

In the
name of
God

Excellent Activities and Practices Of University Teaching

Message from the University Rector

All praise is to Allah alone, and His peace and blessings be upon His messenger and bondman our Prophet Muhammad, his family and his companions..

Innovation in university teaching has become one of the important and vital issues and one of the main pillars of university teaching and learning development.

Since Imam Muhammad bin Saud Islamic University (IMSIU) realizes their duty toward the development of higher education in Saudi Kingdom and toward the activation of their role locally and internationally and since they aspire to achieve the mission of excellence in university teaching and to activate communication and experience sharing amongst faculty members of all scientific disciplines at national and international universities, University vice presidency of Studies, Development and Academic Accreditation, represented by the Deanship for Development of University Education has worked on organizing the International Forum for Innovators in University Teaching (IFIUT) at IMSIU campus.

IFIUT is based on a pioneering idea; to attract outstanding experiences in university teaching locally and globally then to present these experiences to recipient faculty members and likewise in universities in which they can develop their teaching skills and then improvement of Higher Education outcomes. Therefore, they can keep pace with the practical and scientific ambitions of our society.

This Forum and all university initiatives come to coincide with the recognition given by the Custodian of the Two Holy Mosques, King Abdullah Bin Abdul-Aziz, and his Crown Prince, Salman Bin Abdul-Aziz to the development of education, particularly university and higher education. Also, it comes as a result of the continuous support of his Excellency, the Minister of Higher Education and the Chairperson of the University Council, Professor Khalid bin Muhammad Al Ankari.



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Message of Vice- Rector of University for Studies, Development and Academic Accreditation

All praise is to Allah alone, and His peace and blessings be upon His messenger and bondman our Prophet Muhammad, his family and his companions..

The International Forum for Innovators in University Teaching (IFIUT) at Imam Muhammad bin Saud Islamic University is one of the most significant events the university organizes. Its importance appears clearly when we consider the Forum's role in developing university education in creative ways that focus on outstanding teaching experiences of innovators from inside and outside the Kingdom. The goal is to present their experiences of different disciplines; thus, faculty members in Saudi universities, in particular and in International, Arab and Gulf universities, in general can get benefits in a way that reflects on their teaching performance at their classrooms with their students.

Accordingly, the scopes include: planning innovative university teaching, creative strategies and methods of teaching, modern technologies in university education, methods and means of creative evaluation, excellent activities and practices of university teaching, excellence in managing university teaching and others.

This leading Forum and all developing efforts exerted by the university in order to promote university teaching and learning at Imam University come with the recognition given by the Custodian of the Two Holy Mosques, King Abdullah Bin Abdul-Aziz, and his Crown Prince, Salman Bin Abdul-Aziz to the development of education, particularly university and higher education. It is under the supervision of his Excellency, the Minister of Higher Education and the Chairperson of the University Council, Professor Khalid bin Muhammad Al Ankari, and the continual support of the University Rector, Professor Sulaiman bin Abdullah Abalkhail whose efforts are endless in developing the educational process and promoting the university and the staff to the highest standards locally and globally.

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Message of Dean of Development of University Education

All praise is to Allah alone, and His peace and blessings be upon His messenger and bondman our Prophet Muhammad, his family and his companions.

The idea of IFIUT has emerged to achieve the mission of excellence and leadership in IMSIU teaching and learning through enriching and encouraging creativity and keeping pace with modern approaches of higher education.

Therefore, the Forum aims to provide innovative, realistic and distinguished experiences in university teaching which are presented by faculty members of different specialties. The experiences include introduction of excellent and creative strategies and methods of university teaching and discussions of teaching and learning related experiments. They focus on excellence in teaching and the most recent approaches in university teaching; in addition to, providing opportunities for (academic) educational and scientific meetings and exchanging creative realistic experiences among faculty members and those who are concerned about developing university teaching and learning nationally and internationally.

In brief, IFIUT is “from and for faculty members”. It is all about realistic and excellent experiences in university teaching that are applicable and that are presented, so instructors get benefits in a way that reflects positively on their teaching performance and learning outcomes in all different scientific, humanity and applied majors. In addition to the previously mentioned scopes, the Forum will involve other events; such as, model lectures, workshops, discussion sessions, an exhibition relevant to the Forum in which our associates in success and innovation present examples of their educational and technological products and modern strategies for development in university teaching and learning sectors.

In conclusion, I am always thankful to Allah the Almighty for his blessings then to the Custodian of the Two Holy Mosques, and his Crown Prince for the endless support they give to higher education development in our beloved country. Also, my sincere appreciation is to his Excellency, Minister of Higher



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Education, Professor Khalid bin Muhammad Al Ankari, for his efforts and sincere support for IMSIU and to the University Rector, Professor Sulaiman bin Abdullah Abalkhail, for his continues support to the deanship and his assistance to all its developing activities and programs and for his guidance that has encouraged us to work and reach creativity that our country, society and university look for. Finally, my sincere thanks are for Prof. Khaled Al Abdurrahman, Vice- Rector of University for Studies, Development and Academic Accreditation, and the Director of the Forum's Organizational Committee, for his efforts, constant supervision, his leading role in the deanship's achievements, and for his efforts toward the success and excellence of this Forum.

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The Japanese Experience in University Teaching and its Relationship with the Islamic curriculum

Mohamed Mostafa Zayed

College of Computer Science and Engineering, Taibah University

Abstract

Teaching is a great mission. It is the mission of prophets and messengers. In this paper, we will highlight a well-tested technique that we name it “Teaching with love”. The source of this technique is coming from Rasul-Allah (Peace Be Upon Him). We will also discuss its reflection upon a group of 43 students. Moreover, other experiences will be also discussed showing the weak and strong points of each.

Keywords:

Japanese Education System, Teaching

Introduction

Japanese higher education consists of universities, junior colleges, colleges of technology, and specialized training colleges. The number of students who continue their study at universities is currently on a decline in response to falling birth rate. Recently, the demand/supply ratio for new graduates has passed 2, and Japanese graduates may now choose between at least 2 employers for their first job[1]. The quality of universities and higher education in Japan is internationally recognized. There are 11 Japanese universities in the 2006 THES - QS World University Rankings [2] with the University of Tokyo 19th and Kyoto University 25th [3]. This makes the Japanese higher education an

attractive model to study and this is why in this paper we focus on it.

Teaching Experience

Goals

In this paper, we will highlight the Japanese experiment in higher education teaching. We will present the relationship between the Japanese Professor and his students. We will compare the Japanese system in university teaching with the Islamic system..

Importance

The importance of this paper due to its investigation about the relationship between the teacher in this case the faculty member and his students.

Relation to educational theories and research

This teaching experience is related to educational theories and research as it investigates the relevant factors affecting the students’ progress in the higher education system.

Detailed explanation of the stages

To discuss the Japanese experience in higher education teaching, we have to introduce first the education system for graduate level education. At graduate level, each Japanese university establishes several research labs. Each lab is specialized in certain topics of



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science and the lab is supervised mainly by a Japanese professor. The lab is usually named by the professor name. There could be an associate professor and an assistant professor in some cases for assisting the professor. There could be about 30 graduate students per lab from all over Japan or even from different nationalities. In the last year of the B.Sc. degree each student joins a professor's lab for one year and this is considered as a course work. The reason for BSc students to join a research lab for a year is that , the undergraduate student will attend lab's weekly seminar in which all graduate (Master/PhD) students are reporting their research progress or research obstacles they might be facing and how other student may solved these problems. The outcome of this course for undergraduate students is that he/she becomes familiar with the post-graduate studies system in case he/she intends to continue his/her post-graduate studies.

The role of the professor is maestro who is involved in guiding all students to be on the right track through regular meetings and weekly seminars. Moreover, the professor looks like a father for all students that he helps them to solve their problems, not only research problem but also their daily life or even personal problems. This actually is very helpful for students to feel the fatherhood while they are away from their home-town or even their home-country especially most of the students are from other places in Japan or even from other countries as mentioned before. This feeling of fatherhood is one of the main reasons for students to have good progress. Moreover, the continuous follow-up makes sure that students are always on the right track. This is what we really miss in our Arab World. In our world, we can see

some faculty members dealing with our students in an arrogant way or in a very tough way that makes students hate the subject and finally the student may not pass the course for several years. Let's take a look on the Islamic way of teaching; we have the following Hadith [4] Mu'adh ibn jabal (may Allah be pleased with him) reported the Prophet of Allah (peace be upon him) held him by the hand and said: O Mu'adh, by Allah, I love you and advise you not to miss supplicating after every prayer saying: "Oh Allah, help me remember You, expressing gratitude to You, and worship You in the best manner" The Hadith give the pillars of teaching and the attributes of the right teacher. When the Prophet peace be upon him wants to teach Mua'adh he first expressed his love to him by holding his hand and saying "by Allah, I love you". At this moment the student is ready to accept whatever his teacher says. So, the Prophet peace be upon him started teaching him the lesson.

In conclusion, we have to express our esteem and love to our students. In this way we are preparing our students to accept our knowledge and experiences and finally students will have excellent progress. Follow up is also very important for higher education students to adjust the pace of their progress and make sure that they are on the right track.

Outcomes

Identifying the Japanese teaching strategies in university teaching - Comparing the Japanese system in university teaching with the Islamic system -Studying the possibility of applying the Japanese system in university teaching in our universities.

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Evidence and proof of success and effectiveness

I conducted the experiment on a group of 43 students in Programming 2 course. Programming 2 is considered the most difficult course for students in the college of computer science and engineering. I started the term by announcing for a web page for the course in which a student can find all the course materials. I also gave the students my email address such that they can send me an email if they are need for help. Several students contacted me during the term asking questions and replied them all. I tried also to be flexible as much as possible. For example, if the students have a mid-term exam in the same day of our mid-term exam, I postpone our exam such that they can be well prepared for the exam. By the end of the term the final exam has been conducted and the following results show the total distribution of the students' grades.

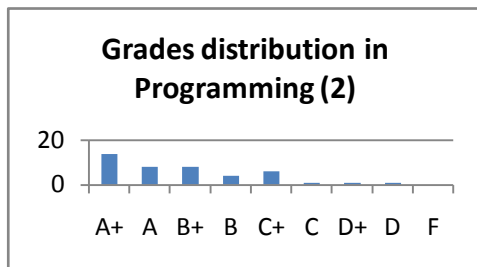


Fig. 1 Students' grades distribution in Programming (2)

I can say that, by the end of the term a strong relationship characterized by respect and esteem has been developed between me and my students. Figure 1 shows the grades distribution of the students in programming (2). It is clear that, 14 students receive A+, 8 received A, 8 students receive B+, 4 students receive B, 6 students received c+, 3 students received C, D+ and D. None received F grade.

Recommendations

Adopting the positive aspects of the Japanese experiment in university teaching in our higher education teaching

References

- [1] <http://www.eda.admin.ch/eda/en/home/eps/asia/vjpn/embjpn/sthe/hej.html>
- [2] Education in Japan, Wikipedia, http://en.wikipedia.org/wiki/Higher_education_in_Japan
- [3] A 2006 ranking from *THES - QS* of the world's research universities
- [4] Hadith Sharif, <http://www.hadithsharif.com/showthread.php?t=581&s=1e3ccc1f74a5a372d2ab7825f9177489>



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Generic Skills :Student's Life Experience in Exercising Learning Contract in Co-Curricular Activities

Affifuddin Husairi Hussain^a

Adi Irfan Che-Ani^b

^a*TWINTeCH International University College of Technology, 52200, Kuala Lumpur, MALAYSIA.*

^b*Centre for Learning Accreditation (PAP), Universiti Kebangsaan Malaysia (UKM) 43600 UKM Bangi, Selangor, MALAYSIA*

Abstract

Universiti Kebangsaan Malaysia has implemented learning contract in the program curriculum since January 2011. The main objective of the implementation of learning contract in the program curriculum is to develop talent and nurture the students' ability in a fun and flexible learning environment. The main objectives of the implementation of learning contract in the program curriculum is to develop talent and nurture students' abilities in an entertaining and creative learning environment. This main objective of this paper is to examine the implication of learning contract's implementation in the curriculum towards student's life among UniversitiKebangsaan Malaysia's students. This paper examines a set of quantitative data drawn from questionnaires distributed to 51 respondents who are the 1st cohort of students that have been exposed to the learning contract in their co-curricular activities and have an experience in implementing new approach. Findings from this research revealed the conflicts of the students in implementing the learning contract for their work life. Therefore, it proposed that the implementation of learning contract should give students the autonomy to design,

organize and execute the activities in the learning contract in a suitable manner which suited the students. Ultimately, by implementing learning contract, students should have the pleasure of experiencing with values of personal growth, meaningful contribution, community building and exemplary leadership with academic achievement

Keywords:

learning contract; students experience; learning accreditation; co-curriculum activities.

Introduction

During the last few years, the higher education institutions are going through a lot of challenges. One of the predominant challenges are due to today's academic qualifications that can no longer guarantee immediate employment after graduation. Instead, graduates are required to show a positive attitude towards the changing job market (Morshidi, 2004). Many questions have been raised such as whether a university degree certificate is no longer a passport to employment and a successful

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career. Indeed, there are a number of studies (Atkins, 1999; Bennett et al., 2000; Gallagher, 2000; Harvey et al., 1997) found that the expectations of employer groups in relation to university education appear to be strongly influenced by the highly context-bound interpretations of desirable graduate attributes, capabilities, competencies and anything alike. The issue of unemployment among graduate has grown its importance in light of the quality of higher education system. In particular, Bennet et al. (1997) illustrated how employers and governments have required higher education institutions to produce employable graduates, equipped with both subject-specific knowledge and skills, and a range of generic skills, which will enable them to function in the work environment effectively. The key rejoinder of this issue is the need for higher education institutions to have a structured programme to develop generic skills, enhance knowledge and prepare graduates to be more attractive to employers. Co-curricular courses can be use as a platform to develop students' generic skills, interest and talent where they do not get or given much opportunity to have/do it in academic courses (Mahoney *el al*,2003; Canham and Bennett, 2002). Activities or projects carry out by students through co-curricular courses help them to improve or build up their problem solving skills, management skills and other generic skills.

Teaching Experience

Goals

Universiti Kebangsaan Malaysia has implemented learning contract in the program curriculum since January 2011. All undergraduate students must involve in co-curricular activities in order to awarded a

degree and it is compulsory requirement as stated in university regulation. Learning contract has been used in co-curricular activities to enhance student's generic skills (Jumali, 2012). The aims of the learning contract in the curriculum is to develop and produce graduates who are well-balanced physically, emotionally, spiritually and intellectually, through life experience in a variety of contexts and the concentration of talent (Pusat Akreditasi Pembelajaran), 2011). The main objectives of the implementation of learning contract in the program curriculum is to develop talent and nurture students' abilities in an entertaining and creative learning environment. It will allow students to have an experiential learning experience and to encourage them to initiate activity genuinely. Participation and appreciation through learning experiences (experiential learning) via activities that are authentic turns the curriculum as a complement of the total learning experience. Students are allowed to plan and carry out activities in accordance to their own creativity and interest.

Importance

Generic Skills Programme is an approach that introduced by the Ministry of Higher Education Malaysia (MOHE). In order for that, the main objective of this programme is to develop human capital in Higher Education Institution. Identically, the programme purposely is to prolong on delineated government agenda in 9th Malaysia Plan (RM to-9) that to produce quality human capital in higher education system. It also interpreted into the *Agenda Kritis Pelan Strategik Pengajian Tinggi Negara* (PSPTN). Generally, the development of generic skill among graduates has become the focus and



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direction of the Ministry of Higher Education (MOHE) and it is used by prospective employers as an added value to graduates. The Malaysian Institute of Higher Learning has developed a framework suggesting the approach that should be undertaken in implementing soft skills. With the implementation of Learning Contract in Universiti Kebangsaan Malaysia, the expected learning outcomes from learning contract activities are to produce graduates who are capable of adapting in various contexts of life experience and are competitive in both local and international market. After going through the learning contract activities in the curriculum, students will be able to demonstrate eight domains of the learning outcomes namely social skills and responsibility; communication skills; information management skills and lifelong learning; values, attitudes, ethics and professionalism; critical thinking skills; problem solving and scientific approach; leadership skills and teamwork; management skills and entrepreneurship skills; and creative and innovative skills

Relation to educational theories and research

The learning contract, developed by Knowles (1980), is known as one of the better tools in facilitating and promoting adult learning. Various educational institutions use it as to evaluate their students' practices (Mazhindu 1990, Quinn 1995). They are not only representing a useful and often powerful way of promoting independent learning and the skills which it develops, but also tailor the courses according to the needs of the specific students (Anderson, Boud & Sampson, 1996). The learning contracts have also been described as, 'the chief mechanism used as

an enhancement of self-direction (in learning).' (Brookfield 1986, p.81) Learning contract is established by shared mutual agreements about what is to be learned, how it is to be learned, when and where it is to be learned and why (Goodman, 2011). The usual learning contract as used in higher education is an agreement that is formally written, between a student(s) and a supervisor, which basically points out what will be learned, the resources and strategies available in helping the students to acquire it, what will be produced as the proof that the learning have occurred and finally, how the result will be evaluated (Knowles, 1975). In addition to that, learning contract facilitates self-directed behaviours through constructing an agreed learning process (Chyung, 2007). Ultimately, the proposed learning contracts are created to be 'contracts to interact' (Barrington & Street, 2009).

Detailed explanation of the stages

The implementation of learning contract is based on the concept of creation of knowledge; it is based on student interest and inclination itself. Creditworthy co-curriculum-based learning contracts makes up for a total of 8 credit hours (320 notional hours) which are University compulsory courses. Students have to complete 8 credits equivalent to 320 hours during the study period. The students can choose from the list of co-curricular activities which they interested to involve in such as sports, community services, art and cultures and uniform-based organisation. The courses have two parts of knowledge. The theoretical part had been taught in classroom and the practical part had been conducted in outdoor setting. Appointed supervisors are to ensure that students under supervision successfully

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achieve the agreed outcomes. Students are given the freedom to choose activities of interest under the guidance of the curriculum supervisors who are lecturers with relevant backgrounds on the subject matter. Students are responsible for designing, planning and implementing all activities/projects in line with the learning outcomes achieved in the learning contract and elect supervisors in or out, to supervise, monitor and evaluate the outcomes. In addition, students are also responsible to achieve all the specified learning outcomes, to decide the affordable credit burden incurred and are encouraged to do extra-curricular activities outside the academic semester. Students can implement their activity or project in various learning centre in the university depending on their interest for enhancing talents and developing skills in a flexible and enjoyable learning setting. Credit value activities/projects undertaken by students will be considered as part of the workload. At the end of the course, student needs to submit their written assignment and present their project.

Outcomes

The expected Learning outcomes from learning contract activities are to produce graduates who are capable of adapting in various contexts of life experience and are competitive in both local and international market. After going through the learning contract activities in the curriculum, students will be able to demonstrate eight domains of the learning outcomes namely social skills and responsibility; communication skills; information management skills and lifelong learning; values, attitudes, ethics and professionalism; critical thinking skills; problem solving and scientific approach; leadership skills and teamwork; management

skills and entrepreneurship skills; and creative and innovative skills. The implementation of learning contract is based on the concept of creation of knowledge; it is based on student interest and inclination itself. Creditworthy co-curriculum-based learning contracts makes up for a total of 8 credit hours (320 notional hours) which are University compulsory courses. Students have to complete 8 credits equivalent to 320 hours during the study period. Appointed supervisors are to ensure that students under supervision successfully achieve the agreed outcomes. Students are given the freedom to choose activities of interest under the guidance of the curriculum supervisors who are lecturers with relevant backgrounds on the subject matter. Students are responsible for designing, planning and implementing all activities/projects in line with the learning outcomes achieved in the learning contract and elect supervisors in or out, to supervise, monitor and evaluate the outcomes. In addition, students are also responsible to achieve all the specified learning outcomes, to decide the affordable credit burden incurred and are encouraged to do extra-curricular activities outside the academic semester. Credit value activities/projects undertaken by students will be considered as part of the workload.

Evidence and proof of success and effectiveness

This main objective of this paper is to examine the implication of learning contract's implementation in the curriculum towards student's life among Universiti Kebangsaan Malaysia's students. The questionnaire has been tested of its reliability, validity and consistency using Cronbach's Alpha test. The population in



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this study was 51 students. The respondents are the 1st cohort of students that have been exposed to the learning contract in their co-curricular activities and have an experience in implementing new approach. Generally, the outputs of this questionnaire survey are to examine the connection between implementation of learning contract in the curriculum and students' life. The data gathered are from the respondents in relation to the objectives. The respondents have been given 5 statements related to their experience in the implementation of learning contract in co-curricular activities. Generally, the majority of the respondents are indifferent in responding to implementation of learning contract with average mean 2.61 (Figure 1). The study found that that majority of the respondents chose to answer 'unsure' for the statement '*Leisure time for socializing is limited*'. Surprisingly, same pattern goes for the statement '*focused for academic learning has been interrupted*' with 47.1%, '*Stressed with learning contract activities*' with 33.3 %, '*time to visit family is limited*' to 36.0% and '*time to rest/sleep has been limited*' with 16%. It is revealed that students are indifferent towards the implementation of learning contract for their life as students. The verdict from this analysis is not very much in support of previous research, namely on the successful use of the learning contract that reported increased enjoyment and freedom to learn with their use (Riseborough 1994, McAllister 1995, Henshaw 1998). This result may be explained by the fact that respondents in this research are from the 1st cohort of students that have been exposed to the learning contract as their co-curricular activities. On the other hand, in response to the last statement '*Nothing benefited to me*', majority 35.3% of respondents totally do not

agree with this statement. This means that even though the respondents felt indifferent towards learning contract which was imposed to them, they still somehow believed that learning contract is beneficial towards their student life and their life in the future. Therefore, these findings provide the following insights for future research on the improvement of implementation of learning contract as a co - curriculum activity. Furthermore, this aspect is the highest percentage of "totally do not agree" statement. It is somehow hold true that the learning contract do benefit the students.

Recommendations

The most obvious finding to emerge from this study is that the learning contract is clearly practical in molding a student's life in learning, but modifications must be made in order for the students to truly appreciate the implementations' advantages. Findings from this preliminary survey also revealed the conflicts of the students in implementing the learning contract for their work life. It is also found that students were concerned with the implementation of learning contract. According to Bailey and Tuohy (2009), student perceptions of the learning contract appeared to have influenced their decision making processes. Therefore, the implementation of learning contract should give students the autonomy to design, organize and execute the activities in the learning contract in a suitable manner which suited the students. Nevertheless, the processes to achieve learning outcomes from the activities must be under the supervisor's supervision. In due course, it will also foster creativity and innovation in decision making. By implementing learning contract, students should have the pleasure of experiencing

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with the values of personal growth, meaningful contribution, community building and exemplary leadership with academic achievement.

References

- Anderson, C, Boud, D and Sampson, J (1996) *Learning Contracts: A Practical Guide*, London: Kogan Page. p.81. Bailey, M.E. & Tuohy, D. (2009) *Student nurses' experiences of using a learning contract as a method of assessment*. *Nurse education today*, 29(7), pp.758–62. Available at:<http://www.ncbi.nlm.nih.gov/pubmed/19428160> [Accessed October 2, 2012]. Barrington, K. & Street, K., (2009) *Learner contracts in nurse education: interaction within the practice context*. *Nurse education in practice*, 9(2), pp.109–18. Available at:<http://www.ncbi.nlm.nih.gov/pubmed/19042156> [Accessed August 26, 2012]. Brookfield, S D (1986). *Understanding and facilitating Adult Learning*, Open University, Milton Keynes. Chyung, S.Y., 2007. *Invisible Motivation of Online Adult Learners During Contract Learning*. *The Journal of Educators Online*, 4(1), pp.1–22. Chyung, S. Y. (2007). *Invisible Motivation of Online Adult Learners During Contract Learning*. *The Journal of Educators Online*, 4(1), 1–22. Goodman, P. (2011). *Organizational Learning Contracts*. New York: Oxford University Press. Jumali Selamat, Khaidzir Ismail, Kadaruddin Aiyub, Z.M. Lukman, Kadir Arifin, Roslee Rajikan, Azahan Awang, Mohd Helmi Abd Rahim, Nor Fadillah Derahim (2012), *Learning Contract : New approach in Assessing and Evaluating Students' Co-Curricular Activities*, *The Social Science*, Medwell Journals 7(4):522-529. Henshaw GF (1998) *How to keep student nurses motivated*. *Nursing Standard* 13(8):43–48. Knowles, M S (1980). *The Modern Practice of Adult Education: From pedagogy to androgogy*, Cambridge Books, New York, cited in Brookfield, S D (1986) op cit. Knowles, M. (1975). *Self-directed learning: A guide for learners and teachers*. Englewood Cliffs, NJ: PrenticeHall. Mazhindu GN (1990) *Contract Learning reconsidered: a critical examination of implications for application in nurse education*. *Journal of Advanced Nursing* 15:101–109. McAllister, M., (1996). *Learning contracts: an Australian experience*. *Nurse education today*, 16(3), pp.199–205. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/8717908>. Pusat Akreditasi Pembelajaran (2011), *Garis Panduan Kurikulum Berkredit Berasaskan Kontrak Pembelajaran*, Bangi, Niagaria Sdn Bhd. Quinn F (1995) *The principles and practice of nurse education*. London, Chapman and Hall. Riseborough R (1994) *Learning contacts in education*. *Senior Nurse* 13(7):22–24.



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A Study Of Educational Simulation For Physics Students At University

O. Dogan

*Necmettin Erbakan University A.K. Education Fac. Dept. of Physics Education 42090
Konya/TURKEY*

Abstract:

Technology is becoming increasingly important in today's all classrooms and has been integrated in a variety of ways; however, computer animations and interactive simulations are among the most common. This popularity is partly due to the fact that simulations are quite easy to introduce into a curriculum. Such simulations have been developed on a large scale by a group of educators working together and on a small scale by individual educators who would simply like to communicate an idea visually to their students. These simulations are specifically designed and tested to support learning. However, what students do with the simulations is as important as the simulations themselves. Simulations may be used in many different types of activities but we believe the simulations are most effective when integrated with guided inquiry activities which encourage students to construct their own understanding. Energy level of an atom is an important topic for modern physics students. Computer simulations are applications of special interest in physics teaching because they support powerful modeling environments involving physics concepts.

This study is aimed to compare the effect of computer-assisted teaching realized from the interactive simulations developed by the some researchers for the interactive-physics program and traditional teaching methods on

the success of the physics prospective teachers and to determine the effect of their concept learning on energy level of atom. After the practice, general achievement in Atomic Energy Levels test increased by 13% in favor of experiment group at ($p < 0.05$) significant level. Research findings strongly supported that computer simulations might be used as an alternative instructional tool to help students develop their understanding of physics and computer simulation is more successful than traditional teaching methods.

Key words: *Computer simulation, computer-assisted teaching, physics education, atomic energy levels, Franck-Hertz experiment, interactive physics program.*

Introduction:

Learning physics is often considered by teachers and students to be a difficult pursuit. Over the last two decades a great deal of educational research has been directed towards the exploration of students' ideas and difficulties on physical concepts and processes[1,2]. Research on physics and science education has often focused on the study of alternative conceptions and mental representations that students employ before and after instruction. Related to the above is research focused on the study of the consequences of special teaching interventions aiming to transform students' alternative conceptions.

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A common research assumption is that students possess a system of beliefs and intuitions about physical phenomena mainly derived from their everyday experience. Such systems of beliefs and intuitions are usually incompatible with scientific theories and knowledge; they have been referred to as misconceptions or alternative conceptions[3].

The use of technology provides students with enriched possibilities to learn and feel closer to subjects in their areas. In this respect, technology plays an important role in a process in which learning and teaching occur. In the course of time computers came into being and were used to design such audio-visual aids as animation through the advances in technology. As a result of this, computer-assisted teaching was made possible. Computer simulation is an interactive teaching method in which computers are used to help the teacher as a teaching aid, to boost student motivation, to help them keep up with their own pace of learning [4]. Harwood and McMahon [5] point out that success will be attained if we can enhance the learning environment through technology-assisted methods which will, in turn, help us teach concepts and terminology hard to grasp. Moreover, an emphasis has been placed over computer simulation when compared with the traditional way of teaching in many articles published in the world [6,7,8,9]. Technology makes it easier for students to comprehend complicated practices and to learn by doing them. For example, experiments carried out by students may cause deaths or injuries in the labs. Instead of doing them in real life, they just use simulated experiments and get the opportunities of grasping the results without actually doing them. In addition to

these, simulations mean less cost, using the time wisely, more safety, and higher motivation [10]. A variety of computer applications have been developed and used in teaching physics, such as computer-based laboratories [11], multimedia [12,13], simulations [14].

The use of computer simulation applications has developed a new research field in physics education, since it has radically changed the framework under which physics teaching is being understood and implemented. Among the various applications, computer simulations are of special importance in physics teaching and learning. In this respect, this paper aims:

1. To measure how the computer simulation developed on atomic energy levels affects the conceptual learning of physics students at university,
2. To compare and contrast how the computer simulation and the traditional teaching methods affect students by carrying out simulations.

Materials and methods

There are two main groups in this research. One of the groups acts as an experiment group and the other as a control group and they are designed randomly. The sample of the study consists of 25 freshman students of Physics Education Department at the A.K.Education Faculty of Necmettin Erbakan University. 11 of them were male while 14 were female. These students taken Basic Computer Course in the second class. The experiment group consists of 15 students and the rest is control group. All the students have been appointed randomly.



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Data were collected through a tool of measurement consisting of four open-ended questions. This tool is based on the ideas suggested by the teaching staff of Modern Physics (Atomic Physics) Course and by those who are experts in the field. In addition, the measuring tool was tested. The computer simulation about atomic energy level at modern physics was selected from the internet site, but this site is not active now. This is very difficult in the traditional ways of teaching. On the contrary, the computer simulation enabled us to measure and understand the flame (source), flame potential, grid potential and current and the quantities changes of these variables while acting. The aimed of this research is to help students grasp the changes conceptually. In other words, students would be able to learn at their pace and to better visualize the abstract concepts.

The measuring tool concerning the atomic energy level was applied to the experiment and the control groups as a pre-test before the main practices were put to use. After that, in a week the experiment group was presented the main practices through computer simulation while the control group was taught through the traditional ways of teaching (expression, question-answer method etc). Each student in the experiment group had access to a computer system in their seating plan. The students were given some information on the menus for Interactive Physics Program and how to use the simulation was given to the students as this was needed for them to act effectively. Furthermore, the students were made to be aware of the basic concepts like flame, energy level, grid potential, positive and negative potential and current. The students used to simulation of Franck-Hertz

experiment, shown in Figure 1, in the system.

The test was graded out of 100 score. All data were analyzed with SPSS 11.0 packet programme. In the final step, both the pre-test/final-test grades within the group based on the dependent t-test and the final test grades among the groups based on the independent were compared.

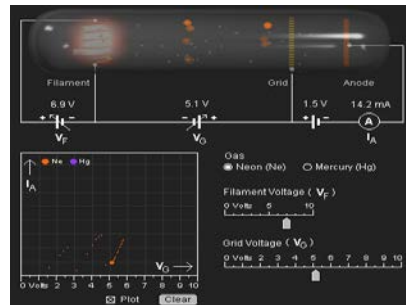


Figure 1. Simulation of Atomic Energy Level with Franck-Hertz Experiment.

Findings and discussion:

The data were divided into 2 subtitles: (1) findings of the pre-test results, (2) findings of the final-test results after the practice.

The weighted average of the results from the pre-test concerning atomic energy level was calculated and the comparison of their achievement was made based on the independent t-test. The results are stated in Table 1. As shown in Table 1, there is no a statistical difference between the groups in terms of the pre-test results ($t(69) = -0.15$; $p > 0.05$). The groups can be said to be equal at the beginning. This equivalence is thought to be useful when we wish to compare the results of the pre-test with those of the final test.

Table 1. The pre-test results of both groups.

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Groups	Stud.	Means	S. D.	t	df	P
Exp.	15	20.42	9.5	-0	69	0.902
Control	10	20.67	6.8	15		

Table 2. The results of the students in both groups on the Flamen (Source), Flamen voltage, Grid voltage and Current.

The results from the final test were evaluated and the values of frequency and percentage were shown. At table 2, the students in the experiment group have a higher percentage of correct answer (*c*) and a lower percentage of incorrect answer (*i*) for each questions than those in the control group. The students answered questions on the Flamen (Source), Flamen voltage, Grid voltage and Current in terms of correct (*c*), partially (*p*) and incorrect (*i*).

We have observed through the measuring tool of atomic energy levels with an aim to see the levels of conceptual comprehension of both the experiment and the control group. The teaching with the simulation applied to the experiment group is more rewarding than the traditional method of teaching applied to the control group.

After calculating an arithmetic mean of the final-test results of both groups, a comparative analysis of the pretest / final-test results are found regarding both groups. The analysis is based on a dependent t-test and a comparative analysis of the final-test results based on an independent t-test.

The average pre-test/final-test results compared on a dependent t-test regarding the

	Flamen (Source)		Flamen voltage				Grid voltage		Current							
	Ex p.		Co nt.		Ex p.		Co nt.		Ex p.		Co nt.					
	f	%	f	%	f	%	f	%	f	%	f	%				
<i>c</i>	5	33	3	30	6	43	3	30	7	47	3	30	6	43	3	30
<i>p</i>	5	33	4	40	5	33	4	40	6	40	5	50	5	33	3	30
<i>i</i>	4	27	3	30	4	27	3	30	2	13	2	20	4	27	4	40

students in the control group can be seen at Table 3. As shown in Table 3, there is a significant difference between the pre-test and the final-test results of the students in the control group ($t(33) = -9.62; p < 0.01$). The difference is in favor of the final-test results. This is what we have already expected.

The average pre-test/final-test results compared on a dependent t-test regarding the students in the experiment group can be seen at Table 4. As shown in Table 4, there is a considerable difference between the pre-test and the final-test results of the students in the control group ($t(33) = -9.34; p < 0.01$). The difference is in favor of the final-test results. This is what we have already expected.

Table 3. The t-test results of the pre-test/final-test comparison based on the students in the control group.

Control	St ud.	Means	St. D.	t	df	P
Pre-test	15	20.42	6.72	-	33	0.000
Final-test	10	30.67	9.31	9.62		



Table 4. The t-test results of the pre-test/final-test comparison based on the students in the experimental group.

Exp.	St ud	Means	S. D.	t	df	P
Pre- test	15	20.42	9.5	-	33	0.00 0
Final- test	10	45.67	15.2	9.3 4		

As is shown in the second columns of Tables 3 and 4, although the results of both groups have been higher when compared to the first achievements, the experiment group has performed better than the control group. The teaching process contributes positively to the success of both groups whereas the experiment group has a higher percentage than the control group. Simulated teaching of atomic energy levels through computer simulation enables the students to do better in teaching concepts than the one through the traditional method of teaching in which teaching concepts is not at an acceptable level.

Conclusion and recommendations:

With the introduction of computers into educational institutions thanks to the rapid changes in technology, computer simulation activities have increased. This work is a contribution to Interactive-Physics which intends to teach atomic energy levels to physics students.

The statistical data indicate that computer simulation is more successful than traditional teaching methods. This result is supported by the studies carried out by [10, 14,15] on science education. Computer simulation must be made common not only in atomic energy levels but in the other subjects of

physics as well. Velocity, acceleration, heat, temperature, intensity of light, electricity, current, basic harmonic motion and other physics concepts can be taught in a shorter time. Taking the misconceptions into account, various simulations can be developed to test the students on different subjects of physics and then it can be observed at what level these misconceptions are corrected. Additional programs and software can be developed as supplementary for the teaching of physics. With the help of some simulations through computer, experiments will be inexpensive, take less time and be safer. If students participate, learning will be more effective, so computer simulation practices will motivate students more easily and make them more willing to take part in the activities in the lab [15,16]. Therefore, this is thought to enhance student achievement in the concepts of physics and all other subjects [17]. It should not be forgotten that computer simulation is not an all-cure solution on its own. It has to be supplemented with related programs. In addition, a teaching plan must be made in detail and the parameters must be set clearly. This is believed to lead to ever lasting learning.

References:

- [1] Driver, R., Guesne, E., & Tiberghien, A. (1985). Children's ideas in science. Milton eynes: Open University Press.
- [2] Duit, R., Goldberg, F., & Nidderer, H. (1991). Research in physics learning: Theoretical issues and empirical studies. Kiel: IPN-University of Kiel.
- [3] Halloun, I. A., & Hestenes, D. (1985). Common sense concepts about motion. American Journal of Physics, 53, 1056–1065.

Excellent Activities and Practices Of University Teaching

- [4] Fraij F (2010). The impact of feedback in computer-aided Instruction. *Int. J. Soft Comp.*, 5(2): 67-71.
- [5] Harwood WS, McMahon MM (1997). Effects of integrated video media on student achievement and attitudes in high school chemistry. *J. Res. Sci. Teach.*, 34(6): 617-631.
- [6] Rong Z, Zhao K (2008). Research and practice of Internet-based intelligent tutoring platform for science teaching, Paper presented in the Computer Science and Software Engineering 2008 International Conference, 5: 442-445.
- [7] Chang CY (2002). Does-computer-assisted instruction + problem solving = improved science outcomes? A pioneer study. *J. Educ.Res.*, 95(3): 143-150.
- [8] Jimoyiannis A, Komis V (2002). Computer simulations in physics teaching and learning: A case study on students' understanding of trajectory motion. *Comp. Educ.*, 36(2): 183-204.
- [9] Hacker RG, Sova B (1998). Initial teacher education: a study of the efficacy of computer mediated courseware delivery in a partnership concept. *Br. J. Educ. Technol.*, 29(4): 333-341.
- [10] Rodrigues S (1997). Fitness for purpose: a glimpse at when, why and how to use information technology in science lessons. *Aust. Sci. Teach. J.*, 43(2): 38-39.
- [11] Thornton RK, Sokoloff DR (1990). Learning motion concepts using real-time microcomputer-based laboratory tools. *Am. J. Phys.*, 58(9): 858-867.
- [12] Crosby ME, Iding MK (1997). The influence of a multimedia Physics tutor and user differences on the development of scientific knowledge. *Comp. Educ.*, 29: 127-136.
- [13] Wilson J, Redish F (1992). The comprehensive unified physics learning environment: part I. Background and system operation. *Computers in Physics*, Mar/Apr., pp. 202-209.
- [14] Andaloro G, Bellomonte L, Sperandio-Mineo RM (1997). A computer-based learning environment in the field of Newtonian mechanics. *Int. J. Sci. Educ.*, 19: 661-680.
- [15] Marshall JA, Young ES (2006). Preservice teachers' theory development in physical and simulated environments. *J. Res. Sci. Teach.*, 43(9): 907-937.
- [16] Sharp JS, Glover PM, Moseley W (2007). Computer based learning in an undergraduate physics laboratory: interfacing and instrument control using Matlab. *Eur. J. Phys.*, 28(3): 1-12.
- [17] Hennessy S, Wishart J, Whitelock D, Deaney R, Brawn R, la Velle L, McFarlane A, Ruthven K, Winterbottom M (2007). Pedagogical approaches for technology-integrated science teaching. *Comp. Educ.*, 48(1): 137-152.



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Directing College Students toward Success: a Longitudinal Teaching Experience from Al-Makhwah Faculty of Science and Arts at Al-Baha University

Abdel Razak Mohamed El-Sagheer^a

^aDepartment of English, Al-Makhwah Faculty Science and Arts, Al-Baha University, Al-Baha, KSA

Abstract

This working paper aimed at introducing an innovative university teaching experience in terms of directing college students toward success by using a longitudinal follow-up plan. The target experience started on 16-10-1431 and ended on 04-03-1434 throughout a period of 2 years, 2 months, and 18 days. The researcher used as a tool of students' evaluation the National Survey of Student Engagement (NSSE) designed to provide institutions of higher education with reliable and meaningful information about higher institutions of education. The innovation of this teaching experience can be seen in enhancing student academic involvement, increasing student persistence, and decreasing the rate of student dropout. Throughout the five levels of undergraduate study, the academic involvement of students began with a percentage of 74.2 in level 3 and ended with a percentage of 77.4 in level 7. Also, the percentage of student persistence was no less than 98 and reached hundred percent by the end of level 7. Finally, student dropout rate was between two and three percent; an acceptable percentage compared to the local and world statistics.

Keywords:

academic involvement, follow-up plan, longitudinal study, student dropout, student persistence

Introduction

With the beginning of the academic year 1431-1432 (2010 – 2011), a newly Faculty of Science and Arts had been established in the governorate of Al-Makhwah under the umbrella of Al-Baha University. As an institution for science and arts, the college has included the departments of Biology, Chemistry, Computer Sciences, Mathematics, Physics, Islamic studies, Arabic Language, and English Language. The researcher had the honor to be one of the faculty members who started working at the department of English language with a first batch of undergraduate students including 47 male students who came from the Preparatory Year where they studied the first two levels of their undergraduate study so as to begin their specialized study at the department of English language in order to get their BA degrees. As a faculty member, two questions came to my mind: (1) What risks may these students face during their undergraduate study before they get their BA degrees?, and (2) What about a longitudinal

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follow-up plan to be used with these students to decrease these risks and assure students' success? The main motivation behind this was the vast local and world statistics about the risks that may university students meet during their undergraduate study. First, according to the conclusions from their analysis of college student expectations questionnaire results, Schilling and Schilling (1999) found out that many students enter college with uninformed expectations that draw apart considerably from those of the faculty. Second, the greatest proportions of students who leave their college study are likely to do so within the first four semesters (Thayer, 2000). Third, it is found that 4 out of 10 students who attended college did not complete a certificate, associate degree or higher; and 1 out of 8 who had attended some college quit before or at the time they earned 15 quarter credits (Adelman, 2004). Fourth, students who attend college for the first time are more likely to have less knowledge of how to apply for college, to have more difficulty in acclimating themselves to college once they enroll, to be less academically prepared for college, and to be more at risk for not completing a degree (Tym, 2004). Fifth, half of undergraduate students drop out before the term ends in less than ten weeks of university study (Alamprese, 2005). Sixth, retaining students in a grade, even in lower elementary grades, provides them with little or no academic advantage and increases the likelihood they will drop out while retention in ninth grade dramatically increases the likelihood of dropping out (Diando, 2008). Seventh, the rate of university students' dropout was nearly 35 % during the past two years (Abdul Aziz Al-Othman, King Saud University, Arab News, 2010). Eighth, university students' dropout rate was

estimated at no less than 30 percent (Abdul Fattah Al-Mushat, King Abdulaziz University, Arab News, 2010). Ninth, the rate of dropouts among Saudi university students reached 60 percent in the last two academic years (Press File, King Abdul-Aziz University website, 2010). Tenth, the dropout rate of Saudi students in foreign universities was much less than those in Saudi universities (Minister of Higher Education, Arab News, 2010). Eleventh, an alarming 10 percent of students drop out of universities in the Kingdom (Ahmad Al-Hariri, King Saud University, Saudi gazette, October, 2011). Finally, the dropout rate in the Preparatory Year reached 30 percent last year (Preparatory Year Deanship, King Saud University, Saudi gazette, October, 2011). Based on the above issues, the current working paper aimed at directing a group of college students toward success through a longitudinal follow-up plan within the framework of Alexander Astin's theory of student involvement.

Teaching Experience

Goals

The main objective of this working paper was to direct the first batch of Saudi college students majoring in English at Al-Makhwah Faculty of Science and Arts in Al-Baha University toward persistence, graduation and success through a follow-up plan by enhancing student academic involvement, increasing the rate of student persistence, and decreasing the rate of student dropout.

Importance

The current teaching experience may be important for college students who are beginning their undergraduate study, faculty members who are working in the field of



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university education, and institutions of higher education.

Relation to educational theories and research

There is nothing as practical as theory. Skemp (1979) has argued that using theories has three advantages: they tell us what is going on beyond those things which are immediately observable; they reduce “noise” and allow us to concentrate on what is relevant for the task in hand; and, by having a considerable degree of independence from the examples and classes of examples from which they were constructed, they enable us to make new paths outwards from our thinking. Within these issues in mind, this teaching experience is guided by a conceptual framework that is mainly based on “student involvement: a developmental theory for higher education” by Alexander Astin, professor of Higher Education and director of the Higher Education Research Institute at the University of California. Throughout such an impact theory, Astin has argued that all the factors that positively influenced students’ success during their undergraduate study could be explained by his theory of student involvement in which he explained the influences that contribute to student’s development. He has also maintained that the amount that a student learns and develops as the result of an academic course or program is directly related to the quality and quantity of three factors: (1) academic involvement, (2) student-faculty involvement, and (3) student-student involvement. Alexander Astin’s theory about student development has been cited as part of the basis for several empirical studies. In 1979, Beal and Noel studied the topic of what works in student retention. They focused on three general

areas: (1) academic stimulations and assistance; (2) personal future building by helping student to clarify their goals and directions; and (3) involvement experiences directed at students. Among the types of retention activities, for which examples were provided, were the following: faculty awareness and development activities, career assistance programs, learning support centers and activities, expanded orientation activities, peer programs, and academic advising. Results found that specific target groups to which action programs may be directed were high-risk and/or low academic performing students, new students, students who are undecided about majors and careers. In 1992, both of Gillespie and Noble investigated – in a longitudinal study - the factors affecting student persistence. They intended to identify student and institutional characteristics related to college freshman persistence. Estimated success rates and accuracy rates of the models for identifying high-risk students were calculated from the probabilities generated by logistic regression. The results supported the view that persistence models are specific to individual institutions and to the time period being examined. In 1996, Jeffrey Alan Hoffman applied Alexander Astin’s involvement theory to student-faculty Interaction. He examined the significance of student-faculty interaction within the framework of Astin’s Involvement Theory. The study asserted that Astin’s ideas successfully brought together theory and practice. The main results found were that there is a need to bringing theory and practice together and that the needs of students can be linked to the needs of the institution. In 2001, Kuh explored the effects of student academic interaction in the 1990s. His study supported Astin’s theory by stating

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that student's interaction motivated students to devote more effort and energy toward educationally purposeful activities. The study found that examined effects of student's interaction on student satisfaction and self-reported learning and personal development gains associated with attending college. Above all, it found that frequency of student's interaction increased from first year through senior year; although its effects were trivial, such interactions had substantial positive effects on students' efforts in other educationally purposeful activities, which contributed to estimated gains and satisfaction. In 2003, Stephen Hunt studied encouraging student involvement. In his study, he revised Astin's theory of involvement and discussed the ways he used such a theory to generate pedagogical practices designed to promote deep learning. He referred that the theory of student involvement posits that students learn more the more they are involved in both the academic and social aspects of the university experience. Moreover, results displayed that students who are involved devote significant energy to academics, spend time on campus, participate actively in student organizations and activities, and interact often with faculty. On the other hand, uninvolved students neglect their studies, spend little time on campus, abstain from extracurricular activities, and rarely initiate contact with faculty or other students. Based on the above, this working paper intends to employ the first type of involvement related to student's academic involvement as such a type of involvement is supposed to enhance students' engagement inside and outside the classroom, to increase the rate of persistence among college students, and to decrease the rate of dropout among the target students.

Detailed explanation of the stages

The current innovative teaching experience has undergone three complementary stages: (1) building up the Astin model-based curricular activities, (2) conducting the longitudinal teaching experience, and (3) applying the student academic involvement questionnaire (Appendix 1). The first stage began with building curricular and co-curricular activities that are based on the principles of Astin's theory of student involvement as it encourages the use of active learning activities through using instructional methods that engage students in the learning process both inside the classroom by involving students in structured exercises and challenging discussions, and outside the classroom by encouraging students to engage with their faculty member during the office hours in case of raising any curricular matters, and with other students and peers through any available communication channels such as email, Facebook or Twitter in case of discussing any co-curricular activities. The second stage was devoted to conducting the longitudinal teaching experience. Throughout such an experience, students were exposed to active learning curricular activities such as structured exercises, challenging discussions, team projects, peer critiques, and seminars. The courses where these activities are described in detail in the next section. They are ordered according to their ordinary taking place during the undergraduate levels of study.

1. Introduction to Literature: As an introduction to the basic literary forms and a continuation at a more advanced level of the reading skills and an application of the writing skills, this course is a preparation for *The Rise of the Novel*, *Appreciating Drama* and



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Appreciating Poetry. Its primary purpose is to provide the students with a foundation of elementary skills necessary for the reading of literature, those skills that will be more fully developed in the two following introductory courses. To achieve its goal, the course concentrates on providing an elementary literary terminology as well as introducing students to a one-act-play, some short poems and a short story. Learning outcomes included identifying concepts, nature and functions of literature, describing the definitions of literary genres, introducing students to the basic literary terms, distinguishing the general background of different literary movements, and discovering the social and cultural background of the different ages in literature.

2. Translation (1): This translation course is used both to enhance students' familiarity with English usage and sentence structure and to point out contrasts between Arabic and English in this respect. Translation (1) is both practical and introductory in nature. As a part of the course learning outcomes, students have understand the main concepts of translation, translate simple sentences and short paragraphs from English into Arabic, recognize the structural and semantic differences between the two languages, comprehend the English language by comparison to their native language, and be prepared for next translation course of translation (2).

3. Translation (2): This course contains the introduction, through translation, of contrasts between English and Arabic sentence patterns and usage. The range of vocabulary is wider and the grammar is more complex in the passages given in Translation (1). This course is also of a purely practical nature. The learning outcomes include improving students' ability to translate English passages to proper

Arabic and vice versa in a given time, teaching students how to use the dictionary effectively to precisely translate difficult vocabulary and terminology within their context, and helping students practice different kinds of passages while emphasizing the importance of remaining faithful to the text in providing a general meaning of a certain passage.

4. Reading (2): This course develops reading skills such as making inferences from facts presented in the reading selections, and separating opinions from facts are emphasized. Its learning outcomes include identifying the writer's audience and purpose, building up the reading rate to handle heavy academic reading load, paying attention to how an author uses figurative language, using different reading strategies and skills while reading, expressing main ideas in readings, utilizing visual features in readings, identifying cause and effect in readings, drawing inferences from reading, distinguishing the main ideas and supporting ideas, and separating opinions from facts.

5. Translation (3): In this course students are expected to handle more complex material, from a wider variety of texts, than those used in Translation (1) and (2). Translation will be from Arabic into English and vice versa. Its learning outcomes consist of teaching students to translate Arabic texts into English and vice versa, teaching students to avoid transferring Arabic stylistics & syntax into their target text, teaching students the proper use of English-English dictionary, and developing a comparative approach between both languages.

6. Research Methods: In this course, students will practice the skills of planning and writing a research paper, including the formulation of a research problem, the use of primary and secondary sources in addition to the

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techniques of documentation. The course presents step-by-step suggestions for writing academic papers that require research from the many sources open to students. It will help them understand the difference between essays and research papers and be familiar with the essential research tools such as bibliographies, indexes, on-line resources, and library catalogs. The learning outcomes lie in familiarizing students with the skills of planning and writing a research paper, including the formulation of a research problem, the use of primary sources, and the techniques of documentation, providing students with step-by-step suggestions for writing academic papers that require research from the many sources open to them, helping students understand the difference between essays and research papers, and acquainting students with the essential research tools such as bibliographies, indexes, on-line resources, and library catalogs.

7. Semantics: This course aims at introducing the students to the following major areas: the scope of semantics, context and reference, lexical semantics, fields and collocation, sense relations, semantics and grammar, utterance meaning as well as semantics and logic. The learning outcomes include introducing students to the basic pragmatic concepts and theories; helping students understand the relationships between semantics and other levels of linguistics such as lexicon, morphology, syntax and semantics; and exposing students to the basic elements of semantics such as pragmatic principles, speech acts and conversation analysis.

8. History of the English Language: The course is primarily intended for senior students with an aim to presenting the historical development of English in a way that strikes a happy balance between internal inflections

and external history - the political, social and intellectual factors that have determined the development at different periods. Students are introduced to the genetic hypothesis (the discovery of Sanskrit and the Proto-Indo-European family), sound laws, and loan words. The relationship between French and English in England after the Norman Conquest forms an integral part of this course. Students are also acquainted with Old English and Middle English. Learning outcomes include helping students to understand the various stages of the development of the English language, familiarizing students with various processes contributed to enrich English vocabulary such as borrowing, derivation, compounding and coining, and assisting students understand the status of the English language by learning about English in the scientific age, English as a world language, and English today and tomorrow. The last stage dealt with building up and applying a student academic involvement questionnaire so as to measure students' involvement both inside and outside the classroom. The target questionnaire included nine items taken from the National Survey for Student Engagement intended to provide institutions of higher education and the public with reliable, meaningful information about collegiate quality. The set items of questionnaire used was selected based on its fit with the constructs measured, appropriateness for the audience, and existing data showing high reliability. The application of student academic involvement questionnaire was done by the end of each level of study so as to measure the degree of academic involvement in the target students. Data collected from the questionnaire was statistically treated and analyzed according to the absolute frequency analysis in order to



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get feedback about the indicators of (1) student academic involvement, (2) student persistent, and (3) student dropout.

Outcomes

The outcomes derived from this teaching experience include (1) this teaching experience is consistent with student-centered teaching approaches in that the student plays an integral role in determining his own degree of involvement in various educational activities; (2) in university teaching, most important to teaching is that instructors are encouraged to take the focus off the course content and their own technique and put it on their students; (3) the intended end of pedagogical practices is to achieve maximum student involvement and learning; to do that instructors must also be aware of how motivated students are and how much time and energy they are devoting to the learning process; (4) the target students approached learning using the achieving strategy of striving to receive high grades, even if the subject is not of interest, by performing the activities typical of good students; (5) the facilitation of meaningful, deep learning is the goal of instruction. Deep learning is more likely in situations where students are highly involved and engaged in the learning process; (6) students learn more the more they are involved in both the academic and social aspects of the college experience; (7) students who are involved devote significant energy to academics, spend much time on college campus, participate actively in student organizations and activities, and interact often with faculty; (8) the most persuasive types of involvement are academic involvement, involvement with faculty, and involvement with student peer groups; and (9) the quality and quantity of

the student's involvement influences several educational outcomes including cognitive learning, satisfaction with the whole college experience, and increased rates of student persistence..

Evidence and proof of success and effectiveness

This working paper covered the extent to which students reported engaging in a variety of curricular activities expected to lead to increased and deeper academic involvement since what students do as they attend class and complete assignments is the key indicator of academic engagement. Students' academic involvement is covered by nine items. The 9 items included are put under the category of academic involvement that may be indicated by individual classroom participation and assignments. The evaluation process was guided by the following question: How frequently do students report the activities related to academic involvement? The following findings are based on data summarized in Tables 1- 6 shown at the end of this working paper. First of all, level 3 of undergraduate study began on 16-10-1431 with 47 students enrolled at the department of English. Based on student's evaluation by using student academic involvement questionnaire and the frequency of out- of- class involvement, the percentage of student's academic involvement reached about 74.2 percent as measured by the end of the term on 29-2-1431 (Table 1). Regarding student dropouts, just one student dropped out of the batch due to unknown reasons. Going back to the student's registrar, it is found out that his GPA was 1.5 out of 4; thus the percentage of dropouts among third level students was about 2 percent. This means that the

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percentage of persistence among 3rd level students reached about 98 percent for those students who continued studying at the department of English language. Second, concerning level 4 of undergraduate study which started on 09-03-1432, the total number of undergraduate students moved from level three to level four was thirty seven students. Eight students failed the subject of Translation which is a prerequisite for the advanced subject of Translation (2). The percentage of student's academic involvement surveyed by the end of level 4 through student academic questionnaire arrived at about 79.1 percent based on data from Table 2. Just one student dropped out as he transferred to a nearby college; thus the percentage of student dropout among 4th level of undergraduate study was almost similar to that of the previous level. This means that the percentage of persistence among fourth level students reached 98 percent for those students who continued studying English at the department of English language. Third, in terms of the fifth level of university study started on 12-10-1432, the total number of university students moved to the higher level was thirty six students. One student failed the subject of Translation (2) that is a prerequisite for Translation (3). The percentage of student's academic involvement as taken from Table 3 reached about 78.7 percent by the end of the term of study on 24-2-1433. Not a single student dropped out by the end of this level of study; so, the percentage of student dropout among 5th level was null. This means that the percentage of persistence among level 5 students was hundred percent for those students who persisted majoring in English at the department of English language. Fourth, talking about level 6 of undergraduate study which began on 05-03-

1433, the exact number of university students was thirty three students. The percentage of student's academic involvement as can be seen in Table 4 reached about 78.2 percent by the end of the term on 16-7-1433. The student dropout of that level was one student giving a percentage of less than 3 percent. This means that the percentage of persistence among level 6 students reached 97 % for those students who are considered persistent students majoring in English at the department of English language. Fifth and last, level 7 of undergraduate study commenced on 14-10-1433 with a total number of thirty two undergraduate students majoring in English at the department of English language. The percentage of student's academic involvement reached about 77.4 percent as it is measured in Table 5 by the end of the term of study on 04-03-1433. No students were found dropouts in this group. This means that the percentage of persistence among 7th level students reached hundred percent for those students who are approaching to graduation and success English at the department of English language in Al-Makhwah Faculty of Science & Arts, Al-Baha University. Looking at the five levels of undergraduate study followed up during this longitudinal study, it is obvious that the teaching experience has yielded its fruits in terms of student academic involvement, student persistence, and student dropout. The academic involvement of students began with a percentage of 74.2 in level 3 but ended with 77.4 in level 7; also, the percentage of student persistence was no less than 98 and reached hundred percent at the end of level 7; and finally, student dropout was seen between two and three percent. This is, of course, an acceptable percentage among



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institutions of higher education compared to the local and world statistics.

Recommendations

The main recommendations that may come out from the current teaching experience include (1) university students' success should be the premium aim of all institutions of higher education; (2) longitudinal follow up practices regarding directing students toward graduation should be conducted particularly with university students; (3) undergraduate students have to be grouped and followed up by their faculty members; (4) there should be studying for the influence of learning theories on the development of undergraduate students; (5) the issue of dropout among university students has to be always watched over among higher education students; (6) regular seminars must be held frequently for developing faculty members regarding curriculum evaluation, production of study guides, mentoring, academic advising, curriculum planning, course organization, developing learning resource materials, and participation in formal examinations; and finally (7) the issue of persistence within undergraduate students has to be always borne in mind by faculty members and institutions of higher education as well.

References

[1] Adelman, C. (2004) Principal Indicators of Student Academic Histories in Postsecondary Education, 1972-2000.: U.S. Department of Education. Washington, DC: Institute of Education Sciences. [2] Alamprese, J.A. (2005) Helping Adult Learners Make the Transition to Postsecondary Education. Adult Education Background Papers. Washington, DC: U.S. Department of Education. [3] Arab News (10 July 2010) University Dropout Rates. Retrieved

December 23, 2012 from <http://www.arabnews.com/node/349946> [4] Arabian Business (11 July 2010) Dropouts among Saudi university students. Retrieved from <http://arabic.arabianbusiness.com/society/education/2010/jul/11/42094/> [5] Astin, A. W. (1999). Student involvement: A developmental theory for higher education. Journal of College Student Development, 40(5), 518-29. [6] Beal, P. E. & Noel, L. (1979). What works in student retention. (A report of the American College Testing Program and the National Center for Higher Education Management Systems). Iowa City, American College Testing Program. [7] Diando, Marcella A. (2008) Preventing future high school dropouts. National education association [8] Gillespie, Maggie and Julie Noble (1992) factors affecting student persistence: a longitudinal study. ACT Research Report Series 92-4, pp. 1-42 [9] Higher Education Academy (2010) Retention and success, Retrieved December 29, 2012 from <http://www.heacademy.ac.uk/retention-and-success> [10] Hoffman, Jeffrey Alan (1996) Applying Astin's Involvement Theory to Student-Faculty Interaction. Lory Student Center, Colorado State University [11] Hunt, Stephen K. (2003) Encouraging Student Involvement: An Approach to Teaching Communication. Academic journal article from Communication Studies, Vol. 54, No. 2. PP. 1-10 [12] Kuh, G. D., Hayek, J. C., Carini, R.M., Ouimet, J. A., Gonyea, R. M., and Kennedy, J. (2001). NSSE Technical and Norms Report. Bloomington, IN: Indiana University Center for Postsecondary Research and Planning. [13] Saudi gazette (2011, October 5). 10% dropouts in Saudi universities. Retrieved December 22, 2012 from <http://www.saudigazette.com.sa/index.sfm>. [14] Schilling, K. M., and Schilling, K. L. (1999). Increasing Expectations for Student Effort. About Campus, 4(2): 4-10. [15] Skemp, R. (1979). Intelligence, Learning, and Action. Wiley, Chicester, England. [16] Thayer, Paul B. 2000. Retention of Students from First Generation and Low Income Backgrounds (ERIC ED446633). Opportunity Outlook (May), 2-8. [17] The Press File (July 10, 2010) the rate of dropouts among Saudi university students. Retrieved December 23, 2012 from http://www.kau.edu.sa/press_file/html. [18] Tym, Carmen et al. (2004) First-generation college students: a literature review. Research and Analytical Services. PP. 1-22

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Business game and teaching of management : assessment of an experiment in the School of Management

Ahmed CHAKIR ^a

^a *National School of Trade and Management (ENCG) Ibnou Zohr University Agadir. Morocco*

Abstract

This paper will define the concept of the business game and its pedagogical contributions in the acquisition of sciences of management, and will give an assessment of an experiment undertaken by National School of Trade and Management (ENCG) of Agadir to develop its own software of management simulation of the firm : game "CHEMS". This game tries to develop different aspects ranging from finance to marketing , strategy and inventory control. In the light of this experiment, we come up with the main teachings drawn from the introduction of this method into the curriculum of the ENCG. .

Keywords:

Simulation, assessment, business game, pedagogical contributions.

Introduction

A pedagogical game is a tool designed to facilitate the acquisition of knowledge and savoir-faire in a field given while emphasizing on the interconnection of the problems dealt with. In the field of management this tool takes the name of the business game or management simulation. Indeed, there are many games in the field of management, which aim at showing how the firm works, while guaranteeing the

synthesis between different disciplines and the interdependence between all the decisions of management. This pedagogical tool focuses on a model of computerized business game and helps to set the business game in teaching . Simulation puts in competition several teams which represent many firms. Each team plays the role of a firm, and each one inside the team plays the role of a decision maker. The teams are in competition but with existing interdependence between them and their environment. .

Teaching Experience

Goals

The development of a business game with the ENCG of Agadir aimed at :

- Differentiation of the ENCG-Agadir by the development of a typically Moroccan business game;
- Appropriation of the methodology of creation by the teaching staff of the ENCG due to an autonomous development;

Importance

One of the major limitations of management education is the partitioning of the lessons, students have the opportunity to learn management in its entirety and complexity. We have emphasized the importance of transcending the divisions between academic disciplines.

The business game is the most appropriate



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educational tool allowing students to take responsibility for activities in a business whose operation is reproduced.

* To discover the interdependence of teaching lessons, activities, skills.

* To introduce the concepts and laws of operation of a business, organization of work.

Relation to educational theories and research

In relation with the theories of education, business games is part of active teaching methods. In brief, one can list the pedagogical contributions of a business game as follows:

- Simulation proceeds of pedagogy by "experience" and "error": during a business game, the players learn from what they do, they are confronted with the problems and the concepts in action. They must always be in a position to understand their errors and to correct them . So ,It is an active pedagogical method where the error is seen as necessary,

- The player-learner is in the centre of the process of learning : highlighting the fact that the group is a source of learning, the game constitutes a very open context of learning, where the animator-instructor rather plays the role of facilitator of acquisition much more than that of a provider of knowledge. Thus a great part of the acquisition comes from the interaction of the answers between the players-learners;

- The business game strengthens the motivation for learning : all the teams have as an ambition for success. This desire constitutes a real support of motivation : the interactions between players, who fall under a system of co-operation (between the members of the group) and of competition

(between the teams), are sources of motivation allowing the participants

Detailed explanation of the stages

Development of a business game: presentation of the experiment After having exposed the pedagogical contributions of the business game, we present, in this part, the experiment of the National School of Trade and Management (ENCG) of Agadir carried out together with Audencia School of Management (Nantes-France) concerning the development of its own software of business game.

Brief history Benefiting from the assistance of a well-known organization (National Foundation for the Teaching of Business management (FNEGE)), pioneer in the field of transfer of the teaching of management, the School of Management (ENCG Agadir) strengthened its co-operations with a number of French institutions in the field of teaching of management in the double field of pedagogy and research. The process of pedagogical cooperation was characterized by two phases:

First phase: To know and get familiar with the new pedagogical practices. In order to make it possible to introduce the new pedagogical practices in management, the ENCG took hold of two points:

-The acquisition of a list of pedagogical items (the case studies covering all disciplines of sciences of management, business game) ; -The animation of seminars related to case studies and games of simulation by foreign experts. This phase had major consequences: It enhanced the young teaching staff of the importance of integrating these methods (in particular the

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business game, and method of the cases) in the process of learning at school; It maintained and reinforced the interdependence of different sciences of management. In this respect, it strengthened coordination between the various departments by facilitating disclosure between the various disciplines; It gave rise at last to the emergence of the will of certain teachers to acquire competences necessary for the improvement of their own pedagogical methods .

Second phase: appropriation of the methodology of the creation and use of the pedagogical innovations The imported pedagogical material from abroad is highly incompatible with the context of the Moroccan firm (legal regulation, system of accountancy, entrepreneurial culture, etc) and can be expensive for the institution. With the aim of overcoming these problems, the ENCG encouraged several teachers that expressed their will to develop pedagogical tools by:

- Organizing training courses abroad and workshop seminars given by experts;
- Encouraging `integrated actions` dealing with didactic resources. It is within this frame that a project of the development of a business game was carried out by a group of teachers with the assistance of the Audencia School (Nantes).

Presentation of the project

-Team in charge of the project : The concerned team of professors of ENCG is composed of four people representing different disciplines (a financier, an economist, a data processing specialist and commercial) under the supervision of a professor from the Audencia school Nantes specialized in new educational technologies.

The assistance of the Audencia school Nantes equals 12 days distributed between 4 missions (2 as interns and 2 into external) over the year (November 2001- December 2002)

- Methodology of work : Concerning the formalization of the process followed throughout the seminar-workshops, we can bring out some major elements :

a) The adopted method was deliberately collective. I.e. each stage, from most to least important, was discussed deeply, sometimes took long time, during which each participant in the project could put forward his ideas and his arguments, before coming to a group decision, sometimes unanimous, sometimes simply of the majority, but in any case always accepted by the group.

b) The same also was for programming of the game. All the stages were approached in a collective way, using a screen of data shows so that all the participants can see understand, comment on and ultimately to adopt the actions undertaken. c) The problems were tackled one by one, as they were raised and not to a prescheduled plan .we considered this method as the best way of demystification in the process of the making of the game. Indeed, the major idea of the seminar being, not only the creation of a game, but the transfer of methodology of creation, it seemed to us interesting to be in the position which is that of an autonomous responsible of the project : to start simply with his ideas, sometimes a little given in bulk, and to manage progressively to formalize a structure starting from these ideas.

d) In addition, we insisted on the fact to integrate in the process of creation an "under



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process" of memory, if one can say that. I.e. each time that an interesting remark was made by one or the other of the participants, that an original idea was put forward or that a discussion in depth was established, the produced useful information was classified and stored in a log book integrated into the Excel program which we work with. These various orientations did not certainly help the creation of the game itself at the beginning. But we consider them essential from the point of view of a real division of the methodology of creation, and in the appropriation of the game by all the participants.

Outcomes

The principal remarks and conclusions, which we could deduce from the experiment we lived, can be listed as follows: *On the level of the students* :

-The simulation-test for a reduced group of students made it possible to make a first assessment of the game by students. -The animation and the support set up give satisfaction overall. Indeed, the students underlined the quality of the contribution of this game compared to the existing game (imported). They highlighted the importance of the "marocanisation" of the game Chems treating all the aspects of management in a complex and coherent way according to the context of the Moroccan firm.

On the other hand, a major remark must be raised; it is that the students are not well prepared for this new active method in high school. This makes the spot of the animator more difficult. The latter must lead before actions aiming at familiarizing the students with the principles and the requirements of

such a teaching approach. (view the results of the assessment to students in the following paragraph)

On the level of teachers : After this experiment, the teachers implied in this project learned that they were the factors to be taken for the development of a new business game. In addition, they stress on the advantages of such a collaborative work and its feedback on our system of teaching. What concerns the positive aspects, these teachers emphasize that it is pleasant and interesting to organize exchange meetings to facilitate the process of disclosure of the disciplines and competences. They were very interested by the installation of "circle of dialogue" that unites competences coming from the different departments aiming at encouraging the multidisciplinary team work in the key fields of pedagogy and research in management. What concerns the negative points, we mention the significant workload here that the conception, animation, the evaluation and the follow-up represent especially in a place where you have a large number of students, and logistics equipment is limited. Facing this situation, it is necessary to be interested in new technologies and the prospects that they offer to us. One could possibly animate the game with our students in interactivity via the Internet

On the level of the school : The realization of this project constitutes a concrete example of what should be the international co-operation in the teaching field and of research. The result of this project led the school to re-orientate its policy of opening to international co-operation. The main aim is to pass from a system of consumption and transfer of the pedagogical tools to a system

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based on a balanced partnership supporting the appropriation and the production of their proper didactic resources.

Table 1: Summary of the quantitative evaluation

	Average	standard deviation
-Organization (logistics, structure, rhythm)	3,88	0,73
-Teaching method (animation, illustrations, applications)	4,06	1,00
-Inputs (domain understanding, interest)	4,39	0,92
-Your level of personal effort (work, involvement, participation)	4,56	0,66
-Overall satisfaction with the continuous	4,5	0,59
-Overall satisfaction with the animation	4,26	0,67

Table 2: Summary of the qualitative evaluation

positive aspects	negative aspects
Group work, practical nature than theoretical learning new knowledge, entrepreneurship, game rewarding and instructive strong personal involvement, use of theoretical tools used in class, imaginative work, understanding of the business context, observing the impact of decisions on the performance of the business, relaxed atmosphere, negotiating with banks, co-facilitators	General lack of organization and logistics, lack of use of computers by students, lack of facilities, inadequate time for decision making, insufficient time between the distribution of the manual and the beginning of the animation, random digitizing groups, sometimes ambiguous information, weak commercial aspects by reports on the financial aspects

Evidence and proof of success and effectiveness

Synthesis of the evaluation of business game "Chems" by students

Recommendations

The development of the game Chems mobilized energies of a team of five teachers to imagine a pedagogical tool offering an effective mode of learning based on experience and whose objective is to put into practice and in dynamic interaction the concepts and the techniques of management previously seen in an isolated or static way. This game is considered, thus, like a tool for synthesis of all the disciplines related to the business management in a systemic approach and in a ludic and motivational frame.

In addition, it would be useful to stress that the success of a business game can be measured according the pedagogical objectives that were assigned to him if they were achieved or not. The fact that the "ongoing" of the game is positive but it does not guarantee achievement of the objectives. Thus the major risk which affirms this tool is precisely "the game for the game" and to forget about the pedagogical objectives. A business game is designed with an aim of supporting acquisition of knowledge and savoir-faire in a given field. It is an investment. That is to say the importance which one must give to its evaluation before any use. Also, it is essential to answer the following questions:

- Are pedagogical objectives clearly set ?
- What are the activities which make it possible to reach them? - Do they stimulate the contributions of knowledge necessary to



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the comprehension of the topic ?

- Does the operation of the game support the formative or mutual evaluation ?

The answer to these questions will be the subject of a later research aiming at measuring the reality and the importance of the contribution of the game "Chems" developed and used as a pedagogical tool by the ENCG of Agadir.

References

[1] Angehrn A. and Nabeth T. (1997) "Leveraging Emerging Technologies In Management Education : Research and Experiences" European Management Journal 1997, Vol. 15, Iss 3, pp 275-285.

[2] Duffy T. and Jonassen D.h. (1997) "Constructivism and Technology of Instruction : a Conversation". Hillsdale, N.J : Lawrence Erlbaum. Pp. 17-34

[3] Fritzsche D.J. (1987) "The impact of microcomputers on Business Educational Simulations". Simulation and Gaming, Vol 18 (2), June, pp. 176-191.

[4] Keys B. and Wolfe J. (1990) "The Role of Management Games and simulations in Education and Research". Journal Of Management, Vol 9 (2), pp.307-336.

[5] Steppi H. (1990) "Computer based training : Planing, Design and Entwiccklung Interactive learnprogramme". Klett Verlag, 1990.

In addition, this research fitting in the field of the research on the pedagogical practices in Management, and particularly those fascinating of account new educational technologies, we will quote, hereafter, some academic reviews dealing with the subject : -European Journal of Education Educational Technology,

-Research and development Reflections on higher education -Research in Sciences & Technological Education, - Revue de L'enseignement à distance,

- Revue Française de Pédagogie,

-Training and Development Journal, etc.

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A Constructivist Approach to Teaching Introductory Physics to Non-Physics Majors

Hussein M Elmehdi

Department of Applied Physics, College of Sciences, University of Sharjah

Abstract

The applications of the innovative constructivist approach for teaching and learning introductory physics and its impact of improving the performance of students will be presented. The approach stemmed from the reported difficulties college students encounter when taking introductory physics course, where it has been reported that 86% of first college students (non-major) believe that physics is the most difficult course they had to take and it is not related to their field of study. Since the first years of the author's tenure at the University of Sharjah in 2005, it became apparent that the traditional teaching approaches needed to be reviewed (or updated) in order to assist students to gain better understanding of physical concepts and improve their performance in these courses. In the subsequent years (2006-2011), the author has developed a multi-dimensional constructivist teaching and learning approach that included the introduction of several in-class teaching and learning activities, improving the assessment tools and incorporating IT tools into teaching and learning as well as in communication with the students. Quantitative assessments of the effectiveness of the constructivist approach have shown an annual gradual improvement not only in students' performance and achieving prescribed course outcomes, but

also in students' perception and attitude towards introductory physics and its relevance to their field of study.

Keywords:

teaching and learning, introductory physics, students' performance, course outcomes, constructivist approach

Introduction

In a survey of non-physics-major, college freshmen at the University of Sharjah, UAE, which was performed in the academic years of 2005-2006, the author reported that 86% of respondents reported that the most difficult subject that they were taking was Introductory Physics[1]. What is alarming is that more than 80% of the students, who said that Intro-Physics is difficult, believed that it has no relevance to their respective fields. In addition, the passing percentages as well as the overall class average were considered very low, considering the fact that most of these students had attained very high grades in high school physics. Complaints from students, parents and administration have prompted the author to investigate reasons behind low performance and students negative perception of introductory physics. It was apparent from the onset that the onus was on the instructor to be creative in simplifying the seemingly difficult physical concepts and phenomena using untraditional



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teaching and learning approaches. In addition to improving teaching and learning approaches, it was apparent that traditional assessment tools needed to be revised. In an attempt to deal with the situation, the author developed a constructivist approach that was carefully designed to enable instructors achieve the prescribed course outcomes. The constructivist approach is comprised of several steps that include innovative teaching and learning activities with the prime objective of delivering the course in such a way that help students attain high grades and achieve the objective and course outcome. The main ideas and activities of the constructivist approach include the following areas:

1. At the beginning of each semester the course was divided into 8 modules, each of which include two-three chapters. These modules were given titles to emphasize the concept(s) they cover. For example, Module I covers the first three chapters, and few sections from chapters four and five (circular motion), all of which describe the motion of objects in one and two dimensions. Modules were introduced and taught using a 4-step approach. The first step was a few statements outlining the objective(s) of the module. For example in Module I, the objective is to be able to describe the motion of an object moving along the horizontal or vertical plane. In step two, the students were asked students to identify the parameters they need to use to describe the motion of the object. This was usually done in a discussion-like session, where students are divided into small groups and asked to report the outcome of their discussion. For example, in Module I (motion), the

parameters needed to fully describe the motion of an object are: distance (or displacement), speed (or velocity), acceleration and duration (time). The instructor then spends the rest of the lecture explaining the definition of each parameter and how it is calculated. This is done with the aid of simulations and illustrative multimedia diagrams, which are widely available on the Internet. The main site the author uses is that of the University of Colorado Boulder, i.e. PhET [2], which is considered to be the leading website in this field and used extensively around the world. In step three, the author derives the mathematical relationships relating these parameters. The focus in step four is not on the derivation, but rather on understanding the conditions, limitation and the situations under which these expressions can be applied. For example, the main mathematical expressions relating the motion parameters are:

$$\mathbf{v}_f = \mathbf{v}_i + \mathbf{a}t \quad (1)$$

$$x_f = x_i + v_i t + \frac{1}{2} a t^2 \quad (2)$$

$$v_f^2 = v_i^2 + \Delta x 2a \quad (3)$$

1. The emphasis here is on what each parameter means, its unit and possible values. For example, starting from rest means $v_i = 0$ m/s, an object came to a complete stop means $v_f = 0$ m/s, and an object moving with constant speed means $a = 0$ m/s². In addition, the concept of uniform acceleration is further examined in everyday life. The objective of these steps it to enable the

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students to understand the concepts covered in class and how to apply them in real-life situations. The fourth and final step in the author's constructivist approach is to apply these expressions in physical situations, which are usually presented in the form of scenarios in the form of numerical problem. The instructor first solves two or three situations covering as many concepts as possible. After that, the students are given a set of additional physical situations in the form of a worksheet, and asked to use the provided mathematical expressions to fully describe the motion of that object. The objective here is to help students connect what they have learnt to the objective that was clearly stated at the beginning of the module. These worksheets contain modified questions from the end of the chapters. Students are asked to work in groups and discuss the solutions of these situations and report their answers either in class on the board or hand-in their solution as homework. The worksheets are done during in a "free class", during which students work in groups to discuss the solution. This is different than the traditional tutorial classes where the instructor solves some end-of-chapter problems. The difference here is that the students are engaged in a peer-to-peer discussion in the presence of the instructor who is available to answer questions and provide guidance. At the end of the session, students hand in their answers, which are graded and given back along with detailed feedback. Before moving to the next module, students write a quiz on the material covered in that module. The

questions in the quiz include conceptual multiple choice questions, one-step questions and long answer questions that uses critical guided thinking approach [3].

2. The constructivism approach lies heavily on various in-class activities, which aim at helping the students to gain better understanding of the concepts taught in every class. These activities included incorporating group learning, peer-to-peer teaching, simulations, multimedia demonstrations, and short videos illustrating these concepts. Modified Team Based Learning (TBL) sessions are administered in some occasions when discussing some topics where a TBL problem can be formulated.
3. To facilitate teaching and learning, the constructivist approach employs Web-Based Homework Delivery (WBHW) environment to assign homework problems to the students. These assignments were given over the Internet on weekly basis using Web-Based Homework Delivery Software systems (WhileyPlus), which is a new form of Course Management Systems (CMS) environment provided by the publisher of the textbook. The website contains a bank of problems, some of which are solved and various teaching and learning activities. It was reported that WBHW delivery systems helped students to improve their performance by up to 5% [4].
4. To make sure that the students were assessed properly, the author introduced various assessment tools.



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The tools were introduced to make sure that the students were assessed in a manner that reflects the expected educational course outcomes. In the first years of the project, the author found out that traditional approaches assessed the students in one or two of the expected learning outcome, as it was evident by the students' performance in standardized tests such the Force Inventory Test (FCI) [5]. The quizzes, tests and exams were improved so that they include questions that assess the proper skills of the students as well as their conceptual understanding and comprehension of the concepts covered. The improvement included the introduction of critical guided questions, short research projects and case studies [6].

5. The constructivist approach included continuous evaluation of the course. This is usually done *via* a survey questionnaire conducted over the Internet using Google Documents. Students were asked to answer the survey questions anonymously and the instructor examined the results. The survey provided valuable feedback for the instructor, which enabled him to dynamically assess the progress of the teaching and learning approach and introduce modifications and updates when necessary.

The approach has proven to be effective, as it will be shown in the subsequent sections of this paper. Contrary to what many colleagues thought, the approach does not require a lot of effort nor it requires additional time. In fact, more material was covered than what was usually covered using

traditional teaching and learning approaches. This is mainly attributed to the efficiency in delivering the material and the ability to combine several sections and chapters together, avoiding repetition.

Goals

The goals of the innovative teaching and learning approach include:

1. Present physical concepts and phenomena taught in the courses in a simple and appealing way, which emphasizes the link among these phenomena and everyday applications without compromising the scientific value and the quality of the education. This was achieved by incorporating short videos, simulations and interactive exercises into teaching and learning.
2. Incorporate the readily available IT and Internet tools into teaching and learning (e.g. Web-Based Course Management Systems (CMS)). Some of the advantages these tools provide include:
 - Improve communication between students and instructors.
 - Conduct homework and short quizzes online using Web-Based Homework Delivery Systems.
 - Use IT tools to provide students with prompt and frequent feedback, which allows students to follow their progress and performance on regular basis.
 - Provide continuous evaluation of the course using Open Source IT tools such as Google Docs.

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3. Increase the students' interaction and encourage participation during the class time, which is found to influence students' grasp of the material. This was achieved by introducing Team Based Learning sessions into teaching and learning (usually one session per chapter) [7].
4. Encourage engagement and peer teaching, which proven to be the most effective teaching methodology [8].
5. Using creative assessment tools, such as critical guided thinking approaches, to improve students' performance. In addition, students' performance is also evaluated using Standard International Tests such as Force Concept Inventory (FCI) tests.
6. Improve the link between the assessment tools and expected course outcomes, especially in properly assessing the skills students are expected to gain during the course.

Importance

There is no doubt about the importance of physics in every aspect of applied sciences, especially in engineering and medical sciences. In this day and age, where education and research has become a multi-disciplinary in nature. This has prompted engineering as well medical and health sciences colleges to introduce more physics courses in their curricula [9]. However, students still are not at ease with these courses because of the difficulty they

encounter in understanding the concepts and physical phenomena covered in these courses. This further compounded by the lower grades and low passing percentages reported in introductory physics courses. While some researchers contribute this to the nature of the subject matter and its mathematical requirements, others strongly suggest that classic rigid teaching approaches are the reason behind making this seemingly interesting subject difficult to understand. Whatever the case may be, the onus is on us as physics educators to continuously look for ways to improve and update our teaching methodologies to meet these challenges. In addition, with the introduction of IT tools and advances in teaching and learning tools, there is a dire need for improving the teaching methodologies in physics to assist the student better understand these seemingly difficult topics. The importance of the introduction of our constructivist approach stems from the realization that we need to introduce physics, especially introductory courses, in such a way that easy to understand, attractive and very relevant to every day applications.

Relation to educational theories and research

The research papers published in the literature, which present innovative teaching approaches in physics, are numerous. Most of these approaches are based on personal belief that learning is more effective when learners are engaged in cognitive processing as well as participating in social action when learning physics. This has been noted in several research articles such as Driver et al. 1994 [10], Posner et al. 1982 [11], and Salomon and Perkins 1998 [12]. Learning



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physics is different than learning other subjects such as humanities because students are expected to learn additional skills such analytical skills, which are needed to for solving problems. The latter is an integral part of any physics course. This demands students to become accustomed to the culture and be proficient in using rules and artifacts of the scientific community (e.g. language, tools, symbols, mathematical manipulations), which are usually discrepant to those of everyday usage (Roth et al. 1997, Brown et al. 1989, Hennessy 1993). In accordance with the constructivist view of learning, in addition to lecturing (presenting knowledge), teachers are also expected to be creative in providing questions and problems that stimulate students to think, to negotiate, and to modify their understanding (meaning-making), mediated by experienced peers or teachers [13].

There have been a number of attempts by physics educators to develop new teaching approaches in physics. These can be grouped into the following three approaches, depending on their focus and features:

- The first approach focuses on devoting more time for explaining concepts to students and much less time on analytical or problem solving skills. Example of research papers promoting this approach include Heller and Hollabaugh 1992 [14] and Sharma et al. 1999 [15].
- The second approach focuses on providing additional time for student engagement through small group and peer discussions. Examples of research papers

promoting such approach are Mazur 1996 [16] and Mills et al. 1999 [17].

- The third approach focuses on monitoring the learning process and emphasizing periodic and consistent feedback. An example of a paper promoting such approach is that of Beichner et al. 2000 [18].

These approaches have shown improvements in students' performance in some aspects, especially in conceptual comprehension of physical concepts. The results of the assessment of students taught using such approaches were visibly higher than their peers taught using traditional teaching approaches as shown by the papers of Gautreau and Novemsky 1997 [19], Fagen et al. 2002 [20], Meltzer and Manivannan 2002 [21].

However, there are several drawbacks of such approaches. These include:

1. Most of these approaches focus on improving conceptual understanding and comprehension of physical phenomena and pay little attention to problem-solving skills. The latter is listed as one of the main course outcomes in introductory physics courses, especially in engineering programs.
2. Most of the teaching innovation programs in post secondary physics reported in the literature were conducted in Western countries, which may not be applicable to students in the Gulf Region. For example, one challenge that has been pointed out in previous

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research is the diverse background of the students enrolled in universities across the United Arab Emirates, where schools are equally divided among three educational curricula, i.e. the British curriculum, the American curriculum and the National (local) curriculum [22]. The latter of which is taught mostly in Arabic.

3. There are several reported obstacles in implementing such approaches. The first of these obstacles is the difficulty conducting inquiry-type questions for group discussions, which is not easy to achieve at early stages of the students' education [23]. The second obstacle is the apparent mismatch between the focus of these innovative teaching approaches and the existing assessment tools. Regular standardized tests tend to assess factual recall, which may encourage quick learning and obscure the outcomes of constructivist teaching, such as multiple forms of thinking [24]. The third reported obstacle arises because of the fact that innovative teaching and learning approaches puts more emphasis on independent learning and participation in learning [25]. This is not received by students who are reluctant to take responsibility for their learning or do not like to participate in class discussions [14]. This is more evident in cultures, such as the Gulf Region where traditions and social and cultural values have to be considered.

In summary, while there have been a number of studies published in the literature reporting innovative constructivist approaches for teaching and learning physics, these approaches need to be refined to account for scientific, educational, social and cultural drawbacks. In the Gulf Region, and to the author's knowledge, there have been no attempts to formulate a constructivist approach, not only the field of physics, but in basic sciences and mathematics. This will make the reported approach the first to report the results of a constructivist teaching and learning physics in the UAE, which can be taken as a model that can be implemented in the Gulf region.

Detailed explanation of the experience

The present teaching and learning approach is based on innovative teaching and learning experiences published in the literature, some of which are mentioned in the previous section. Our approach introduces additional activities aimed at strengthening the connection between the topics covered in class and the course objective and expected learning outcomes. The design of the approach was laid out to account for the course length, topics covered, existing assessment tools and available infrastructure including Internet and IT tools provided by the university. The main features of our innovative approach may be summarized in the following points:

- Grouping the course content into several modules, depending on the overall objectives of the course and the assigned weight in the learning outcomes.



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- Dividing the time allocated for the course (45 lectures, each 50 minutes long) relatively among the modules and the associated activities.
 - Presenting the topics in four-step teaching and learning strategy. Step one includes stating the objective(s) of the module. In step two, the physical parameters needed to achieve the objectives are introduced and defined in the context of the objective. In step three, which found to be the most challenging, the mathematical relationships and expressions relating the physical parameters are derived and examined for limitation and conditions under which they can be applied. Step four involves applying these expressions and mathematical relationships to solve real-life situations. This step usually started by the instructor solving a few simple examples, with the aim of guiding the students and showing them the appropriate approach to applying these expressions, highlighting some of the pitfalls and tricks.
 - To explain the physical concepts and phenomena, the instructor uses a variety of tools including simulations, short videos, and oftentimes, scientific fun games and tricks.
 - Realizing the difficulty large number of the students has with the textbook, the instructor compiled a set of complementary notes
- students can resort to for short and concise explanations of concepts covered in various topics.
 - The instructor then hands out a worksheet containing conceptual questions and problems in the form of MCQ's, long answers and essay questions. The students are asked to go over these questions and prepare to solve them during class in small groups. A free and open class is allocated for each module during which students gather in their groups and solve or answer the questions and problems assigned in the worksheet. Students were assigned randomly, which found to be the most effective approach that promotes healthy educational discussion and avoiding distractions.
 - Additional homework problems and practice quizzes were made available to students on weekly basis using Web-Based Homework Delivery software systems. The instructor assigns a set of problems over the Internet to complement the questions and problems given in the worksheets. This provides students with additional material to practice with. The solution for these problems is posted and hints are readily available online *via* the web-based environment.
 - At the end of each module the students write a quiz to assess the learning outcomes in that module.

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The quiz questions are a mix of conceptual as well as numerical problems covering the physical concepts covered in class. The quiz also links the questions to stated objectives of the module. The instructor grades the both of the worksheet and quiz and provides written (or oral) feedback to the students.

- The approach also relies heavily on dynamic evaluation, where students are asked to evaluate the progress of the course at least three times during the semester. This done through survey questionnaires, which were conducted using Google Documents and take very little time to answer. These surveys were very instrumental in providing feedback that was used to improve the approach. They were very instrumental in improving and refining the teaching and learning approach.

Outcomes, evidence and proof of success and effectiveness

The positive outcomes of the teaching and learning approach are evident not only in the noticeable improvement in the students' performance, but also in the course evaluation and feedback. The latter can be taken as a parameter to gauge their acceptance of the approach. The first evidence of the positive outcomes of applying our approach is the improvement in the students' performance in in-class quizzes. These quizzes were administered to the students after the completion of all the teaching and learning activities, including

the worksheets and web-based homework assignments. Figure 1 shows a comparison of the performance of the students taught using our approach and a second group of students taught using traditional approaches [3].

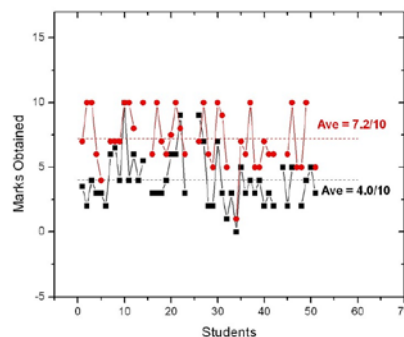


Figure 1. The improvement in students' performance in quizzes using our innovative approach (red) in comparison to the performance of students taught using traditional approaches (black).

There is no doubt that there is an improvement in the overall performance of the students as it is evident by the 3-point increase in the class average. It should be noted that the quizzes contained the same questions for both groups, both of which were taught by the same instructor in different years.

When the students' progress (achieved grades) were monitored in the latter years since we started implementing our approach, students taught using our constructivist have generally attained better grades. The results of the comparison are shown in Figure 2.

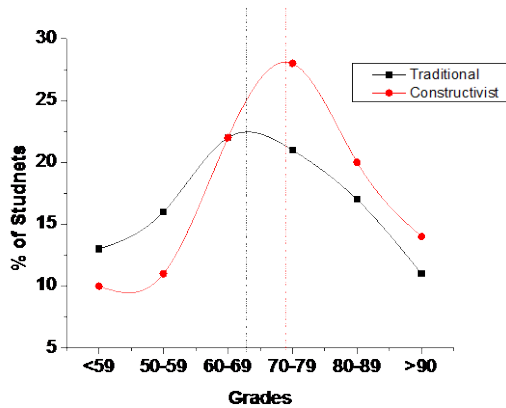


Figure 2: The grades obtained by a class taught using traditional approaches and a class taught using our constructivist approach.

Figure 2 shows that the average of the class has increased by more than 7%, which is equivalent to more than one point in the accumulative grade point average (GPA) of the students. A second and more pronounced result is the shift in the grades where a positive overall shift in the grade distribution of the class is taken as an indication of improvement in the quality of the education we deliver.

Thirdly we measured the impact of our constructivist approach on the achievement percentage of the course outcomes. This is calculated at the end of every semester by the department using sophisticated software, which input parameters include the assessment various tools used to evaluate the performance of the students. Each of these assessment tools was given a weight representing its contribution to that specific course outcome. The results are summarized in Table 1.

Table 1 shows that the course outcomes were each assigned a specific weight, which was distributed among the assessment tools. The weights are determined by the contribution of each tool to assessing specific course outcomes. The percentage achieved in each course outcome was calculated using formulae, which input parameters are the grades attained by the students multiplied by the weighted values for each assessment tool. The assessment tools and their assigned weights include Quizzes (12%), group worksheets (12%), homework assignments (6%), midterm exam (30%), and the final exam (40%). The assigned weights are set by the department and are the same for all courses.

The reported numbers in Table (1) show that the overall achievement is about 80%. In comparison to the percentage achievement in classes taught using traditional approaches, there is an improvement of about 9%, which was considered as a remarkable achievement.

Additional tangible outcomes that were not quantifiable but have proven to be valuable educational attributes and contribute to education quality include the rapid increase in use of IT tools in teaching and learning. This worked very well in encouraging students to participate and follow the instructor. IT tools were very important and effective in communicating information to the students via the Internet. Also, the noticeable increase in the level of satisfaction among the students and increase in interest in learning physics. The application of such an innovative approach provided a wealth of research ideas and data that stimulated the author to write several research articles in Physics Education. So

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far, the author has published eight (8) research papers and there are three more in preparation (see appendix I). The author also has received numerous teaching awards and recognitions for his efforts and innovative ideas (see appendix II).

Recommendations

The constructivist approach has proven to be effective in teaching and learning Introductory Physics, as it was evident from the noticeable improvement in the performance of the students. The author highly recommends colleagues at the University of Sharjah and post secondary institutions in the region to experiment with the approach.

Colleagues who have been exposed to the experiences have raised concerns about the amount of effort and time the instructor needs to put in to prepare the material and manage the class(s). There is no doubt that the implementation of the approach needs dedication and commitment to excellence in teaching and learning. Instructors are expected to work harder, especially in designing and preparing the course material and continuously updating course outline, course content and assessment tools. During the author's experience over the past few years, the implementation of the approach has become easier in latter years since some of the material and tools tend to be recycled. Additional recommendations by the author for implementing the approach include:

- The approach is recommended and works best for small- to medium-size classes (up to 50 students). For large classes (above 80), the effectiveness of the approach is

hindered by the fact that students or groups will not receive enough attention from the instructor. In addition, some of the exercises and teaching activities will not be effective, especially those activities that involve student interactions.

- The author further recommends that the application of the approach require both instructors and students to have high level of IT and software interactive skills.
- To implement the approach, the author recommends adequate Internet and communication infrastructure(e.g. IT support, well-equipped classrooms). This is necessary because the approach relies heavily on IT tools in delivering the material, assessing & evaluating the student, and providing feedback to the students and the instructor.
- The constructivist approach requires support from academic administration and support staff.

References

- [1] Elmehdi, HM and Pistorius, S. (200).Intro-Physics for Engineering Students: it's difficulty *versus* its relevance and impact on research: a statistical survey. In the proceedings of the 3rd IFEE conference.University of Sharjah, UAE.
- [2] PhET Simulations. Available at: <http://phet.colorado.edu/>
- [3] بشير سليمان و حسين المهدي. دور التفكير الناقد المرشد ونظم ادارة المساقات الرقمية المساندة في تطوير تعليم الفيزياء الجامعية في دولة الإمارات العربية المتحدة. منشورة في مجلة اتحاد الجامعات العربية: أنماط التعليم الجامعي الحديث تجارب



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- ورؤى مستقبلية في الدول العربية " . العدد المتخصص العدد (5) ص: 447 ، (أبريل 2009)
- [4] Elmehdi, HM (2013). The impact of Web-based homework delivery systems (WBHDS) on the performance of University of Sharjah freshmen students. 2nd International Conference on Information Technology, System and Management (ICITSM 2013). Dubai, United Arab Emirates, March 4 – 5, 2013.
- [5] Elmehdi, HM and Rashed, B. (2012). Enhanced Force Concept Inventory (FCI) Test to Diagnose Freshmen Students' Conceptual Understanding of Topics Covered in Introductory Physics, Accepted for publication at 6th International Forum of Engineering Education (IFEE2012) Kuala Lumpur (Nov, 2012).
- [6] H.M. Elmehdi and N. Jisrwai (2011). An evaluation of web-based homework delivery systems: University of Sharjah Experiences" The 4th Annual Conference on e-Learning Excellence in the Middle East, Jan 31- Feb 3, Dubai, UAE) (2011).
- [7] Heller, P. and Hollabaugh, M. (1992). Teaching problem solving through cooperative grouping. Part2: Designing problems and structuring group. *American Journal of Physics*, 60(7), 637–644.
- [8] Mills, D., Mckittrick, B., Mulhall, P. and Feteris, S. (1999). CUP: cooperative learning that works. *Physics Education*, 34(1), 11–15.
- [9] Amador, S. (1994). Teaching Medical Physics to General Audiences, *Biophysical Journal* Volume 66, 2217-2221.
- [10] Driver, R., Asoko, H., Leach J., Mortimer, E. and Scott, P. (1994). Constructing scientific knowledge in the classroom. *Educational Researcher*, 23(7), 5–12.
- [11] Salomon, G. and Perkins, D. (1998). Individual and social aspects of learning. Review of Research in Education, 23, 1–24.
- [12] Posner, G.J., Strike, K.A., Hewson, P.W. and Gertzog, W.A. (1982). Accommodation of a scientific conception: Toward a theory of conceptual change. *Science Education*, 66(2), 211–227.
- [13] Leach, J. and Scott, P. (2003). Individual and sociocultural views of learning in science education. *Science & Education*, 12, 91–113.
- [14] Heller, P. and Hollabaugh, M. (1992). Teaching problem solving through cooperative grouping. Part2: Designing problems and structuring group. *American Journal of Physics*, 60(7), 637–644.
- [15] Sharma, M., Millar, R. and Seth, S. (1999). Workshop tutorials: Accommodating student-centered learning in large first year university physics courses. *International Journal of Science Education*, 21(8), 839–853.
- [16] Mazur, E. (1996). Peer Instruction: A Users' Manual (Upper Saddle River, NJ, Prentice Hall).
- [17] Mills, D., Mckittrick, B., Mulhall, P. and Feteris, S. (1999). CUP: cooperative learning that works. *Physics Education*, 34(1), 11–15.
- [18] Beichner, R., Saul, J., Allain, R., Deardorff, D. and Abbott, D. (2000).
- [19] Gautreau, R. and Novemsky, L. (1997). Concepts first — A small group approach to physics learning, *American Journal of Physics*, 65(5), 418–428.
- [20] Fagen, A., Crouch, C. and Mazur, E. (2002). Peer instruction: Results from a range of classrooms. *The Physics Teacher*, 40, 206–209.
- [21] Meltzer, D. and Manivannan, K. (2002). Transforming the lecture-hall environment: The fully interactive physics lecture. *American Journal of Physics*, 70(6), 639–654.
- [22] Elmehdi, HM. Unpublished work
- [23] Roth, W.-M. (1996). Teacher questioning in an open-inquiry learning environment: Interaction of context, content, and student responses. *Journal of Research in Science Teaching*, 33(7), 709–736.
- [24] Bell, B. and Gilbert, J. (1996). *Teacher Development* (London: Falmer Press).
- [25] Tsai, C. (2001). A science teacher's reflections and knowledge growth about STS instruction after actual implementation. *Science Education*, 86(1), 23–41.

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Writing Contextual Book Chapters by Students

Adnan Riaz^a and Mubarak Hussain^b

^a Allama Iqbal Open University Islamabad Pakistan

^b Mohammad Ali Jinnah University Islamabad, Pakistan

Abstract

During my teaching experiment, an effort was made to develop a short book primarily from the students. They were required to write book chapters on different assigned topics of the course. No other assignments were given to let them concentrate at this particular activity. The basic purpose of my teaching experiment was to acquaint students with the conceptualization of the key concepts, literary writing, contextual knowledge, teamwork and creativity. To achieve these objectives, students were required to come well prepared with the assigned readings so that meaningful discussion could be held. Later the concepts were discussed in detail with active participation of all of the students with practical example from local environment. Students were initially briefed during the first introductory class that they are required to write at least nine chapters of a book by citing examples from local environment. To achieve this objective, the class discussions were held for explaining the concepts and suggested example. All the students were divided into a team of 3-4 members. Each team was given topics/contents for which they had to write a book chapter. Students were strictly advised to read operational definitions of the terms and select the most appropriate to mention in the book with proper references or by acknowledging the source. The concepts should further be supported with text especially with examples from local companies. Pictorial

representations and annexure could be other supplementary source. In this way, all the nine teams yielded expected outcome by writing nine chapters with full devotion and interest. Since this was graded exercise and the only assignment/project of the course, therefore students took full interest in writing book chapters which is now under review for publication by the external experts and editor. By the end of semester, students not only grabbed the theoretical as well as practical knowledge about the course material but also a book comprising nine chapters was prepared specifically with reference to Pakistani environment. The idea was to get a comprehensive outcome from students, so that upcoming students could enjoy the outcome of their ancestors. Reason being, various books/study material is available at various informational sources but usually contextual knowledge is missing. This activity was an attempt in this regard.

Keywords:

Contextual Writing, book chapters, Self-learning, Pakistan

Introduction

Emerging technology has changed the way instructors educate students (Munday, 2007). In today's faced paced environment, various techniques and tools are available which help the instructors and teachers to effectively communicate their messages to



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the students. Yet various authors have emphasized to exercise innovative and creative approaches to make their teaching a successful experience (Yamin, 2012; Carbonell, 2012; Estes et al., 2009). Therefore, instructors should use creative and innovative approaches in their teaching, to actively involve students (Munday, 2007). However, literature categorically shows that subject experts and teachers have used different creative methods in view of their contextual environment which shows the fact that “one size fit all” can not be recommended in each and every subject or domain. For example, Brandon-Jones et al., (2012) encouraged to use business simulations, live cases, experiential teaching methods, role-plays, virtual learning environments and group exercises, to educate operations management modules (Brandon-Jones, 2012). Carbonell (2012) applied different learning techniques to teach the students of civil engineering school like classic plus interactive contents, WirisQuizzes and motivational videos etc. whereas, Estes et al., (2009) used mock study as an effective and innovative teaching method to familiarize the learners on the principles of evidence based practices and research. The main purpose was to develop interest in research and highlight the steps in initiating and conducting a research study. Hertsch and Alperen (2012) on the other hand, recommended to use Heyworth formula (which declares the changes and its costs) for innovation in foreign language education. Likewise, While examining the Innovative practice in the teaching and learning of human resource development Holden and Griggs (2010) found a strong relationship between subject matter and teaching, learning and assessment strategies incorporated to disseminate knowledge.

Instructors relying at “learning with fun” approach may also arise the interest of students belonging to different age groups. Jokes and laughter giving situations helps to memorize the subject matter to considerable extent (Engvall, 1996). Similarly, Khalid (2010) recommended to use cartoons on teaching and learning physics. However, their study was exploratory in nature and based on questionnaire survey rather experiential. Results showed that most of the respondents who were instructors for physics, favored the idea to use cartoon in teaching and learning to stimulate students’ creativity. At contrast, innovating the traditional teaching practices may also yield good results. For example, powerpoint presentations which are a common aspect of teaching in nearly all the institutes around the world, can also be creatively improved (Hashemi, 2011). Moreover, assignment should also be more applied and conceptual in nature to bring the real input of the students. Although these strategies are time consuming for the teaching but minimize the likelihood of cheating and plagiarism and largely appreciated by the students (Yamin, 2012).

Teaching Experience

Goals

The basic objective of the teaching experience was to educate students both theoretically and practically, primarily to make them self-initiator and how to develop academic work from the contextual environment of Pakistan. Various books and academic material are available through different sources. However, contextual books are not available in the market pertaining to cases and examples from the local environment. Therefore, this project

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assignment was an initiative in this regard. Students had to develop contextualized book chapters under the guidance of the instructor. By doing this, a comprehensive book was prepared and all the students acquaint themselves with the course.

Importance

Usually students are assigned various assignments and projects which are carried out during the semester. The basic purpose of such practices are to familiarize each student with bookish study and also with the practical endeavors to some extent. However, it has been widely observed that the assignments are disposed of after the semester being no use. Therefore, an effort was made to develop a contextual book from the students during academic semester with the intention that if students (in the form of group) execute the project activities in true spirit and their outcome i.e. academic writing is worth to be read by other students, then it should further be given to other graduating students so that they could grab contextual knowledge. In this way the project titled “Writing Contextual Book Chapters” is under review to be published in the form of *Text Book*. This will also motivate other students to go under rigorous study and develop something which could be publishable.

Relation to educational theories and research

The theoretical underpinning of this approach can be traced to the Coyote teaching recommended by Tom Brown, Jr. and Jon Young which strives to empower the learners towards self-learning approach rather relying at the theoretical lessons, contents and exercise. Students empowered with self-learning mechanism, can acquaint

various concepts and phenomena by “*trail and error*” and “*Hit and try*” method.

Detailed explanation of the stages

The project assignment was executed during the semester which has the time duration of four months. Step by step details are as under;

INITIAL ORIENTATION: During the first week of the semester. A detailed orientation was made about the purpose of the project, significance and expected outcome. A thorough discussion was made about the main objectives. Usually, students feel a bit reluctant to exercise creative approaches. Since this exercise was a manifestation of scholarly writing with a lot creativity involve therefore, students had to be encouraged to take this initiative. Without proper motivation, it was difficult to bring maximum out of them. It all required to believe on themselves. All the students were ensured for the proper guidance and mentoring which would be provided at each stage and when and where required

GROUP COMPOSITION: Since this project was first in its nature therefore, all efforts were made to make it successful so that an example could be set for upcoming students enrolled in various courses. This was the reason that class students’ class with highest CGPA was selected for the purpose. All the groups were consisting of 3-4 members and it was around 9 groups to execute the project. All groups were informed to divide the activities at their own disposal. One group leader was selected from among all the group members, who was also responsible to coordinate correspondence.



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FORMAT OF WRITING: The format of writing was the most difficult and critical yet interesting work to be performed. Broadly, all the groups were advised to follow the three step process to explain a phenomenon based on (i) definition, (ii) explanation and (iii) contextual example. Initially, they had to select the operational definition of the concept from the best available source without much modification and putting on paper by properly acknowledging the source. The next step explained the phenomenon in detail with all the sub-headings and associated concepts. Finally, contextual examples from Pakistani environment would have to be incorporated directly or indirectly (sometimes organizations do not allow to quote their example, therefore permission/consent is required in this regard). Pictorial representations were also encouraged to be apart of the book chapter. Groups could use university resources for this very purpose. Moreover, some short case studies were also discussed during initial classes so that students could grab the knowledge about the nature of the case study and how it is developed. Case study is also attached for reference as an appendix. Each team was given topics/contents for which they had to write a book chapter. Students were strictly advised to read operational definitions of the terms and select the most appropriate to mention in the book with proper references or by acknowledging the source. The concepts should further be supported with text especially with examples from local companies. Pictorial representations and annexure could be other supplementary source. In this way, all the nine teams yielded desired outcomes by writing nine chapters with full devotion and interest. Since this was graded exercise and the only assignment/project of the course,

therefore students took full interest in writing book chapters which is under review process for publication.

ROLE OF THE INSTRUCTOR: Since the project was comprehensive in nature, therefore the role of instructor was very important. Sometimes, he had to work as trainer, mentor, counselor and advisor. Utmost effort was made to keep the pace of work with consistent motivation. All the groups were required to develop around at least 12 pages comprising all the aforementioned contents. The instructor provided all the resources from physical to technical. The most important element was to manage time. Students were allowed to come to discuss any issue arising from time to time. Therefore, the instructor had to provide ample time even after official hours.

TIME DURATION AND ALIENED ACTIVITIES: Students were required to complete the project within 2 months of time so that proper review and editing could be made during rest of the semester. All the groups had to study relevant material available through different sources and extract the best one to execute this activity. Students were required to come prepared with the assigned readings so that meaningful discussion could be held. Later the concepts were discussed in detail with active participation of the all the students with practical example from local environment. This helped the students to have maximum orientation about the assigned concepts and topics. With their personal efforts bundled with the class discussion, provided sufficient overview of the subject matter. Especially, the examples discussed in the class could have been incorporated. Students had to complete the

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assignment within two months of time before sessional exams. They had to utilize every possible means for effective and timely developments of the book chapters. However, all the topics had to be discussed during weekly classes. Some students were advantageous because their topics were initial in the outlines and discussed very early during the semester. During class discussion, groups got valuable inputs from the counterparts. However, other group whom topic had to be discussed after mid of the semester, given time and opportunity to modify if they deem necessary or if they have something to add.

Outcomes

The final outcome of this project activity was a nine chapters book prepared specifically with reference to Pakistani environment.

Evidence and proof of success and effectiveness

The book is under review for publication. After the formal statutory approvals and review process it would be published and available through internet and other sources for maximum readership.

Recommendations

To make such activities useful, following parameters should be taken into account; Students should be properly briefed about what is expected from them. Teacher/instructor should work like a mentor during all this processed. In addition to class lectures, off time counseling and advisory process are found quite helpful. Three contents must be followed: (1) definition (2) explanation and (3) example. Pictorial

representation may also be added where possible. Instructor should work parallel with the students. All the submissions should be reviewed word to word, to know any conceptual, grammatical and syntax errors. Case studies may also be added for practical orientation.

References

- Brandon-Jones, A., and Piercy, N., and Slack, N. (2012), "Bringing teaching to life: Exploring Innovative Approaches to Operations Management Education", *International Journal of Operations & Production Management*, 32(12), 1369 – 1374. Carbonell, M.R.E., Saà-Seoane, J., and Pons, J.V. (2012), Innovative self-assessment and teaching/learning techniques for Calculus within the RIMA project (UPC-ICE), *Procedia - Social and Behavioral Sciences* 46, 686 – 691
- Engvall, J., and McCarthy, A.M., (1996) Innovative Approaches to Teach Children with Chronic Conditions, *Journal of Pediatric Health Care*, Volume 10, Issue 5, 239-242.
- Estes, T.S., Globig, C., and Selig, P.M., (2009) *An Innovative Teaching Approach to Nursing Research* Newborn and Infant Nursing Reviews, 9 (2), 102-105.
- Hashemi, M., Azizinezhad, M., and Farokhi, M., (2012), Power Point as an innovative tool for teaching and learning in modern classes, *Procedia - Social and Behavioral Sciences*, 31, 559 – 563.
- Hertsch, M.F., and Alperen, A. (2012), Innovative and organized approaches for foreign language teaching in Turkey, *Procedia - Social and Behavioral Sciences*, 47, 679 – 683.
- Holden, R., and Griggs, V. (2010), "Innovative Practice in the Teaching and Learning of Human Resource Development", *Journal of European Industrial Training*, 34(8), 705 – 709.
- Khalid, H., Meerah, S., and Halim, L., (2012), Teachers' Perception towards usage of Cartoon in Teaching and Learning Physics, *Procedia Social and Behavioral Sciences* 7, 538–545
- Mundy, C.A. (2007), Innovative Teaching Strategies: Educating Student Nurses on Vascular Access Management, *JAVA*, 12(4), 234-236.
- Yamin, M. (2012) Smart, Innovative and Plagiarism-deterrent Assessments, *Procedia - Social and Behavioral Sciences*, 55, 816 – 824.



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Effectiveness of Cooperative Learning Activities in Tertiary Education Classroom: A Qualitative Portrayal of the Experience

Dr. Irshad Hussain^a

^a*Department of Educational Training, The Islamia University of Bahawalpur, Pakistan*

Abstract

This paper is a qualitative portrayal of personal experience of the author in which he engaged tertiary education students in cooperative learning activities in the classroom. It is based on his observational notes taken during instructional process, involvement of learners in cooperative learning activities, and their reflection on these activities. The experience focused on assessing the effectiveness of cooperative learning activities. It is described that the researcher taught a course on “learning technologies” for two years to two different Master’s classes consecutively. The researcher designed and offered activities to learners for their active learning. According to the experience cooperative learning appeared to be highly constructive to students’ learning. The Students were seemed to be learning to assuming the responsibility for their learning in groups, whereas the instructor became familiar with the strengths and weaknesses of their students through observation. The instructor and students reported cooperative learning activities to be useful in enhancing their learning, developing problem-solving approach, critical thinking and communication skills along with motivation. It appeared to be empowering students with

the power of critical thinking and reflective practice.

Keywords

Cooperative Learning, Tertiary Education, Learning Technologies, Social Skills, Qualitative Research, Learning Outcomes

Introduction

Generally, learning appears to be continuous and dynamic process through which a student acquires knowledge, skills and attitudes to bring about a change in self and surroundings. It encompasses and relies on different strategies and techniques to become effective and efficient. The effective learning is an interactive process and involves learners in activities (Hussain & Sultan, 2010)[1]actively. They undertake activities individually as well as in small groups to accomplish a learning task cooperatively. The learning accomplished in small groups of learners through activities where they are not responsible only for their own learning but help each other also is called cooperative learning. It is an instructional strategy where a teacher prepares activities and offers to the learners to working on them in small groups with mutual help. It is teacher-lead & facilitated and learner-centered approach of

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instruction to make learners acquire skills and knowledge to build their later life.

Cooperative learning activities are classroom instructional activities which students undertake in groups. These activities require students to be involved actively for sharing their knowledge and exchanging information through interaction (Tuan, 2010)[2] for realizing their instructional goals. An instructor can offer different activities for promoting cooperative learning i.e. jigsaw activities, think-pair-share and circle the sage activities (Tuan, 2010) [3]. The key idea behind offering cooperative learning is mutual facilitation of learners. Therefore, it seems an appropriate learning strategy helping learners come closer to and understand each other to bring about peace in the society.

Cooperative Learning in Tertiary Education

Quality education is need of the day and it is directly linked with quality of instruction at all levels of education. However, at tertiary education (which is beyond secondary education and referred to as higher education) level it becomes more significant as graduates are desired to assume their socio-economic responsibilities with resoluteness possessing progressive vision and sagacious wisdom. They need to be equipped with multiple skills like social & moral skills, entrepreneurial skills, skills of critical thinking, and above all the life skills which are necessary for them to enter into practical life efficiently. Hence, it can be said that quality of tertiary/ higher education is reflected through its graduates i.e. their knowledge, skills and attitudes they exhibit in different situations.

Cooperative is based on idea of social interaction among students and as they learn effectively when they connect the content they learn to their social environment (Swain, 2006). Therefore, it seems imperative to involve students actively in the learning process by engaging them in activities for acquisition of knowledge, reflective thinking and skills. The acquisition of knowledge and skills is continuous process which requires students to be active participants in their community. The instructor or teacher prepares and offers activities to the learners and decides how to involve them in different activities keeping in view their potential and mind habits. For the purpose s/he selects different approaches and strategies for instructional delivery. Amongst others, cooperative learning seems most appropriate to involve students in instructional process at higher education level. It extends opportunities to students for enhancing their learning through interaction in groups. They can construct their own knowledge and facilitate their group fellows through cooperative learning activities designed purposefully. Jones and Jones (2008) [4] viewed cooperative learning as a blanket term used to any kind of group work or interaction between learners and resulting in an end product. Similarly, Downer, Rimm-Kaufman, & Pianta (2007) [5] asserted that fostering students' engagement to classroom instruction leads to effective learning of students.

Review of Related Literature

The available literature demonstrates commitment of different researchers and educationist (Huang, Huang, Yu, 2011[6]; Neo, 2005[7]; Divaharan and Atputhasamy, 2002[8]; Lotfy, 2012[9]; Kaufman, Sutow,



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& Dunn, 1997[10]; Ledlow, 1999[11]) to cooperative learning and they conducted research in this area for using it in teaching learning process to equipping learners with such skills necessary for 21st century professional life. The research findings revealed positive effects of cooperative learning activities on students and promoted their interactions among their groups.

Apparently, the classroom environment constitutes a social environment to provide students opportunities of interaction for learning from each other. Neo (2005) [12] conducted a survey on group-based cooperative learning in Malaysian perspective and demonstrated it as constructivist approach of learning to be more credible than traditional learning methods. It further elaborated that cooperative learning activities promoted student centered instruction and they exchanged information and experiences for accomplishing instructional goals.

According to Divaharan and Atputhasamy (2002)[13] cooperative learning is getting wider acceptance in teacher education programmes at higher education institutions by involving prospective teachers in activities like tutorials and assignments. It extends benefits to learners by scaffolding them acquiring knowledge and developing their cognitive and social skills.

Characteristically, cooperative learning is based on pedagogies of engagement (Felder and Brent, 2005)[14] where conventional role of a teacher seems to be transformed as developer of learning activities and experiences. It was asserted by Hussain and Safdar(2008) [15] by describing that the 21st century faculty would have to assume

new roles in new settings. The faculty would have to become designer of learning experiences, processes and environments. It makes teachers to work more on developing curricula and designing cooperative learning activities aligned with intended outcomes of the course(s) to involve the students in learning process actively.

Different factors may be effecting on effectiveness of cooperative learning activities and setting up learning environment in the classroom. However, amongst other factors, physical infrastructure and seating arrangement, availability and use of learning technology and instructional methodology seem to be accounted for the success of such activities. Lotfy (2012)[16] conducted an exploratory study on determining effects of classroom seating arrangement on students' participation in cooperative learning activities. The study demonstrated keenness of students on their working on group-based learning activities in semi-circled seating arrangement in the classroom. Similarly, the study of Wannarka and Ruhl (2008)[17] elaborated that on-task behavior of students depended upon style of communication and learning activities offered to them in classroom.

Apparently, cooperative learning is an instructional continuum designed to achieve academic goals by offering activities to students in small groups for their active participation. Group work helps university students in preparing them for their future (Hussain, 2012) [18] professional life. Group work or working in group leads towards social process which Chickering and Gamson (1991) [19] regarded necessary for enhancing learning of students and making it effective as well. However, effective

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learning takes place through hands-on-practice and helping each other by setting up social environment in classroom. Cooperation is crucial for the success of group work which extends opportunities of engaging students in learning process. Nonetheless sharing ideas and experiences in groups and responding to reflections on them develops passion, enhances critical thinking by deepening level of understanding and empathy.

Kaufman, Sutow, & Dunn (1997) [20] conducted a study on cooperative learning in higher education and identified six elements essential to the success of cooperative learning activities. These elements included students' positive interdependence, their face-to-face verbal interaction, individual accountability, their social skills, group processing and appropriate grouping among them. The study used three different approaches medicine, dentistry and mathematics and reported positive feedback of faculty and encouraging comments of students. The students valued benefits of cooperative learning for example their active participation in learning process, development of problem solving approach and communication skills among them. In overall, the study concluded cooperative learning to be a robust instructional approach which could be used in different disciplines according to academic requirements of students and faculty.

Attle and Baker(2007) [21] regarded cooperative learning to be imperative for professional preparation of students as it maximized opportunities for their skill development. Its outcomes are related with content and application based objectives. The use of cooperative learning in higher

education can accomplish learning outcomes based on curricular content by designing, selecting and offering appropriate activities to students. Jones and Jones (2008) [22] described their experience of applying cooperative learning to post-secondary instruction. The experience reflected that while learning cooperatively, the students did learn to regard multiculturalism through active participation in learning and flourishing under assistance.

Paulsen and Faust (2008) [23] viewed cooperative learning to be a viable instructional method, but, there appeared an apprehension among college faculty to use rather avoided it; as 76% of them preferred lecture as their primary approach to teaching (Weimer, 2007)[24]. Similarly, Fink (2004)[25] viewed cooperative learning not to be a common practice of faculty. Faculty members expound knowledge to students instead of involving them in searching it through active learning (Ediger, 2001)[26]. In spite of it Williams (2007)[27] acknowledged cooperative learning to be the most effective approach for enhancing learning and the academic accomplishments of individual students and their classmates. Properly designed cooperative learning activities allow learners to develop their own understanding of key concepts by emboldening others. Therefore, cooperative learning activities have academic as well as social and psychological benefits at college level education.

The experiences of Husain (2012) [28] and Hussain & Sarwat (2010)[29] described effectiveness of activity-based teaching and/or [cooperative] learning process at higher education level. Their experiences demonstrated relishing attitude of learners in



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groups and towards cooperative learning activities and projects in their classrooms. Cooperative learning activities cultivated morality and ethics, social skills and etiquettes among them. The learners showed their keenness on involving themselves in group-activities for knowledge construction. They became self-confident leaving behind their shyness and introversion. Nevertheless, the experiences reported minor problems related to culture and social backgrounds of learners including social problems arising from working of female students with male students and nervousness of rural students. Likewise, the investigative study of George (1994)[30] on effectiveness of cooperative learning strategies in multicultural university classrooms demonstrated significantly greater performance of students who worked in cooperative groups than that of their counterparts' i.e. the students who worked in non-cooperative groups.

Moreover, the students who were engaged in cooperative instructional process reflected significantly positive attitude toward classroom instruction. Cooperative learning effects learning of students by involving more senses and resultantly, they show good results and positive attitude towards instruction. Even so, the study of Terenzini, Cabrera, Colbeck, and Bjoklund (2001)[31] was conducted of undergraduate engineering students and revealed the nearly alike results. It affirmed that the achievement of students exposed to cooperative learning activities was statistically significant than their counterparts –taught through traditional methods of instruction. Basta (2011)[32] conducted a study to examine the attitude of tertiary education students towards communicative approach and cooperative learning in language courses. The study

reported positive results by showing students' learning of social and academic skills required for their professional life. It also enhanced their efficiency and achievement in meeting the objective of language learning.

Students at tertiary level of education are adults (Hussain, 2013)[33] and they come with their cognitive abilities, feelings and mind habits and capable of interpreting situations by giving them new meaning according to their life experience. They are not machines but more than machines to process information (Merriam, 2001)[34] and arrive at conclusion. It is evident from the above discussion that cooperative learning is useful for students particularly at tertiary level of education. The students of tertiary education are adults and have experience of life to which they relate their classroom activities and benefit a lot. Moreover, the strategies of cooperative learning appear to be viable substitutes of conventional classroom practices and involve learners actively.

Theoretical Framework of the Experience

The students of tertiary education (referred to as higher education) are regarded as potential leaders. They enter to the higher education institutions with their aim of seeking knowledge, learning social skills and attitudes; and after graduating they leave forth working for the development of their respective communities and countries. Developing communities appears to be one of the prime objectives of a university or higher education institution in 21st century. It is not a simple task rather a prophetic mission demanding a lot of passion and commitment along with certain skills and

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attitudes making them capable of completing it. The graduates need to acquire social skills with an urge to work for and with others, communication skills, leadership abilities and ethics besides of good grades in their respective disciplines. It seems quite imperative to provide them nourishing to learning environments in the classroom and/or campus for flourishing their social skills, etiquettes, accepted behaviors, leadership traits and professional ethics. It promotes endurance and forbearance among learners by inculcating amicable behaviors and life skills. But traditionally, teaching learning process is based on instructor-led instruction transferring one-way information merely. It seems too difficult to cultivate desired skills and attitudes through conventional instructional process at higher education level.

Therefore, the instructional process calls for a shift from teaching oriented conventional (teacher-centered) classroom methods to learning focused (learner-centered) approaches to ensure active participation of learners through activities. Amongst other learner-centered approaches, cooperative learning is considered more appropriate for developing sociability, interdependence, communication skills, leadership qualities and professional ethics. The studies and experiences of various educationists and researchers (Hussain, 2013[35], 2012[36]; Hussain and Sarwat, 2010[37]; Jones and Jones, 2008[38]; Attle and Baker, 2007[39]; Kaufman, Sutow& Dunn, 1997) [40]reported positive effects of cooperative learning on academic performance, social learning and etiquettes, personality development communication skills and ethics of students and suggested it to incorporate in instructional process. Keeping in view the

demonstrated effectiveness and appropriateness of cooperative learning by these studies in the area of medicine, dentistry, mathematics, educational research, professional studies and multicultural education; the researcher used this approach in tertiary education classroom in teaching a course on ‘learning technologies’ and portrayed his experience along with students’ reflection qualitatively.

This paper demonstrates effectiveness of using cooperative learning in teaching a three-credit hour course to tertiary education students keeping in view the elements of this approach. The upshots of the experience blended with reflection of students about it have been reported for the interest of academicians wishing to incorporate it in their instructional process.

The Experience

The instructor/ author taught a course on ‘learning technologies’ to the students of Master of Arts (M.A) in Education for two semesters to two different classes at the Department of Education, the Islamia University of Bahawalpur, Pakistan. The instructional process consisted on pedagogy of engagement. Therefore, he involved students in activities for their active learning. It helped them relate their experience with new situations and interpreted them accordingly –leading to knowledge construction. He designed cooperative learning activities and offered to the students in accordance with nature of content matter and learning outcomes of the course.

Objectives of the Experience

The experience aimed at examining the role of cooperative learning activities in tertiary



education; finding out the effectiveness of these activities in tertiary education classroom; and evaluating the problems of tertiary education students related to cooperative learning activities by analyzing their reflection and observation notes of the course instructors or author.

Method and Procedure of Experience

This paper is a qualitative portrayal of tertiary education classroom observation. It is an account of personal experience of author of engaging tertiary education students in cooperative activities in the classroom. It is based on his observational notes taken during instructional process, involvement of learners in cooperative learning activities, and their reflection on these activities.

Table-1: Participants of the experience

The participants of the experience were 1st Semester students of Master of Arts in Education. The author taught the course on 'learning technologies' to two different classes of academic session 2009-11 and 2010-12 i.e. class-1 and class-2 respectively

as shown in the table-1. The number of female students getting into the Department of Education was significantly greater (77%) than their counterparts (23%) for the academic session 2009-10. However, a slight upswing (2%) of female students was obvious regarding their intake into the same programme for the upcoming academic session i.e. 2010-12 by reaching 79% leaving and behind their counterparts who were 21%

Sr. No.	Class	Number of Students/ Participants					
		Male		Female		Total	
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
1	Class-1	11	23	37	77	48	100
2	Class-2	9	21	33	79	42	100
	Average	10	22	35	78	45	100

only. Nonetheless, the average numbers of participants consisted of 78% female and 22% male students indicating more inclination of female students in the discipline.

Generally, the instructional encompassed and relied on learner-centered approach by involving students actively in learning process. For the purpose, the students were divided into groups each consisting of 5-6 students by their own choice. Multiple techniques were used to involve them in learning process including power point presentations on the topics from the course contents, addressing students' queries, short discussions and group activities. The author designed cooperative learning activities and offered to the students in accordance with nature of content matter and learning outcomes of the course. The author observed

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working style, group interaction and social behavior of students throughout the semester. He compared their learning achievement and entry & terminal behaviors for knowing the effectiveness of cooperative learning activities. These potential graduates were also interviewed after completion of their respective semester.

Rationale of the Course

Apparently, the 21st century is regarded as the century of advancements and inventions & innovations –putting knowledge into practice. It is the century where the proverb ‘knowledge is power’ has become a reality on account of having information. Information is disseminated and shared by using information and communication technologies (ICTs). ICTs have brought about an information revolution or information explosion creating a competitive world of work. Therefore, the areas of education and training are not exceptions rather exploiting it more appropriately to disseminate the right information at right time to the right personnel.

Moreover, the developed nations and/ or countries appear to be powerful and ruling the nations on account of making advancements in ICTs and using them in different aspects of life and particularly in higher education. In education and training ICTs facilitate the teachers as well as learners to make teaching learning process more effective and productive. The ICTs used by learners to enhance their cognitive abilities and mental faculties are referred to as learning technologies. The course on learning technology focused on the potential of students to transform it into their ability

for preparing them well to bring about social change through education in the country.

Course Offering and its Pre-Requisite

The course on learning technologies is a basic course of its nature. It was designed to familiarize the students with learning technologies; making them capable of differentiating among different kinds of learning technologies. It also aimed at helping students to select the technologies best suited to their learning. It is offered during 1st semester –to fresh intake every year. The course does not require any specific skill as pre-requisite for registration except the degree in Bachelor of Arts/ Science (fourteen years’ education) which is basic eligibility of enrolment in the programme.

Orientation on the Course

The instructor organized an orientation session for students enrolled in the course on ‘learning technologies’ during the first week of commencement of semester. It developed academic liaison among instructor and students. The instructor briefed about intended learning outcomes, contents, teaching & learning activities, evaluation approaches of the course and code of conduct of the department. The instructor provided course outlines and brief handouts to students during the session for their study.

Course Description

The course on learning technology was a 3-credit hours’ course offered in the first semester to the students of Master of Arts in Education. It challenged the students’ potential to enhance their passion for learning and improving their understanding, intellectual capacity & experience of



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learning with technology, and action research. The format of the course was unique and innovative and it generated robust & considerate learning communities to support learner's transformation rather emphasizing on rote learning. The course on "learning technology" aimed at developing an understanding of such technologies used for augmenting and facilitating the learning of students, and making them aware of new developments. Students frequently interacted with technologies, developed learning communities/ groups and networking, and shared their experiences of learning with and/ or by technologies throughout their academic journey.

Intended Learning Outcomes of the Course

After studying the course and completing its all requirements, the students were desired to become able of

- i. explaining the terms technology and learning technology
- ii. classifying the learning technologies
- iii. discussing the role of learning technologies in education
- iv. differentiating among different kinds learning technologies used in teaching leaning process in school education
- v. using different learning technologies appropriately for learning
- vi. demonstrating an understanding of the effects of learning technologies on schooling; teachers, students and

teaching earning process by conducting group project(s)

- vii. creating environments of using information technologies for learning purpose

Course Contents

The main titles ofcourse contents included but were not limited to knowing about learning, conceptual framework of technologies and learning technologies, classification of learning technologies – conventional learning technologies, modern learning technologies and emerging learning technologies, emerging paradigms of learning, and individual and group project(s). These tiles of the contents were further divided into sub-topics according to the learning outcomes of the course. However, the individual and group projects consisted on identifying the role, impact, potential area of exploitation of different learning technologies in education and training; and describing the personal experience, problems and/or expectations and benefits of using different learning technologies in the process of learning at various levels

General Learning and Teaching Approaches

The instructor adopted approaches of active pedagogy keeping in view the intended learning outcomes and contents of the course, and intellectual level of students. The general instructional approaches included formal classroom lectures and discussions accompanying with pre-readings and group activity sessions by splitting learners into smaller groups. The activity groups were involved in discussions on topics related with readings which focused on structured

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activities like conducting a group project, observation, field work and preparing portfolios with reflections, evaluation and critic on the work of other groups. They were provided opportunities of sharing their experiences, ideas and creative work by organizing interactive sessions. They were guided and involved in self-directed learning by searching reading materials (books, journals, research reports or dissertations etc.) from library and internet. They were assigned to do assignments, working on group projects, preparing reports and presenting through power point or poster presentation in the classroom. They were encouraged to raise questions and take part in discussion by observing social and professional ethics. The students were involved in using the famous learning technologies like computer, internet and its related technologies like social media. Submission of assignments through e-mail, using Google Group, Facebook and Twitter were appreciated.

The instructor provided handouts and study materials to the students according to the content matter of the course. The study materials consisted of latest research papers and articles on learning technologies, their use and effectiveness were retrieved from internet and chapters from the books. Moreover, they were advised to consult the books recommended for course and internet based learning technologies to furthering their knowledge. These books included Education for a Digital World: Advice, guidelines and effective practice from around the globe (Hirtz, Harper and Mackenzie, (Eds.) (2008)[41]; A study of emerging technologies and their impact on teaching learning process (Hussain, 2005)[42]; Educational Technology (Rashid,

2005)[43] and Handbook of emerging technologies for learning (Siemens and Tittenberger, 2009)[44].The instructor also provided latest research papers and articles time to time to the students for broadening their study.

The recommended medium of instruction for the course is English language. But for facilitating students and making them understand the concepts appropriately, the instructors adopted Bi-lingual medium of instruction i.e. English and Urdu by using Urdu language sparingly in the classroom.

Table-2: Learning hours

Area of Pedagogy	Specified Hours	Description
Classroom contact hours	48	Face to face interaction
Directed reading	48	Individual/group study as directed instructor
Assignment	20	Individual/group assignments: One assignment before mid and one before final term examination
Assessment	12	Continuous, formative and summative
Total Hours	128	All of the above activities

The instructor assessed learning of students according to the following stages/components of evaluation of the course.

Evaluation of Students

The learning achievement of students was evaluated on both the process and outcomes of their learning. It was mandatory for them



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to get through all of the three components i.e. sectional/ or tutorial evaluation (by the instructor/ or tutor), mid-term examination (conducted after seven of the commencement of the semester) and the final-term examination (conducted at the end of semester or after 15/16 weeks of the commencement of the semester). The evaluation was conducted by the author according to the semester rules based on parameters given in table-3 below. The main areas of evaluation included acquisition, integration and application of knowledge of learning technologies and communication skills.

Table-3: Assessment Procedure and Criteria

Mode of Assessment	Weight age in Percentage	Description
Classroom participation/ general behavior/group work	05%	Continuous assessment by the instructor
Observation/portfolios	05%	
Assignments	05%	
Presentations/conducting and participating in Seminar	05%	
Mid-term exam (written test)	30%	Formative
Final-term exam (written test)	50%	Summative

Procedure of Students' Evaluation and Criteria

The instructor adopted the following procedure and criteria for assessing the learning achievement of learners as envisaged in the semester rules of the Islamia University of Bahawalpur.

Classroom participation / General behavior / Group Work

A total of 05% marks were allocated to students' classroom participation, critical and creative attitude, general behavior and performance in group work.

Portfolios/Observation/Case study

Similarly, 05% of the total marks were allocated to students' performance with regard to the task assigned in terms of reporting back and preparing portfolios.

Assignments

Even so, a total of 05% marks were allocated to the assignments. One assignment (minimum) was assigned to each of the students. In some cases, the instructor assigned more than one assignments. However the total marks remained same. The assignments were assessed on the basis of information and references included, logical reasoning, and organization of material.

Presentation

A total of 05% marks were allocated for presentation. Students presented individually as well as in groups, gave comprehensive presentations on their assignments. Each presentation lasted no longer than 15 minutes.

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Attendance

According to Semester Rules of the Islamia University of Bahawalpur 80% attendance was mandatory for a student to sit in mid and final term examinations. However, in exceptional cases (like performing Hajj or Umrah, marriage of the students, bed rest due to illness and hospitalization etc.) it was relaxed up to 10% and maintaining 70% mandatory attendance for the semester.

Observation of the Instructor

The instructor adopted active pedagogy for instructional process. He designed and offered learning activities to the students after brief lecture and discussion on the respective topic. He observed students involvement in the activities, their pace of working, interaction among groups and social learning, etiquettes and other life skills. The brief description of the observation is given below.

Keeness on Learning

The instructor observed keeness among students while working on activities and helping each other's in groups. *They felt pleasure and enjoyed learning with and by their fellow students. The students showed their enthusiasm in undertaking activities. They helped their fellows in locating and sharing learning materials for preparing assignments and presentations. They appeared to be caring for their group members and their learning achievement. They helped and encouraged their each other by creating and sustaining motivation for excelling over their counterparts.*

It developed courtesy and considerate attitude among them. Cooperative learning

activities promoted passion for learning among students which enhanced their participation in group activities.

Promotion of Social Skills

Social skills are considered necessary for living a successful and life in 21st century. Developing social skills among students is one of the basic aims of higher education. The graduates equipped with appropriate social skills can promote peace and harmony in the society because they possess patience and endurance know the art of conflict resolution.

The instructors observed students to be involved in learning activities and task oriented for achieving desired outcomes. They started taking academic initiatives in searching and locating materials for preparing and submitting their assignments and presenting in the classroom. They seemed to be cooperative to their fellow students by sharing learning materials and explaining to them what they knew. They used Urdu and English languages for communication with clear message in professional manner. They worked peacefully in groups and resolved their minor conflicts which aroused occasionally.

It promoted social skills and enhanced task oriented attitude among students. They learned the art of taking initiatives –leading, effective communication, trust-building and conflict resolution by exchanging their problems, ideas and pains & gains in their groups.

Group Interaction

Working in group and group interaction are considered to be essence of cooperative



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learning activities. Group interaction facilitates group members in achieving objectives of the assigned activities. They get benefit from the experiences of their fellows. It makes them understand psychology of the members –their learning dispositions& intentions, academic potential, intellectual level, learning styles, personal interests and personality traits.

The instructor observed students to be helping each other in completing their learning tasks. They were explaining what they knew in proper way according to intellectual level and dispositions of their fellows. They valued opinions of others by taking in account their interests and personal dispositions. They appeared to be listening and responding to each other carefully. They seemed to be were explicit in their conversation and made it convincible with arguments. They linked their previous learning experiences and knowledge with assigned activities and helped others for the same. They sought assistance from instructor and fellow students in linking their knowledge with present situations.

The group interaction enhanced active participation of students in learning process. They could become capable of understanding group dynamics –valuing, and listening and responding to others; and critical thinking and reflective practitioners supported by rationality and logic. They associated their previous learning experiences with present situations & learning activities under the tutelage of their instructor.

Individual Responsibility and Accountability for Learning

The assertion, “students learn together, but perform alone” of Johnson, Johnson and Smith (1991) makes students conscious of their individual learning and learning achievement. Student’s individual achievement grades help them get a high ceiling placement in a sector of their choice. Therefore, students take responsibility for their own learning and grades through examinations; and it demands sense of individual responsibility and accountability to learning. It makes them self-centered even though working together.

The instructor observed that students were leaning according to their own styles by selecting approaches which suited best achieving their achievement targets. They tried their best for securing good grades in the examinations. Although they worked on cooperative learning activities and facilitated each other in groups but their individual efforts appeared focusing on the aim of getting through examinations.

Although students worked in small groups for completing their cooperative learning activities yet they appeared to be concerned to their individual learning success and therefore, were curious about their personal achievement in terms of grades and overall percentage in the examinations. It created competition spirit among them and they tried to get high marks.

Group Processing

Group work is completed by mutual efforts and commitment of member students. For accomplishing goals of cooperative learning activities, a periodic review of students’ performance seems necessary. If it is conducted by the students themselves then

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creates a sense of self-accountability which provides feedback to enhance their performance and morale of the group. It makes them aware of their performance and the pace of completing academic tasks and activities in groups. The instructor noted that students assessed their performance as well that of their group members.

They were seen to be assessing the attitude and behaviors of their group as well as class fellows. They valued the accepted social behaviors and many of them tried to copy the appreciated attitudes. Similarly, the otherwise behaviors were equally criticized by majority of the students and they were transformed into accepted ones. They themselves reviewed their academic performance as well –in groups and individual too. They compared their marks of the successive activities and improved their working. They seemed to be self-motivated by such group processing which made them take part in more activities.

Group processing made student self-responsible of their learning. They appeared to be self-regulated and independent in their learning by maintaining and sometimes enhancing the pace of group dynamics.

Formation of Appropriate Groups

Forming groups of students for cooperative learning is one of the crucial tasks of an instructor. In a group the member students have different personal attributes, social skills, behaviors, academic potential and working pace. The formation of proper groups by instructor ensures problem-solving and social skill building of all group member students.

The instructor came across different attitudes and behaviors of the students which indicated their comparative dispositions. They were sharing and exchanging their views, information and learning experiences with their fellows. The students even working in groups were making comparison of their social learning and learning achievement with their class fellows.

It was observed in accordance with the assertion of Chickering and Gamson (1991) that “*Learning is enhanced when it is more like a team effort than a solo race. Good learning, like good work, is collaborative and social, not competitive and isolated. Working with others often increases involvement in learning. Sharing one’s ideas and responding to others’ reactions improves thinking and deepens understanding* (p. 65).

Independently Using Learning Technology

In the beginning of the semester majority of the students appeared to be semi-computer literate having lower order skill of using learning technologies. They had lesser exposure to modern technologies used to facilitating teaching learning process. Even some of them were hesitating in using these technologies. However, cooperative learning activities and working in groups developed technological skills and confidence among them. They helped each other and at the end of the semester they learned the use of modern learning technologies –computer, internet and its related technologies independently. They became able to select appropriate technology for their learning. *The students used computer for preparing their assignments and classroom presentations. They downloaded related materials for the purpose initially with some*



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help by instructor and/ or group members. Gradually, they became capable of helping others. They communicated through e-mail and used social media most commonly Facebook and Google Groups. They felt pleasure in using learning technologies.

They helped each other in preparing their assignments, presentations and other academic activities. They showed their care and concern for each other and observed patience with resolution. At the end of the semester majority of the students appeared to be equipped with proper skills of using modern learning technologies.

In spite of the above, students developed confidence by participating in mandatory classroom discussions and quizzes organized by their instructor for them. They could learn to observe patience even in odd situations and the use of right language & verbatim in these situations. They could overcome their shyness to become self-confident and self-reliant. They developed their personalities as well. They became well versed and communicative to convey their ideas and viewpoints appropriately. They knew to dress up according to the situation(s) and/ or event(s) along with the art of developing report with their group members.

Reflection of Students

The instructor interviewed potential graduates after completion of their respective semester by using an interview schedule. Their responses were grouped under five main categories which are given below in their summarized form.

Enjoying Cooperative Learning Activities

It was obvious from the students' reflections that they felt happy when they were working on cooperative learning activities. Majority of the students was of the voiced, *"We enjoyed the activities. We felt comfortable and independent in our activities"*. Cooperative learning activities appeared to be making learning a fun for students and they learned in edutainment environments.

Cooperative Learning Enhanced Communications Skills of Students

Communication skills are considered to be necessary for successful professional life. Developing communication skills among students actually means preparing them for their future life. Cooperative learning activities provided them a platform for interacting with their fellows and faculty as well. It promoted their written as well as oral communication skills. The students appreciated cooperative learning activities by asserting, *"Cooperative learning activities provided us opportunities of developing our communication skills –oral and written. We interacted with our group members and teacher. Our working on activities and classroom presentations developed confidence and skills of communication"*. The use of cooperative learning activities helped students to enhance their communication skills and improve interpersonal skills by reducing hesitation.

Cooperative Learning Promoted Critical Thinking among

Students

Development of critical thinking and reflective practice is one the major aims of higher education. Critical thinking enables students to analyze and interpret the

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situation(s) logically. Cooperative learning activities involved students actively in learning process. The activities provided them opportunities of putting their knowledge into practice in cooperation with their fellows and guidance of the instructor. The students were of the view, “*Cooperative learning activities provided us opportunities of thinking and creating relevance between knowledge and its application. Activities helped us to analyze the situations; interpret them on the basis of some logic. We could become able to apply knowledge for solving the problems*”. Apparently, the use of cooperative learning activities encouraged students to be more active in learning process and facilitated them to promote critical thinking in comparison with teacher-centered instructional methods like lecture method.

Cooperative Learning Promoted Understanding of Learning Technologies

The main objective of cooperative learning activities in this course was to enable the students using appropriate learning technologies properly. The students were provided extensive opportunities of using the available learning technologies like computer with its common functions, Internet and its related technologies and tools. The students appeared to be feeling pleasure in using such technologies for learning and knowledge building and its sharing. The students affirmed, “*Initially, we were semi-skilled and even some of us were un-skilled in using learning technologies. However, gradually the use of cooperative learning activities helped us to learn the use of learning technologies. We could become capable of recognizing and using appropriate technologies for enhancing our*

learning in groups and under the tutelage of our instructor. For completing activities we spent most of the time in using technologies and it became source of developing skill of technology”. Cooperative learning has been a good method for promoting understanding and using learning technologies and retention of useful learning materials.

Cooperative Learning Activities and Learning Styles of the Learners

Students come from different socio-cultural and economic-geographical backgrounds having diversified academic experience and intellectual potential. They come with individual differences and personality traits. They vary from one another with respect to their learning styles and aptitude. Therefore, it is difficult for the instructor to maintain same level of learning for all students in the class. In groups they learn from each other informally by extending help and sharing learning experiences & information according to their respective learning styles. The students valued cooperative learning activities as these accommodated their diversified learning styles. The majority of them said, “*We found cooperative learning activities to be worthwhile academic exercise. We worked on activities profoundly. Although these took a lot of class time but appeared to be constructive and suited to our learning styles*”. The use of cooperative learning activities promoted opportunities of discussing and clarifying their concepts, exchanging ideas, raising and addressing the questions, facilitating each other’s learning by exploring situations.

Conclusion –The Lesson



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This paper portrayed the effectiveness of cooperative learning activities in tertiary education classroom. According to the experience cooperative learning appeared to be highly constructive to students' learning. The Students were seemed to be learning to assuming the responsibility for their learning in groups, whereas the instructor became familiar with the strengths and weaknesses of their students through observation. The instructor and students reported cooperative learning activities to be useful in enhancing their learning, developing problem-solving approach, critical thinking and communication skills along with motivation. It appeared to be empowering students with the power of critical thinking and reflective practice.

Therefore, it is wished that the experience of using cooperative learning activities in teaching learning process be replicated at larger scale. It is asserted that highly structured cooperative learning activities would offer a large degree of flexibility to accommodate the diverse needs of disciplines at tertiary level of education by allowing students and faculty to interact in a creative and supportive environment.

Recommendations

Keeping in view the outcomes of the experience, the researcher/author recommended the following:

1. The university/ higher education institution may organize training for equipping faculty members with the skill of incorporating cooperative learning activities in classroom situation based on and pedagogical principles.

2. The instructors may conceive, develop and organize cooperative learning activities according to the objectives and learning outcomes of the course contents.
3. The instructors may ensure learners' understanding about significance of cooperative learning activities in professional life.
4. The instructors may set up practicing situations with tangible content by assigning specific roles to learners for accomplishing certain tasks to acquiring specific skills; and valuing these skills properly.
5. The instructors may provide appropriate time to learners for processing and debriefing to ensuring that learners could use these skills accordingly.
6. The instructors may ensure practice continuum to bringing about integration of cooperative learning activities through stages of skill development and awareness about the skills and their significance.
7. The instructors may ensure that interaction among learners through activity, interdependence, individual accountability, interpersonal communication; and interaction through reflection are built into the activity in a positive and persuasive way and presented in all structures and activities.

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References

- [1] Hussain, I. and Sultan, S. (2010). *Learning by Doing: Outcomes of Teaching a Research Course through Group Activities*. In Proceedings of Annual International Conference on Computer Science Education: Innovation & Technology (CSEIT 2010). Thailand; GSTF.doi:10.5176/978-981-08-7466-7 itcse-11.
- [2] Tuan, L. T. (2010). Infusing cooperative learning into an EFL classroom. *English Language Teaching*, 3(2), 64-77.
- [3] Tuan, L. T. (2010). Infusing cooperative learning into an EFL classroom. *English Language Teaching*, 3(2), 64-77.
- [4] Jones, K. A. and Jones, J. L. (2008). Making Cooperative Learning Work in the College Classroom: An Application of the 'Five Pillars' of Cooperative Learning to Post-Secondary Instruction. *The Journal of Effective Teaching*, 8(2), 61-76.
- [5] Downer, J. T., Rimm-Kaufman, S. E. & Pianta, R. C. (2007). How do classroom conditions and children's risk for school problems contribute to children's behavioral engagement in learning? *School Psychology Review*, 36(3), 413-432.
- [6] Huang, T.-C., Huang, Y.-M., & Yu, F.-Y. (2011). Cooperative Weblog Learning in Higher Education: Its Facilitating Effects on Social Interaction, Time Lag, and Cognitive Load. *Educational Technology & Society*, 14 (1), 95-106.
- [7] Neo, M. (2005). Engaging students in group-based co-operative learning- A Malaysian Perspective. *Educational Technology & Society*, 8 (4), 220-232.
- [8] Divaharan, S., and Atputhasamy, L. (2002). An attempt to enhance the quality of cooperative learning through peer assessment. *Journal of Educational Enquiry*, (3), 2, 72-83
- [9] Lotfy, N. (2012). *Seating Arrangement and Cooperative Learning Activities: Students' On-task/Off-task Participation in EFL Classrooms*. An unpublished Masters' thesis. Cairo, The American University in Cairo.
- [10] Kaufman, D., Sutow, E. & Dunn, K. (1997). Three Approaches to Cooperative Learning in Higher Education. *The Canadian Journal of Higher Education*, XXVII (2 & 3), 37-66.
- [11] Ledlow, S. (1999). Cooperative Learning in Higher Education. Arizona State University.
- [12] Neo, M. (2005). Engaging students in group-based co-operative learning- A Malaysian Perspective. *Educational Technology & Society*, 8 (4), 220-232.
- [13] Divaharan, S., and Atputhasamy, L. (2002). An attempt to enhance the quality of cooperative learning through peer assessment. *Journal of Educational Enquiry*, (3), 2, 72-83.
- [14] Felder, R. M. and Brent, R. (2005). Effective strategies for cooperative learning. *Journal of Cooperation & Collaboration in College Teaching* 10 (2), 69-75.
- [15] Hussain, I., and Safdar, M. (2008). Role of information technologies in teaching Learning process: Perception of the faculty. *Turkish Online Journal of Distance Education-TOJDE*, 9(2), 46-56.
- [16] Lotfy, N. (2012). *Seating Arrangement and Cooperative Learning Activities: Students' On-task/Off-task Participation in EFL Classrooms*. An unpublished Masters' thesis. Cairo, The American University in Cairo.
- [17] Wannarka, R., & Ruhl, K. (2008). Seating arrangements that promote positive academic and behavioural outcomes: a review of empirical research. *Support for Learning*, 23(2), 89-93. doi: 10.1111/j.1467-9604.2008.00375
- [18] Hussain, I. (2012). Use of Constructivist Approach in Higher Education: An Instructors' Observation. *Creative Education*, 3(2), 179-184.
- [19] Chickering, A. W., & Gamson, F. (Eds.). (1991). *New directions for teaching and learning: No. 47. Applying the seven principles for good practice in undergraduate education*. San Francisco, CA: Jossey-Bass.
- [20] Kaufman, D., Sutow, E. & Dunn, K. (1997). Three Approaches to Cooperative Learning in Higher Education. *The Canadian Journal of Higher Education*, XXVII (2 & 3), 37-66.
- [21] Attle, S. and Baker, B. (2007). Cooperative Learning in a Competitive Environment: Classroom Applications. *International Journal of Teaching and Learning in Higher Education*, 19(1), 77-83
- [22] Jones, K. A. and Jones, J. L. (2008). Making Cooperative Learning Work in the College Classroom: An Application of the 'Five Pillars' of Cooperative Learning to Post-Secondary Instruction. *The Journal of Effective Teaching*, 8(2), 61-76.
- [23] Paulson, D.R., & Faust, J.L. (2008). *Active Learning for the College Classroom*. Retrieved December 20, 2012 from <http://www.calstatela.edu/dept/chem/chem2/Active/main.html>
- [24] Weimer, M. (2007). *Active Learning Advocates and Lectures*. Retrieved June 22, 2012 from <http://www.teachingprofessor.blogspot.com/2008/06/active-learning-advocates-andlectures.html>.
- [25] Fink, L.D. (2004). *Beyond small groups: Harnessing the extraordinary power of learning*. In Michaelsen L., Knight, A. & Fink L.D. *Team-Based Learning: A transformative use of small groups*. Sterling, VA: Stylus Publishing.
- [26] Ediger, M. (2001). Learning opportunities in the higher education curriculum. *College Student Journal*, 35(3), 410.
- [27] Williams, R. B. (2007). *Cooperative Learning: A Standard for High Achievement*. Thousand Oaks, CA: Corwin Press
- [28] Hussain, I. (2012). Use of Constructivist Approach in Higher Education: An Instructors' Observation. *Creative Education*, 3(2), 179-184



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of Innovators in University Teaching

- [29] Hussain, I. and Sultan, S. (2010). *Learning by Doing: Outcomes of Teaching a Research Course through Group Activities*. In Proceedings of Annual International Conference on *Computer Science Education: Innovation & Technology (CSEIT 2010)*. Thailand; GSTF.doi:10.5176/978-981-08-7466-7 itcse-11
- [30] George, P. G. (1994). The effectiveness of cooperative learning strategies in multicultural university classrooms. *Journal on Excellence in College Teaching*, 5(1), 21
- [31] Terenzini, P.T., Cabrera, A.F., Colbeck, C.L., Bjoklund, S.A. (2001) Collaborative learning vs. lecture/ discussion: Students' reported learning gains. *Journal of Engineering Education*, 90(1), 123–130.
- [32] Basta, J. (2011). The role of the communicative approach and cooperative learning in higher education. *Linguistics and Literature*, 9(2), 125 – 143.
- [33] Hussain (2013). A study of learners' reflection on andragogical skills of distance education tutors. *International Journal of Instruction*, 6(1), 123-138.
- [34] Merriam, S. B. (2001). *Andragogy and self-directed learning: Pillars of adult learning theory; The New Update on Adult Learning Theory*, San Francisco: Jossey Bass.
- [35] Hussain (2013). A study of learners' reflection on andragogical skills of distance education tutors. *International Journal of Instruction*, 6(1), 123-138.
- [36] Hussain, I. (2012). Use of Constructivist Approach in Higher Education: An Instructors' Observation. *Creative Education*, 3(2), 179-184.
- [37] Hussain, I. and Sultan, S. (2010). *Learning by Doing: Outcomes of Teaching a Research Course through Group Activities*. In Proceedings of Annual International Conference on *Computer Science Education: Innovation & Technology (CSEIT 2010)*. Thailand; GSTF.doi:10.5176/978-981-08-7466-7 itcse-11
- [38] Jones, K. A. and Jones, J. L. (2008). Making Cooperative Learning Work in the College Classroom: An Application of the 'Five Pillars' of Cooperative Learning to Post-Secondary Instruction. *The Journal of Effective Teaching*, 8(2), 61-76.
- [39] Attle, S. and Baker, B. (2007). Cooperative Learning in a Competitive Environment: Classroom Applications. *International Journal of Teaching and Learning in Higher Education*, 19(1), 77-83.
- [40] Kaufman, D., Sutow, E. & Dunn, K. (1997). Three Approaches to Cooperative Learning in Higher Education. *The Canadian Journal of Higher Education*, XXVII (2 & 3), 37–66.
- [41] Hirtz, S., Harper, G. D. and Mackenzie, S. (Eds.) (2008). *Education for a Digital World: Advice, guidelines and effective practice from around the globe*. Commonwealth of Learning Canada; Vancouver, British Columbia.
- [42] Hussain, I. (2005). *A study of emerging technologies and their impact on teaching learning process*; A PhD unpublished dissertation. Islamabad, AllamaIqbal Open University
- [43] Rashid, M. (2005). *Educational Technology*. National Book Foundation, Islamabad.
- [44] Siemens, G. and Tittenberberger, P. (2009). *Handbook of emerging technologies for learning*; University of Manitoba. Learning Technologies Centre and Extended Education. Retrieved on 24 July 2012 from <http://ltc.umanitoba.ca/etl>.