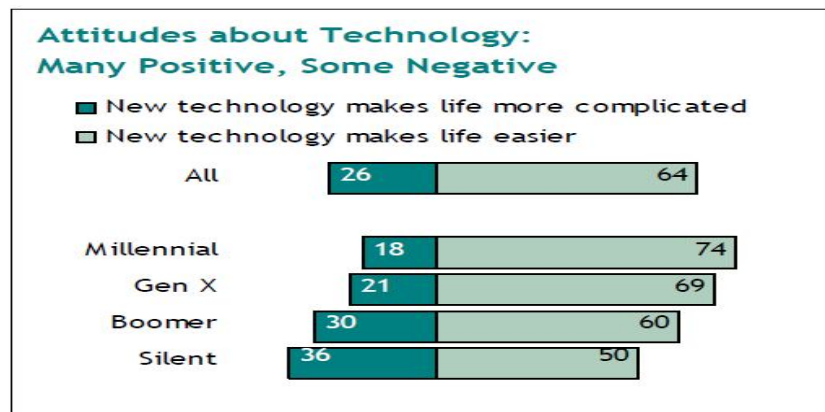


Figure 4: Millennials Positive Feelings about technology

These young people are high users of technology while at home, at work, or on the move. The relationship between them and technology is very strong and their life is defined by instant communication with the active and constant use of digital mediums that has completely revolutionize the process of communication, knowledge management, learning and their personal and social values [10].

B. Millennial: The New Generation of Students

The higher education is experiencing a major shift from a teacher-centered to the learning-centered process and due to this; the methods of communicating knowledge to students are also experiencing the change. In the traditional mode educator provides a platform and method for learning which everyone has to follow. In the past educator used to control the stage and was responsible to share all the learning resources and control the entire learning process behind closed doors. This style will not be suitable for these millennial students who will decide themselves the learning process and how they like to seek new knowledge. In order to teach this new generation, the educator needs to understand their audience that prefer to work in collaboration, use various variety of instructional delivery methods, allow students to explore new ideas and experience the learning process journey [11]. This raises serious questions that how the educator can reach to these millennial students and provide a learning environment that best suits their inspirations and learning requirements. According to Howe and Strauss's seven [12] characteristics of millennial students provides a guideline to the educators to meet the challenge of this new generation. Millennials are used to working in groups in the class discussion and prefer team learning activities outside the classroom. The educator must plan the lesson in such a way that prefers the learning styles of this new generation by including group discussions and open classroom approach where students have freedom to access and use resources from outside the classroom without any restriction.

Millennials prefer to socialize and share their thought and opinions to improve the learning process. The learning process should revolve around having group discussions and collaborative thinking. The educator should improve the learning process by including independent thinking or decision making activities which will define millennials their expectations and enhance creative and critical thinking process [12]. These millennials prefer the learning centered syllabus and require quality feedback should be provided for the further improvements that can be made. Millennial are technological savvy and electronic and social medium can be used as a communication channel where the entire class is involved in answering the questions and providing feedback. They are goal oriented and intellectually sharp students who are eager to learn new skills while getting involved in various experiments and hands on activities [13]. Students demand access to vast resources immediately to resolve a problem and the role of an educator is to facilitate the process rather than dictate what has to be done. Using technology the facilitator can engage with them and provide constructive feedback to these students. In order to meet the inspiration of these millennials teachers must mentor students by helping and managing through the knowledge and promote the process of life-long learning process [14]. The new approach of educating and mentoring is required in-order to meet the inspirations and learning style of these millennials which are changing the traditional structure of a classroom.

C. Millennial and Flip Classroom Assessment

These millennials forced the change process on the traditional classroom and the way the knowledge was shared in the past. The flip classroom as the name dictates; the learning process is flipped from the traditional method of delivering knowledge. The learning process starts well before the class actual starts and encourages the use of various sources to have an in-depth knowledge about a particular problem [15]. This learning process encourages students to review and examine the lecture material in different forms such as a videos, written notes, audio recording and then with the teacher in the classroom they will engage in actual solving problems and discussing various options to resolve the issue. The learning process allow studentsto actively engage in the learning process and apply the knowledge gained from the initial research to solve the problem. The benefits of using flip classroom approach are many as it provides more opportunityfor students to discuss the solution and evaluate various options with the teacher. It provides self-paced learning process, provide more opportunities forgroup work and collaboration and just-in-time instructions [16]. In flipped classroom the class time will be used as workshop where student will interact with the teacher to investigate the lecture content in-detail. Test various ideas share their skills and interact in a form of groups to solve various activities. This approach allows the use of technology where students can explore various resources and use them during the lesson to resolve various problems [17].

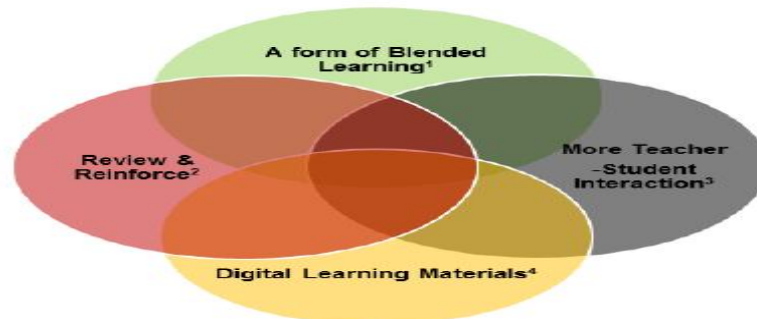


Figure 5: The Flip Classroom Methodology [3]

To meet the inspirations and support the learning preferences of these millennials the flip classroom approach is a suitable option. The millennials are technologically savvy and flip classroom allows students to use technology in-order to solve any problem. The approach promotes students work on developing skills to make well-informed choices and develop the skills that are essential in making good decisions [18]. The approach best matches the learning style of these millennials to design and produce their own work and be an independent learner in the process. The approach also unites the teacher with the students in agreeing the common objective, helps to design the entire plan, set goals, and provide students with all required life-long learning skills which these millennials prefer [19]. The approach also promotes active learning by doing practical work to improve the learning process and ensures that students take charge of their learning process. As mentioned by various writers that the millennials also prefer practical work with active participation in the learning process and flip classroom provides them with the opportunity. These millennials forced the change process on the traditional classroom and the way the knowledge was shared in the past. The flip classroom approach will enableto meet the change of delivering knowledge to these millennials by reforming the entire process of learning.

Research Question

Q) Does independent learning process using flipped classroom approach can improve the success, achievement and overall experience of millennial students as compared to the traditional classroom?

The main question to be investigated in this research is whether the independent learning process using the flipped classroom approach can improve the success and achievement rate for millennials students over the traditional classroom. The research will highlight the difference in the overall improvement using the flipped classroom and provide a mechanism that is best suitable to meet the learning style of these millennial students.

Methodology

For this research HE (Higher Education) second year computer science millennial students between the age of (18-22) years wereselected for the research. The group has 31 participants with 15 male and 16 female students. The group is divided into students with different level of competency ranging between A-E grades (2A, 7B, 9C, 6D, 7E).The flip classroom approach was used with these students for more than 8 weeks to deliver a computer science module. This group is already familiar and throughtout the educational life has received traditional mode of teaching where the

lecturer deliver the unit and control all the session. For the first time the group was introduced to the flip classroom approach. Interviews and survey will be used in order to investigate the groups experience with the flipped classroom approach and its overall impact on their achievement rate, success rate . The research will explore whether these millennials using the new flip approach were able to complete challenging tasks, improvement in grades and their overall feeling about this new experience. The overall achievement and success rate obtained using the flip classroom approach will be measured against their traditional in-classroom grades.

For this group the flipped classroom approach was used where the lecturer gives all resources to the class in-advance. Students are encouraged to investigate and explore the topic before showing up for the lesson using various sources using technology. In the flip classroom approach the students in the group were watching video lecturer and they were working in small groups to resolve various tasks. The participants share their question online and using the social medium and they will share answers to any problems. Students are well prepared for the lesson by having detail understanding in-advance for the topic. During the classroom time students are not making notes but they are trying to resolve various tasks and having detail discussion with their teacher. After viewing video lecturers and resolving various tasks the group is assessed by small quizzes and final exam to assess their understanding to the topic as well. The average grades from these quizzes will be recorded for each member of the group. These quiz and final grades will be compared with the traditional classroom grades to see any improvements.

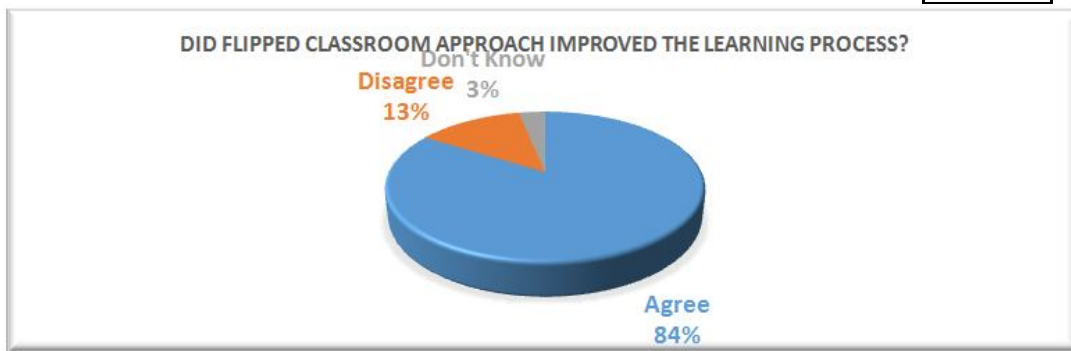
Result Analysis

Q1: Did flipped classroom approach improved the learning process?

The data collected from the question is represented in the following **Table 1.1** from millennials clearly indicates that the overwhelming majority of respondents 84% agreed that flipped classroom approach improve their learning process whereas only 13% disagree and 3% were not sure. The data highlights clearly that the students enjoyed the flip classroom approach and it has improved their learning process.

Table 1.1 Flip Classroom & Learning Process

Agree	26	84
Disagree	4	13
Don't Know	1	3
		100

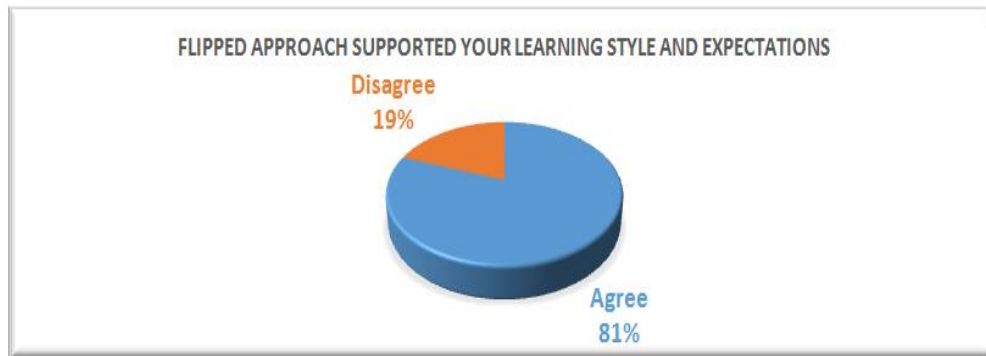


Q2: Did the flipped approach supported your learning style and met your expectations?

As millennials have different preferences and learning styles some of them are visual learners whereas some prefer to work in groups or prefer hands on approach by doing practical work. This questions was an attempt to investigate whether the flip classroom approach supported their learning styles and expectations. As seen from the following **Table 1.2** 81% millennial students agreed that the flip approach helped with their learning style and they prefer to learn using this approach whereas 19% disagree as it doesn't support their learning style or never met their expectations

Table: 1.2 Flip Classroom Met Expectation

Agree	25	81
Disagree	6	19
Don't Know	0	0
		100

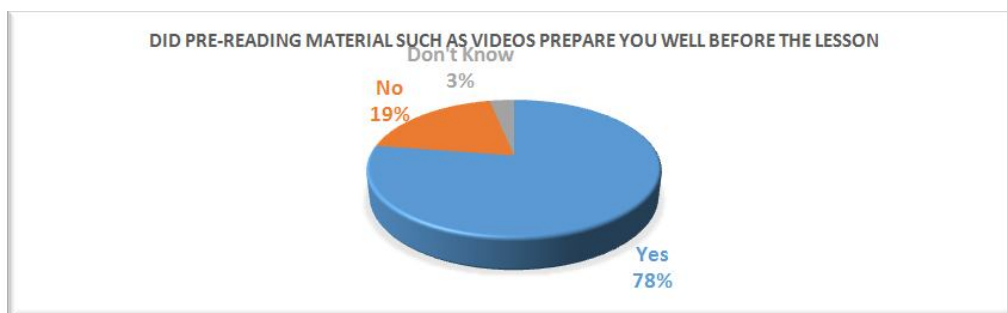


Q3: Did pre-reading material such as videos, electronic lectures and other sources helped you to prepare for the lesson in-advance?

In the flip classroom approach all the videos, electronic lecturers and reading material were given to the class before the start of the lesson so they are well-prepared when they come to the actual lesson. As seen from the following **Table 1.3** the overwhelming majority of 78% millennials agreed that resources given in advance before the actual start of the lesson helped them to be well prepared for the lesson whereas 19% don't agree and 3% stated don't know.

Table 1.3 Pre-reading material and Impact

Yes	24	77
No	6	19
Don't Know	1	3
		100

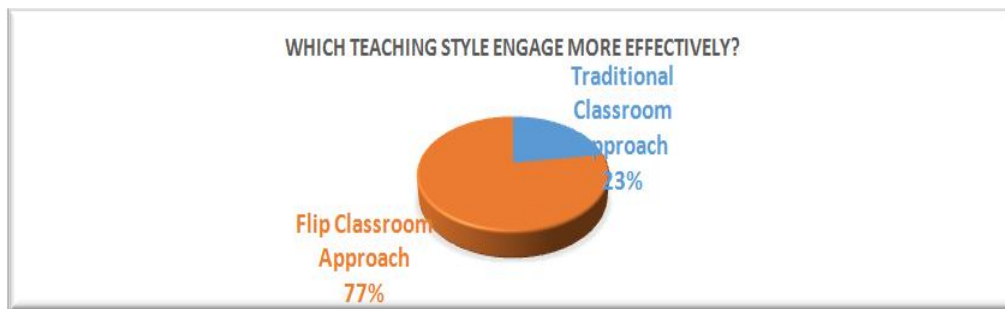


Q4: In which teaching style the lecturer was able to engage more effectively with the classroom?

Millennials in the response clearly prefer flip classroom approach with 77% agreed this approach teacher was more effectively engaged in the lesson and answering students queries and helping them understand the problem as shown from the following **Table 1.4**. Whereas 23% respondent by stating that traditional classroom approach was more effective in engage with the classroom.

Table 1.4 Prefer Learning Style

Traditional Classroom Approach	7	22.6
Flip Classroom Approach	24	77.4
	31	100.0

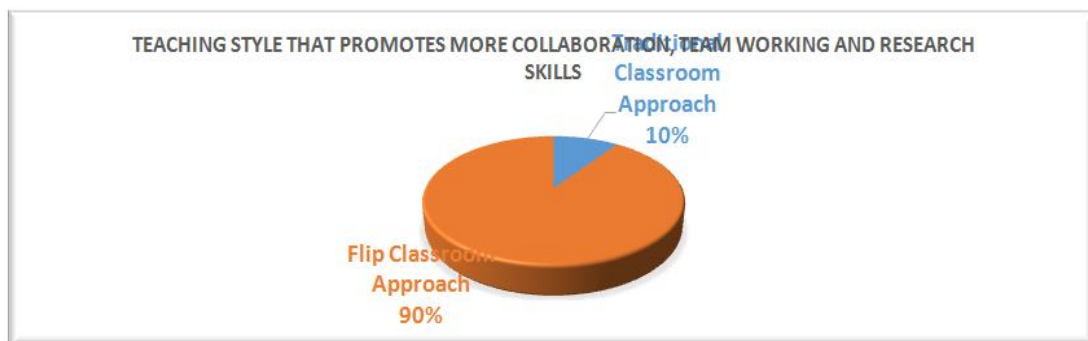


Q5: Which teaching style promotes more collaboration, team working and research skills?

It was evident from the data collected as shown in **Table 1.5**; millennial students 90% agreed that flip classroom approach promotes collaboration, team work and enhance research skills whereas only 10% respondent by stating traditional classroom approach promotes research and team working skills.

Table 1.5 Learning Approach promotes collaboration

Traditional Classroom Approach	3	10
Flip Classroom Approach	28	90
	31	100

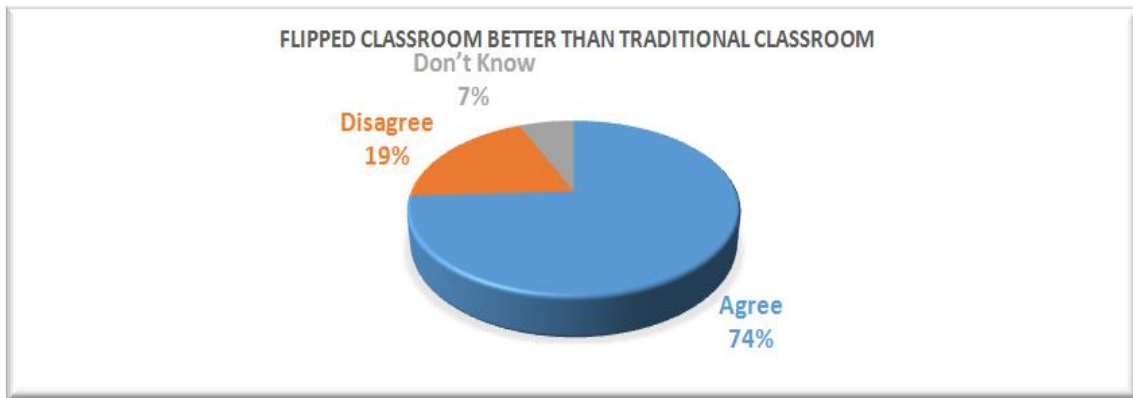


Q6: Did the flipped approach supported the learning process more than Traditional Classroom lecture?

The overwhelming millennial respondents 74% agreed that flipped classroom approach supported the learning process more than traditional classroom approach as shown in **Table 1.6**. 19% disagreed and 7% were not sure. The data collected clearly highlights that millennials found flipped classroom approach much more effective as compared to the traditional approach.

Table 1.6 Prefer Learning Approach

Agree	23	74
Disagree	6	19
Don't Know	2	7
	31	100

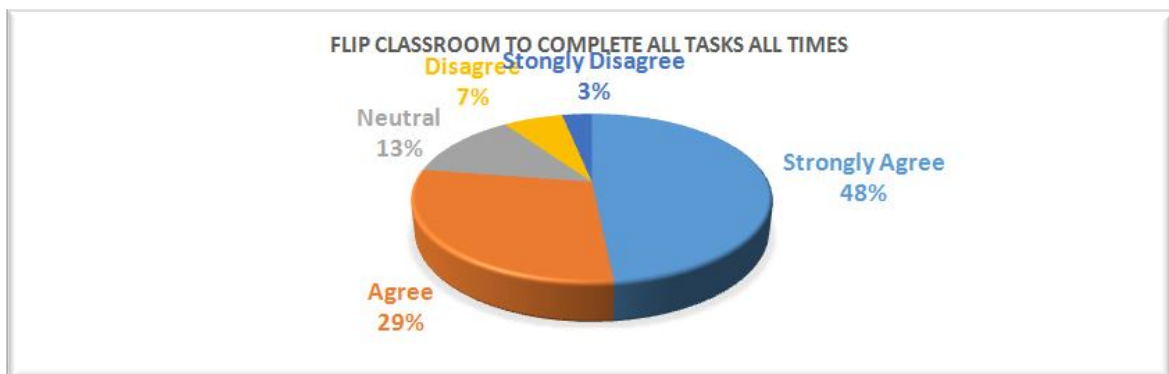


Q7: Using flipped classroom approach were you able to complete all tasks on all the times?

The purpose of the question was to assess using this new flip classroom approach whether millennials were able to complete all the activities all the time in the classroom. According to the **Table 1.7**, 48% strongly agree and 29% agree that using the flip approach enable them to complete all the tasks all the times. Whereas 7% disagree, 3% strongly disagree that the approach enabled them to complete all the tasks all the times. 13% have neutral opinion about the question.

Table 1.7 Flip Approach and Completion of Tasks

Strongly Agree	15	48
Agree	9	29
Neutral	4	13
Disagree	2	6
Strongly Disagree	1	3
	31	100

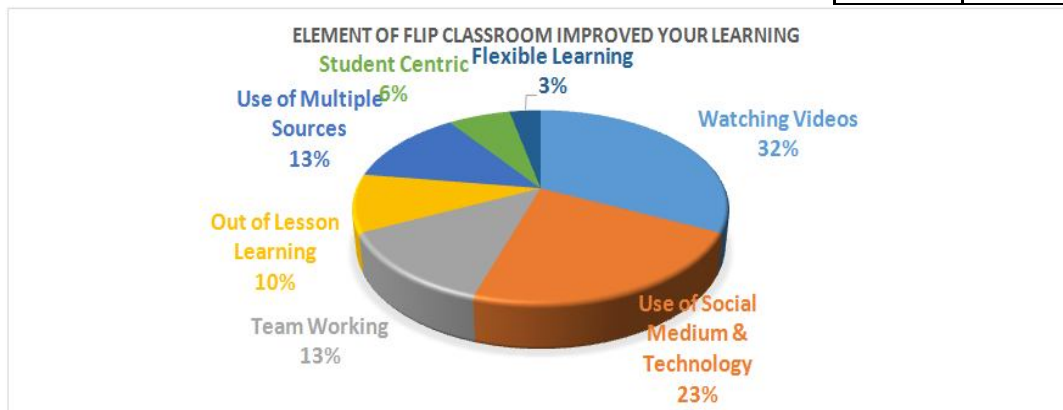


Q8 : Which elements of Flip classroom you think improved your learning the most? Rank any following THREE in the priority by writing 1,2,3 in the option

According to the following **Table 1.8**, 32% of respondents stated watching videos, 23% of respondents agreed use of social medium and technology, 13% of respondents agreed on team working and use of multiple sources are top three options that helped millennials to improve their learning experience using flip classromm approach. 10% of respondents stated out of lesson learning whereas 6% stated student centric approach and 3% think flexible learning options in the flip classroom approach helped them in the learning process.

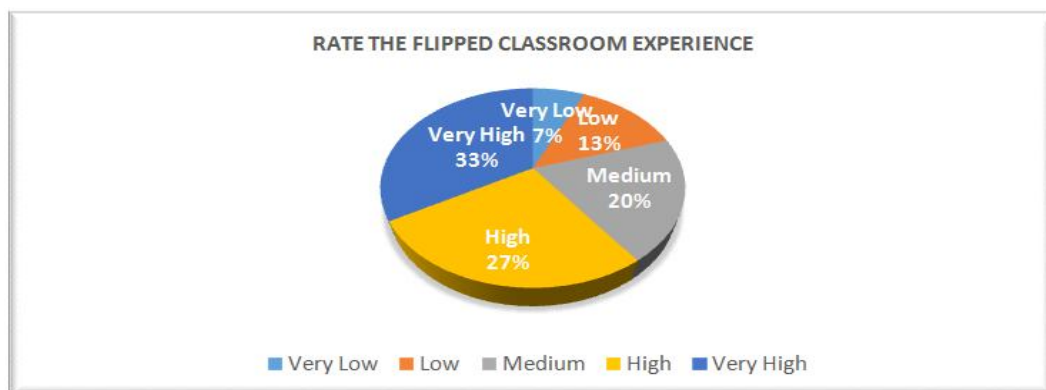
Table 1.8 Elements of Flip Classroom most Effective

Watching Videos	10	32
Use of Social Medium & Technology	7	23
Team Working	4	13
Out of Lesson Learning	3	10
Use of Multiple Sources	4	13
Student Centric	2	6
Flexible Learning	1	3
	31	100



Q9:Rate the Flipped Classroom experience between 1 (Very Low)- 5 (Very High)

The overwhleming majority of millennials have a good experience using the flip classroom approach. 33% rated the experience very high, 27% rated the experience high and 20% rated the experience as medium while using the flip classroom approach. So nearly 80% of millennials were overall well satisfied with the experience of using flip classroom approach and think it played a vital role in their learning experience and allowed them to perform well. Whereas only 13% rated the experience low and 7% rated the experience very low using the flip classroom approach.

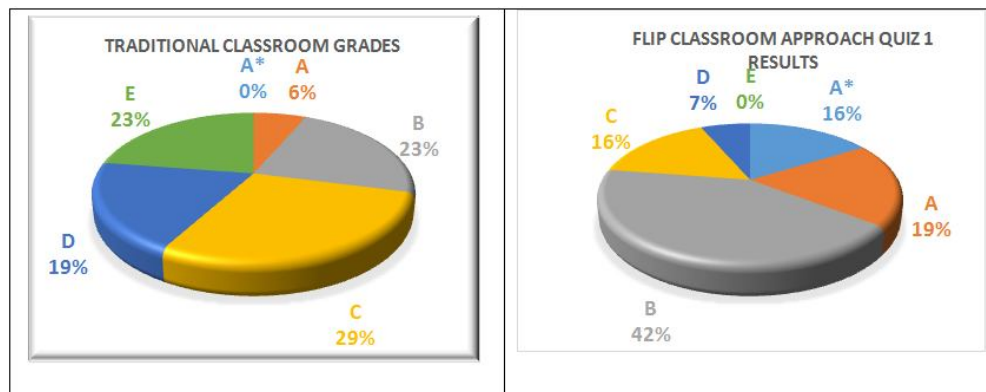


Quiz Result 1

There were Quiz exams that were conducted on a regular interval to assess the students capability while they are being taught using the new flipped classroom approach. The students that were selected for this research initially came from the traditional classrooms and have MTG (Minimum Target Grades) that was given to these students using the traditional classroom learning and assessments. After flip classroom approach was used the Quiz 1 was conducted to assess the performance of these students. The Quiz 1 results seen 16% A* grades using the flip approach whereas in the traditional classroom there was no one achieved A* Grade. The flip approach enable 13% hike in A grades, 19% hike in B grades, and no was at grade E using the new approach as compared to the traditional classroom approach. The approach allowed more millennials to achieve high grades as compared to what they have achieved in the traditional classroom so far.

Table 1.9 Comparison of Quiz Results

Group 1	A*	A	B	C	D	E
Students (Traditional Classroom)		2	7	9	6	7
Flip Classroom Approach	5	6	13	5	2	

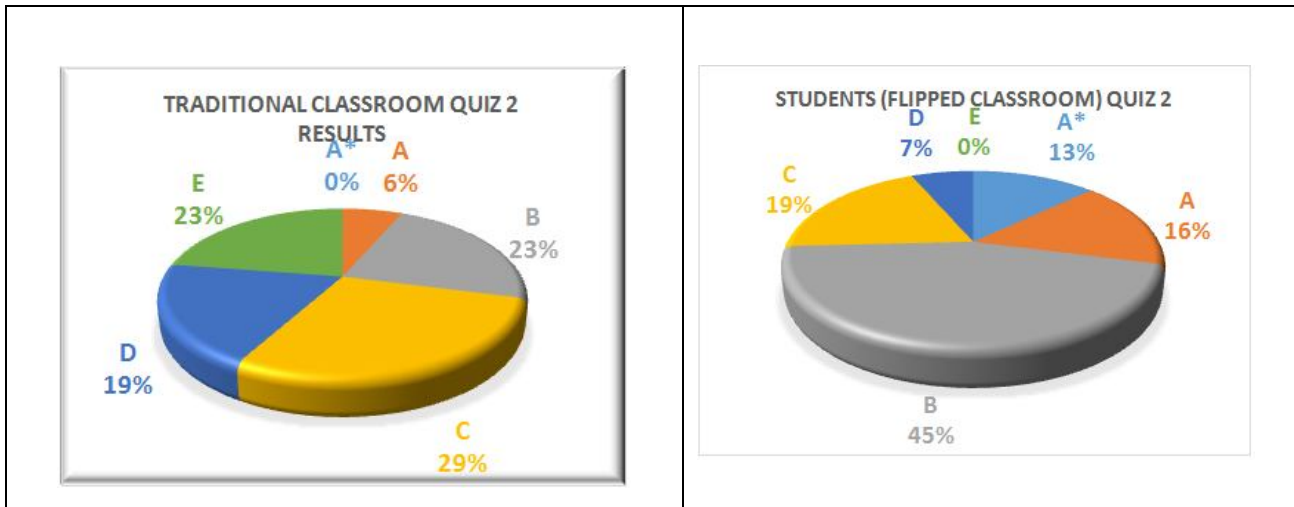


Quiz Result 2

The quiz 2 results also clearly indicate that millennials were able to achieve high grades using the flip classroom approach as compared to the MTG (Minimum Target Grades) that students have achieved so far using the traditional classroom approach. The flip approach enable 13% to acheive A* grade, 10% hike in A grades, 22% hike in B grades, and no one was at grade E using the new approach as compared to the traditional classroom approach. The overall using the flip approach with millennials have seen improvement in grades in the Quiz 2 results.

Table 1.10 Comparison of Results

Group 1	A*	A	B	C	D	E
Students (Traditional Classroom)		2	7	9	6	7
Flip Classroom Approach	4	5	14	6	2	

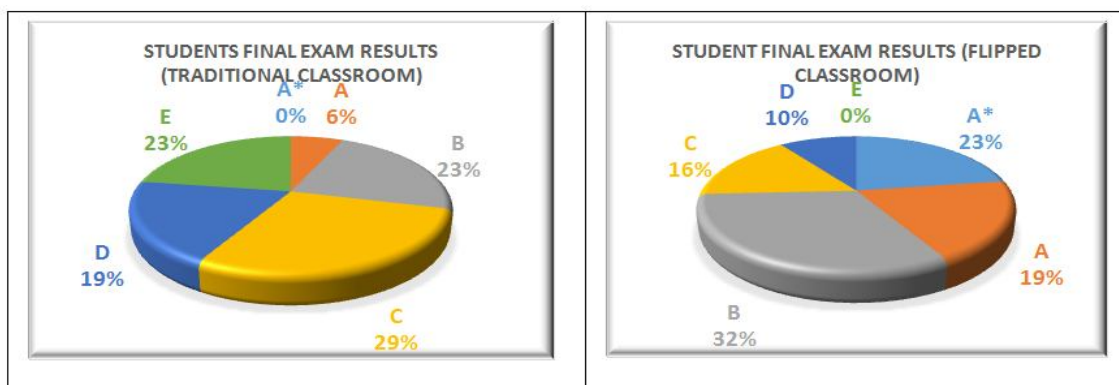


Final Exam Results

The final exam results also clearly indicate that millennials were able to achieve high grades using the flip classroom approach as compared to the MTG (Minimum Target Grades) that students have achieved so far using the traditional classroom approach. The flip approach enable 23% to acheive A* grade, 13% hike in A grades, 9% hike in B grades, and no one was at grade E using the new approach as compared to the traditional classroom approach. The overall using the flip approach with millennials have seen improvement in grades in the Final Exam results.

Group 1	A*	A	B	C	D	E
Students (Traditional Classroom)		2	7	9	6	7
Flip Classroom Approach	7	6	10	5	3	

Figure 1.11 Comparison of Final Exam Results

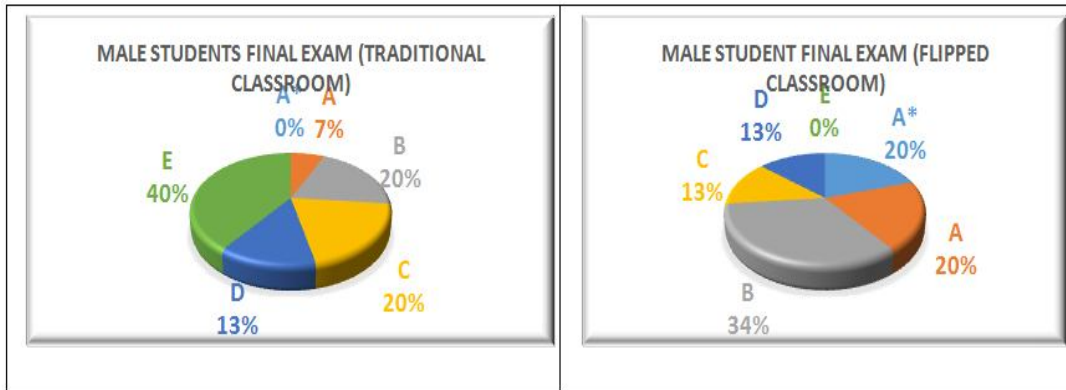


Final Exam Results—Male

The final exam results also clearly indicate that male millennials were able to achieve high grades using the flip classroom approach as compared to the MTG (Minimum Target Grades) that students have achieved so far using the traditional classroom approach. The flip approach enable 20% male millennial students to achieve A* grade, 13% hike in A grades, 14% hike in B grades, and no male student was at grade E using the new approach as compared to the traditional classroom approach. The overall using the flip approach with male millennials have seen improvement in grades in the Final Exam results.

Group 1	A*	A	B	C	D	E
Traditional Classroom		1	3	3	2	6
Flip Approach	3	3	5	2	2	

Table 1.12 Comparison of Male Final Exam Result

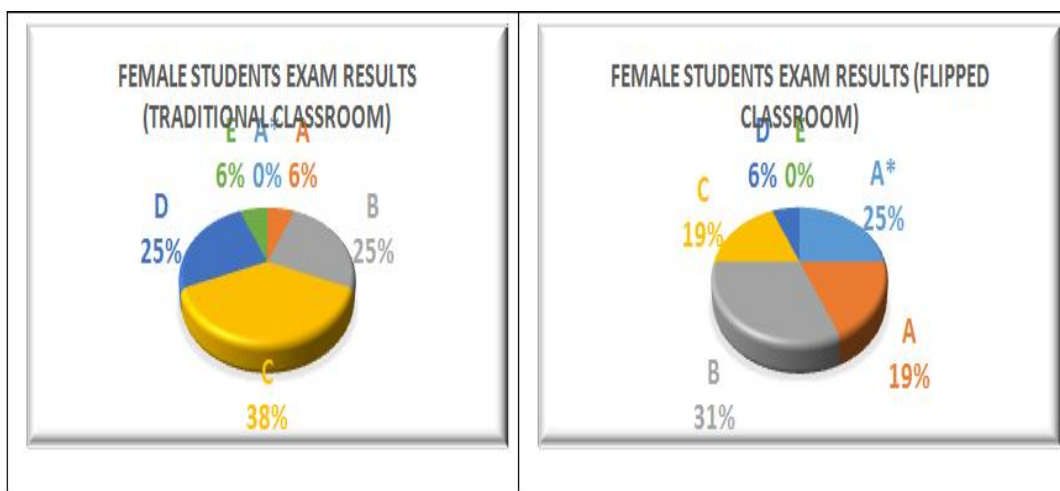


Final Exam Results-Female

The final exam results also clearly indicate that female millennials were able to achieve high grades using the flip classroom approach as compared to the MTG (Minimum Target Grades) that students have achieved so far using the traditional classroom approach. The flip approach enable 25% female millennial students to achieve A* grade, 13% hike in A grades, 6% hike in B grades, and no female student was at grade E using the new approach as compared to the traditional classroom approach. The overall using the flip approach with female millennials have seen improvement in grades in the Final Exam results.

Group 1	A*	A	B	C	D	E
Traditional Classroom		1	4	6	4	1
Flip Classroom Approach	4	3	5	3	1	

Table 1.12 Comparison of Female Final Exam Result





2. Conclusion

Millennials have lived in a digital environment and use of technology is part of their highly saturated digital lives. They prefer to use technology to complete any task by using creative ways to find solutions rather than learn in a traditional classroom setting. Millennials desire to be social and looking forward to the opportunities to join other individuals, communities around the world and promote inclusive ideas that are tolerant to all races, religion preferences, and sexual orientations. These millennials forced the change process on the traditional classroom and the way the knowledge was shared in the past. The flip classroom as the name dictates; the learning process is flipped from the traditional method of delivering knowledge. The learning process starts well before the class actually starts and encourages the use of various sources to have an in-depth knowledge about a particular problem. Using the flip classroom approach with a group of 31 millennial HE (Higher Education) students to assess which learning process they prefer and how it impacts on their success and achievement rate. The following key points were concluded from the research

- The majority of millennial respondents agreed that flip classroom improved and supported their learning process and learning style.
- Use of pre-reading material such as videos, social platform, e-resources helped millennial students to be well-prepared before the lesson.
- Millennials agreed that flip classroom was more suitable as the lecturer was more engaged with the students and it provided them with an opportunity to ask more questions.
- Flip approach promotes more collaboration, team working and promotes research skills as compared to traditional classroom approach.
- Majority of millennials were able to complete all tasks on time all the time using the new approach.
- Respondents prefer the use of millennial approach as compared to the traditional approach.
- Millennials prefer watching videos, using technology and social platform to solve problems, team working and student centric approach in flip classroom.
- Overwhelming majority of millennials have a very high or high experience of using the approach.
- Experienced high quiz, exam results in male and female millennials using the flip classroom approach as compared to the traditional classroom approach.

References

- [1]. Gibson, Soderman, (2014) "Millennials and Technology: Addressing the communication Gap in Education and Practice", Organization Development Journal, USA
- [2]. Hershatter, A., & Epstein, M. (2010). Millennials and the world of work: An organizational and management perspective. *Journal of Business Psychology*, 25, 211-223.
- [3]. Hartley, M. (2011). Google unveils new research funding for University of Waterloo. http://business.financialpost.com/2011/05/18/google-unveils-new-research-funding-for-university-of-waterloo/?_isa=3368-81db, Date Access 02/02/2017
- [4]. Hofstetter, F., (2000), *Multimedia Literacy Textbook*. New York, McGraw-Hill Education.
- [5]. Tapscott, D., (1999), *Educating the Net Generation*, Educational Leadership, 56 (6).
- [6]. Childs, R. D., Gingrich, G., & Piller, M. (2014). The future workforce: Gen Y has arrived *Public Manager*, 38(4), 21.
- [7]. Chelliah, J. & Clarke, E. (2015). Collaborative teaching and learning: Overcoming the digital divide? *On the Horizon*(4), 276-285.
- [8]. Kirkwood, A., & Price, L. (2012). Learners and Learning in the twenty-first century: What do we know about students' attitudes towards and experiences of information and communication technologies that will help us design courses? *Studies in Higher Education* 30(3), 257-274.
- [9]. Franz, R. S. (1998). Whatever you do, don't treat your students like customers! *Journal of Management Education* 22(1), 63-69.
- [10]. Friga, P.N., Bettis, R. A., & Sullivan, R. S. (2013). Changes in graduate management education and new business school strategies for the 21st century. *Academy of Management Learning and Education* 2(3), 233-249.
- [11]. Accenture Management Consulting, (2010), *Technology and Outsourcing, Jumping the Boundaries of Corporate IT: Accenture Global Research on Millennials' Use of Technology* (Access Web: Accenture, 11/02/2016) 6-7.
- [12]. Lowery, J. W. (2011), "The Millennials Come to College: John Wesley Lowery Talks with William Strauss," *About Campus*, 6, 6-12.



- [13]. Howe, N., Strauss W. (2003) Millennials Go to College. Great Falls, VA: American Association of Collegiate Registrars and Life Course Associates; 70-84.
- [14]. Chaudhuri, S., & Ghosh, R. (2012). Reverse mentoring: a social exchange tool for keeping the boomers engaged and millennials committed. *Human Resource Development Review*, 11(1) 55-76
- [15]. Sharples, M., McAndrew, P., Weller, M., Ferguson, R., Fitzgerald, E., Hirst, T., Mor, Y., Gaved, M., Whitelock, D. (2012.), *Innovating Pedagogy 2012: Open University Innovation Report 1*. Milton Keynes, The Open University.