THE EFFECTIVENESS OF PROBLEM BASED LEARNING APPROACH ON THE ACADEMIC PERFORMANCE OF THE ECONOMICS STUDENTS OF KAMPALA INTERNATIONAL UNIVERSITY, KAMPALA, UGANDA

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In Partial
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Award Of Master Of Arts In Economics

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By

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DECLARATION

I Kyolaba Sarah Dianah do hereby declare that this thesis is my original work and that it has never been submitted to any academic institution for award of a degree or the equivalent.

Signed: _____

On this 16th day of July the year 2006, at K.I.U

This thesis has been submitted for examination acceptance with my approval.

_____

Prof. Opio John Peter

Supervisor

Date 24/11/06

_____

Dr. O. Sunday

Supervisor

Date 2/11/06.

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DEDICATION

I dedicate this Research to my younger sisters; Aidat, Halimah, Habibah, Cousin Patrick, my son, and my future children. My struggle should inspire you to explore greater heights to achieve a higher step in life.



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To all of you, I say,

"Thanks"

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ACRONYMS

K.I.U: Kampala International University

PBL: Problem-Based Learning

PG: Posttest Gain

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OPERATIONAL DEFINITION OF TERMS

The following terms are operationally defined in the study;

Economics is the subject where the problem based learning approach was introduced.

Effectiveness refers to the mean scores of the research participants, and the increase of the posttest.

Problem based learning (PBL) refers to the teaching approach of the researcher that was introduced in the experimental group of students. Where the learners came up with a collaborative effort in getting information and present it to the class for discussion.

Conventional teaching refers to the traditional way of teaching, which was employed in the control group, where the teacher gave lecture /discussion to the class.

Posttests gain refers to the increase in posttest score from the pretest score.

PG = posttest score – pretest score

ABSTRACT

The study dwelt into the Effectiveness of Problem Based Learning Approach on the Academic Performance of the first year students of economics, of Kampala international university. The study aimed at examining the mean scores in both the pre-test and post-test for both experimental and the control group, whether there is a significant mean post-test gain, and asses whether there is a significant difference in the mean post-test gain in both experimental and control group.

A test questionnaire was used as the research instrument of the study to measure the knowledge. The quasi experimental method was used. The prepared t-test was used to determine significant differences between the pretest and the posttest results of the students in terms of knowledge.

The independent t-test was utilized in the evaluation of the significant differences between differences of learning employing the two methods of teaching.

The findings revealed that the posttest mean result of the problem based learning approach in terms of knowledge was higher compared to the conventional method. The mean posttest gain in the scores of the students in the experimental group was 73.84 higher to that of the control group which was 71.28 in terms of knowledge of the subject (economics)

There was no significant difference in the pretest result of the students in the two methods of teaching employed. There was no significant difference in the increase of the posttest gain scores of the students between the two groups.

Based on the findings of the study, it is concluded that the problem based learning approach did not significantly increase the students' posttest scores in the knowledge in economics. It was highly recommended that problem based learning be used as a method of teaching along side the conventional approach in subjects like mathematics, economics, physics and other related subjects, that will develop the totality of the learner equip with. their knowledge of the chosen car.

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CHAPTER 1

GENERAL INTRODUCTION

Introduction

In this chapter, the researcher is looking at the very vital aspects of this research or the basics of the study. The background to the study or the rationale of the study is emphasized in this chapter. The basics of the study; the research problem is looked at in this study, the research objectives of the study are also emphasized which comprise of both the general objective and the specific objectives of the study. This gives us the reasons why the researcher is carrying out the study.

The chapter is also looking at the research questions, the hypothesis which leaves questions to be answered by the research findings. The significances of the study which shows how the study would be useful to the different kinds of people are also catered for.

Rationale of the Study

Education to be meaningful should cope along with time and the needs of society. Students of this generation have shown inherent desire to involve themselves in all the activities and processes in their lives. Therefore, the group process of teaching as a method seems to be effective to have good learning. Problem based learning approach is one of the group methods of teaching where the environment is learners centered. That is, students learn in practical way of

solving problems in a given situation. The problem is posed that students discover that they need to learn some knowledge before they can solve the problem; the researcher believes that PBL is the best method of teaching economics.

Problem-based learning, the type of approach that needs to solve a problem has been around for centuries. Indeed, in the Stone Age, people learned skills and approaches to solve problems to survive. Therefore, the researcher suggests that all research is PBL, although we do not call it that, we call it research. In the 1960s McMaster Medical School introduced a learning environment that was a combination of small group, cooperative, self-directed, interdependent, self-assessed PBL. Since then this approach has been called "PBL". But PBL, as suggested previously, can be in any form where a problem is posed to drive the learning. To overcome the confusion, the researcher suggests using the terminology of small group, self-directed, self-assessed PBL when referring to learning environments similar to the McMaster Medical school approach.

The most hurting thing in universities and colleges today is the unprepared-ness of both the lecturers and students for real university and college work. To improve on quality of university and college education, teachers and instructors should be dynamic and flexible in using the various approaches to and techniques of teaching.

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Knowledge to the subject matter is no longer sufficient to make an effective instructor or professor, but the necessary training and skills do produce effective teaching and learning.

Teachers and instructors should realize that the basics and the techniques of teaching are interrelated parts of professional preparations. Good learning takes place through self activity. Self activity is a requirement of all learning and of all mental physical, emotional, and social growth and development. The speed is in direct proportion to the amount of activity that is aroused during the process hence it can be established that action promotes learning. This also realizes the role of student to work with others since intellectual growth of students can also be achieved through group work and cooperation. The best way to good learning is the involvement of students into group work or when it is made as a social process, integrating the self and the environment.

Children's ways of learning are as different as the colors of the rainbow. All people have different personalities, preferences and tastes. There is no best method of teaching that has been proven. Therefore, it depends on the kind of subject matter and the conditions that the instructors think best fits the situation. Thus the researcher has decided to come up with the study on problem based method of learning to predict how much learning and acquisition of knowledge will be in this method of learning. A major subject in the study is economics, in which the researcher believes that can be best taught using the problem based

learning (PBL). With the need for academic excellence, the researcher wants to implement another method of teaching in economics which has been suggested by many psychologists and educators. With this reason, the researcher who is member of the department of economics, looks forward for the students to graduate from the university (KIU) with not only the knowledge of his /her instructor but also to be economists with the knowledge to over-come problems that their economy faces.

Thus the researcher decided to come up with the study on problem based learning to predict how much learning will be there in this kind of technique. The researcher believes that there is a method or technique that suits a specific type of lesson or subject matter in every classroom situation. A major subject in economics, in which the researcher believes that, can be best taught through problem based learning (PBL).

In this case the researcher wants to implement another method of teaching in economics which is problem based learning.

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CASE STUDY PROFILE

This chapter looked at the profile of the research study which was carried out at Kampala International University, main campus, Kansanga Gaba road, about 3km from Kampala city. The study targeted to illicit information about the profile of the University. In this chapter the researcher looked the year when the university was opened, location, management body, courses offered, mission statement, the vision, the philosophy, and student's affairs.

Over the years, the private sector in East Africa has grown rapidly. The influx of foreign investment, the emerge of non-governmental organizations, expansion of the service and manufacturing sector as well as the increased scope of delivery of public services all require skilled workers.

It is against this background that Kampala International University was founded in October 2001. The promoters of the University had the vision of a private institution of higher learning that would offer learning opportunities to students in east Africa and beyond.

Located at Kansanga, rapidly growing suburb of Kampala, K.I.U is only 3 kilometers from the city center.

The location of the University, near Uganda's commercial capital, provides students with opportunities for social and cultural enrichment.

Kampala international university is licensed by the National Council for Higher Education and is the first private university to be licensed by the same Council.

Kampala International University has carefully selected a team of highly qualified and dignified academicians supported by individuals of high integrity in its organizational structure. The selfless individuals work very hard to ensure the smooth running of the university.

The University offers both undergraduate and graduate programs on full-time as well as part-time basis during the day, evening and weekend. All K.I.U academic programs are conducted on a semester basis except the access program, in-service education courses, medical courses and graduate courses which follow separate schedules.

Student's Affairs

K.IU is made up of a lingual cultural community, which thrives in dynamic environment. Faculty and students are drawn from various parts of the world. The directorate of students' affairs provides counseling services.

The directorate of student's affairs together with the students' guild organizes a variety of activities such as cultural events, workshops, sports, religious activities, social gatherings, trips and the K.I.U International Day (Cultural Gala).

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Accommodation

Kampala International University currently runs a hostel which accommodates 800 students. The hostel is adjacent to the university. This has helped ease the limited on compass accommodation.

The university also identifies private hostels in the neighborhood where students can stay. The hostels are of the standards expected the university.

Philosophy

K.I.U's philosophy is to regard each student as a unique individual who brings to the learning environment certain strengths and weakness. The duty of the university is actualize the students' potentialities to ensure that the educational experiences are designed to produce productive graduates who can contribute positively to the overall well being of society and the world at large. Holistic development and a strong, positive intellect is what we strive to develop in each student

Vision

Kampala international university will be a premier institution of international recognition preparing students for global markets.

University Mission

The mission of K.I.U is to respond to societal and educational needs by developing and delivering pragmatic academic programmes that are responsive to the market place. The university offers traditional pre-service students as well as adult students from the great lakes region and beyond by delivering high quality programmes through innovative teaching methodologies that engage students in self-directed learning.

Principal Officers of the University

The Vice Chancellor

The Deputy Vice Chancellor-Finance and Administration

The Deputy Vice Chancellor-Academic Affairs

The Resident Director

The Director Academic Affairs

The Director Finance

The Deputy Director Finance

The Director Academic Affairs

The Director Marketing and Public Relations

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The Deputy Director

The Director Admissions

The Director Weekend and Evening Program

Director Access Program

The Director ICT

The University Librarian

The Representative of Deans

Residents Director-Western Campus

Schools in the University

The school of Post Graduate Studies; Research and Evaluation Center

School of Business and Management

School of Health Sciences

Faculty of Social Sciences and Law

Faculty of Education

The based her study in the faculty of Education of Kampala International University and it offers the following courses:

Bachelor of Arts with Education,

Bachelor of Science with Education,

Bachelor of Computer science with Education,

Bachelor of Education (Arts),

Bachelor of Education (Science),

Diploma Secondary Education (Science and Arts), and

Diploma in Primary Education.

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Statement of Research problem

Teaching is more than standing before a class and applying a few specific techniques. It is not merely presenting text book information and then testing the student's ability to repeat it. There is no magic formula for transforming knowledge from the teacher's mind to align the pupil's. Teaching is not a mechanical process. It is an intricate, exacting and challenging job. (KOCHHAR, 2002).

Economics is one of the subjects that is offered in the faculty of education. Compared to all the subjects offered at the Faculty, Economics takes about 15% of the total number of students admitted. That has reasons that students perceive that the subject is very hard therefore, they presume that they cannot pass even if they read hard. Not only that but also they are always discouraged by others the teachers who teach the subject.

This has led to tremendous poor performance of the students offering the subject. This is becomes questionable as to why? Although there are many factors that influence the performance of students like perception, social economics problems, but also the methods of teaching are one of the most attributing factors for poor performance.

There is no one method of teaching (Burch, 1995). Different teaching methods are employed in different situations, by different teachers, with different results

(Samford, 1998). Teaching is a complex act, what works in some situations with some students may not work in different school settings with different subjects, students, and goals. Some educational researchers maintain that we cannot distinguish between good and poor or effective teachers and non effective teachers that no one for sure agrees to what the competent teacher is. The poor or good, effective or ineffective teacher will depend on the method of teaching he or she utilizes. There are many methods or techniques of teaching; it is the role of the teacher to determine the best method to apply. A good method implies one that looks forward to personality development of the student.

But the group method of teaching, in a learner-centered environment, where learners have to discover what they have to learn in a practical way, (problem-based learning) has proved to be an effective way of disseminating knowledge to students.(Aggrarwal, 2000). However, university students are adults who are supposed to be mature for lecture method of knowledge delivery. The lecture method has been the popular method of knowledge delivery in the department of economics at KIU. The results have not been encouraging judged by the unimpressive academic performance of students. One wonders if the poor performance and apathy towards the subject is the result of the teaching method, and if the introduction of PBL to Economics would make a difference, then the PBL method will appropriate in the teaching of economics.

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The research was therefore designed to compare the effectiveness of the traditional lecture method employed in universities, with the effectiveness of adopting PBL in the dissemination of Economics facts and principles to Economics students at KIU.

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Objectives of the study

General Objective

This study will determine the effectiveness of problem based learning approach on the knowledge of economics among economics students of Kampala International University.

Specific Objectives

1. To examine the mean score in the pre-test and post-test for the knowledge acquired in the:
    1.1 experimental groups (problem based learning)
    1.2 control group (traditional teaching)
2. To assess whether there was a significant mean post-test gain in the scores of the students in the experimental group over the gains of students in the control group.
3. To assess whether there was a significant difference in the mean post-test gain of students between the experimental and control groups in terms of knowledge acquisition.

Research questions

This study determined the effectiveness of PBL approach on the knowledge of the economics students of first year in Kampala international university.

This may act as steering wheel to the economists in the field, making them realize the great challenge in the economy-focused approach rather than product-centered approach.

The teachers will be provided with information on the best method and approach that could meet the learners' needs for effective transfer of theories to life's problem. Specifically, through this investigation, the economics facilitators will know which method is more effective in teaching.

This may also be beneficial to the students of economics in the analysis of their academic competencies, acquiring of knowledge so as to discover individual potentials that might help them in their fields of practice as economists.

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CHAPTER 2

REVIEW OF RELATED LITERATURE

Introduction

This chapter delves into the theory on which the study is based, the review of the related literature in which the researcher appreciates the work of other scholars that they have written in relation the research study; in this, we look at the different roles played by the different people in PBL or the research study and also the different methods of teaching compared to the problem-based method of teaching.

If teaching is to be a self-respecting and respectful profession, every teacher should have a theory of education. Teachers should know clearly what they are trying to achieve, why they teach certain thing to learners, why they use certain methods of teaching. It is not always as easy as one would expect to be clear on these matters. Instructors have been confronted by many ideas about education, by people who have conflicting proposals as to what should be done. Somehow we have to evaluate these and decide on our own theories.

Theory

This study was based on constructivism theory. As a philosophy of learning, constructivism can be traced at least to the eighteenth century and the work of the Neapolitan philosopher Giambattista Vico, who held that humans can only clearly understand what they have themselves constructed (Edward and Mercer, 1987). Many others worked with these ideas, but the first major contemporaries to develop a clear idea of constructivism as applied to classrooms and childhood development were Jean Piaget and John Dewey.

The researcher focused on John Dewey's work. For Dewey education depended on action. Knowledge and ideas emerged only from a situation in which learners had to draw them out of experiences that had meaning and importance to them (De vries et al, 2002). These situations had to occur in a social context, such as a classroom, where students joined in manipulating materials and, thus, created a community of learners who built their knowledge together.

Constructivism view learning as an active process in which the learners actively construct knowledge as they try to comprehend their worlds. Each of us generates our own mental models or schemas through which we make sense of our experiences. According to Piaget 1950, mental models are constructed by our prior knowledge, current mental structures and existing beliefs. Learning is just adjusting our mental models to accommodate new experiences. At least two positions are found with the constructivist thought:

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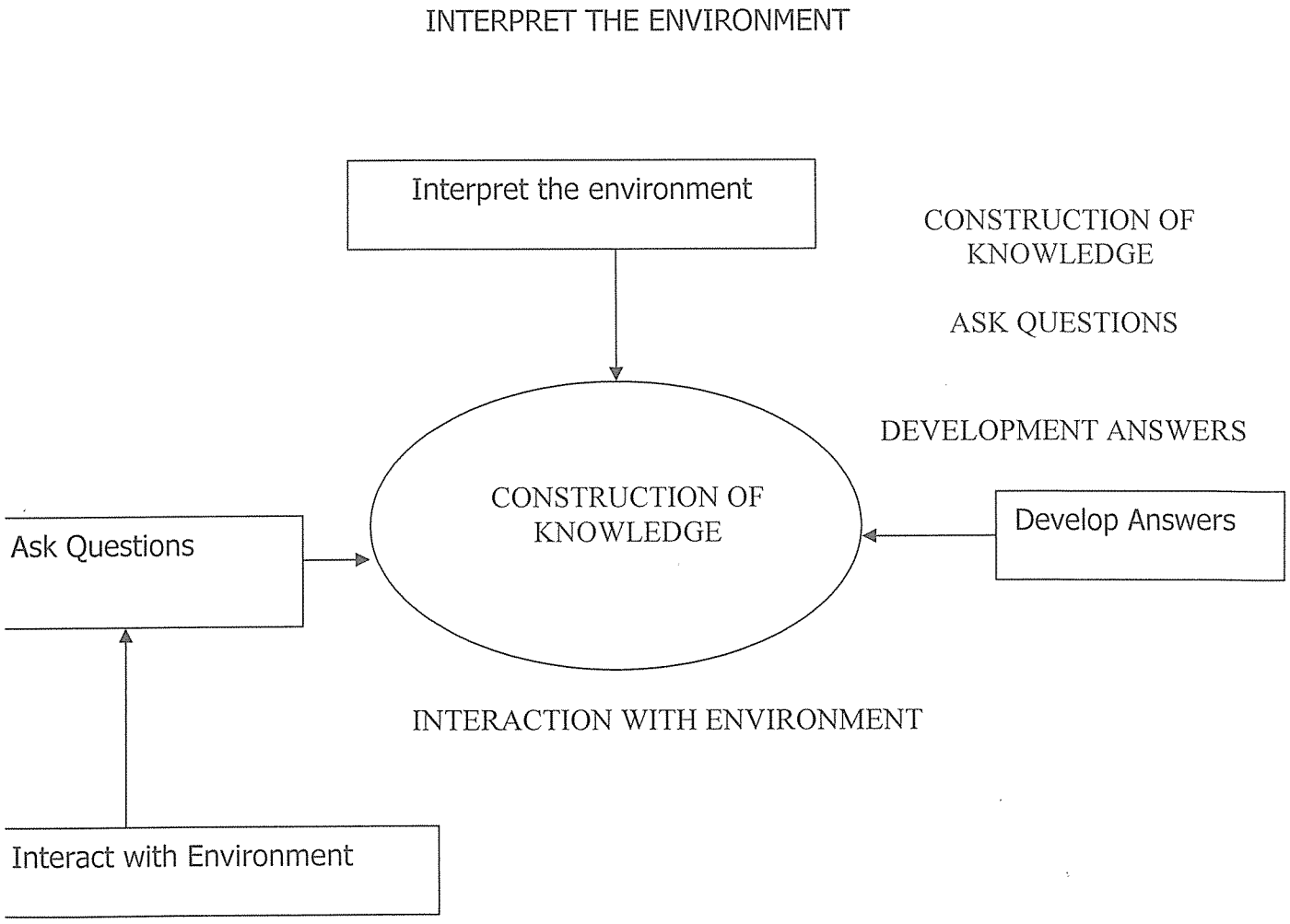
Those in the realist position view cognition as a process by which learners eventually construct mental schema that corresponds to the environment. The radical constructivists are of the opinion that cognition serves to organize the learner's experimental world, rather to discover the ontological reality.

Figure 1: CONSTRUCTIVIST THEORY CONCEPT MAP



ource: Brooks & Brooks (1993)

A new trend in constructivism is enactive constructivism. The enactive constructivism position is non-fundamental, meaning that it takes neither the objective world as pre-given. Rather, both are mutually specified in the history of activity that is called structural coupling. Thus philosophy supports the idea that understanding transforms the world by transforming the self (Bransford and Brown, 2002). Constructivists hold the following views: The mind is seen as inner representation of an outer reality. Knowledge is residing in the mind, thus learning results from a personal interpretation of the world. Thought is grounded in the perception and bodily experience. Meaning is internally constructed and is developed on the basis of experience. Meaning requires understanding wholes as well as parts. Learning is the search for meaning. A constructivist learning event is characterized by; Content is not specified before hand, and must be constructed by the learners own knowledge. This knowledge must be integrated across curriculum and relevant fields of expertise. Content involves multi-sensory participation. Learners are presented with a specific problem to solve. The learning should occur in realistic contexts. Problem solving skills developed during the event is unique to each individual. Learning takes place through discovery, experience and modeling. The learner is actively involved, is in transaction with the learning material and has control of learning. The educator supports the learner to construct conceptual and functional schemas of the event

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According to Cole and Griffin 1987, radical constructivism rejects the traditional philosophical position of realism and adopts a relativist position. The traditional view of realism sees knowledge as a representation of an absolute reality-a world out there `prior to having been experienced. The radical constructivists see knowledge as something which is personally constructed by individuals, in an active way, as they try to give meaning to a socially accepted and shared notion.

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Figure 2: Theoretical Framework of the Study

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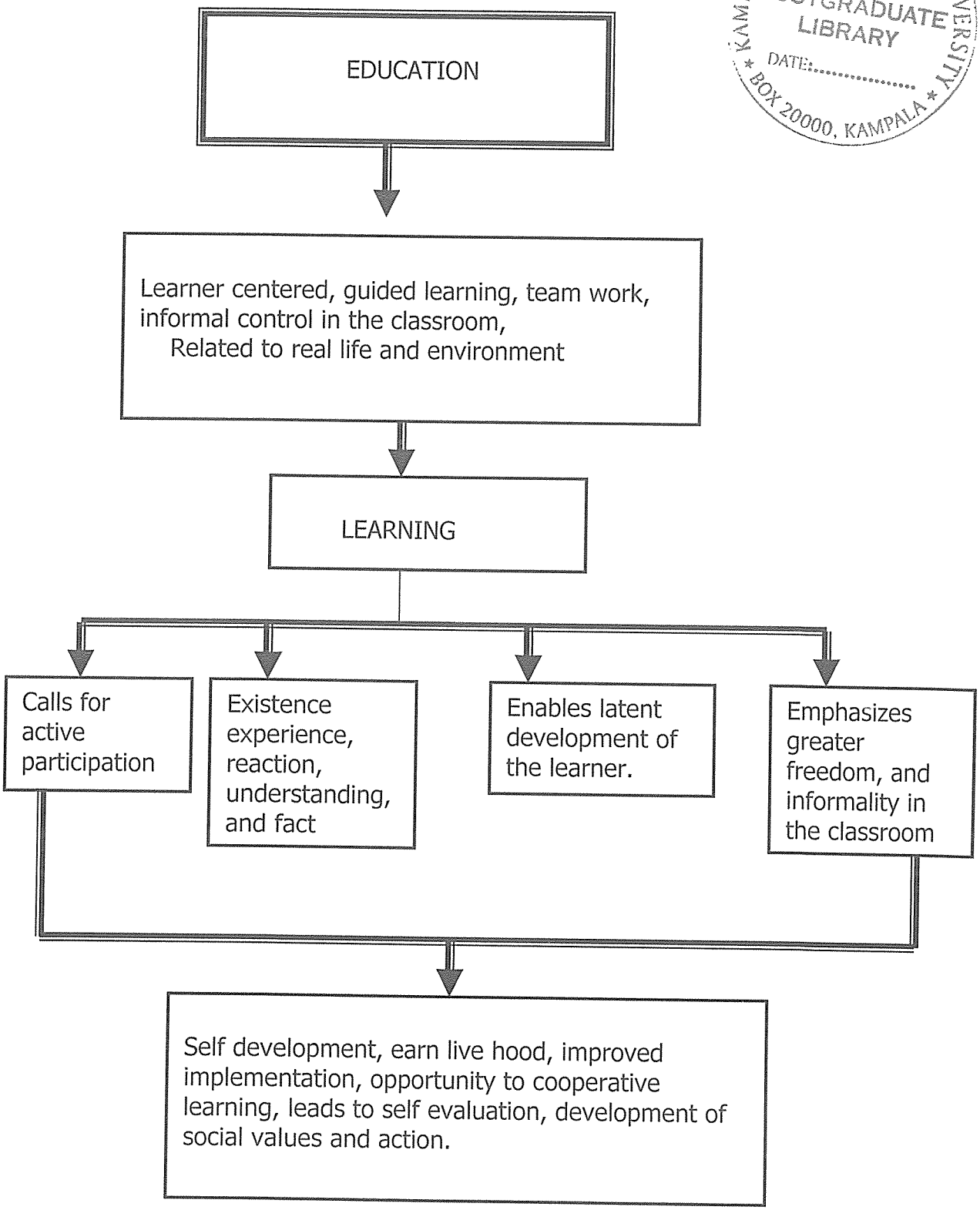

Source: Primary Data, 2006

Related Literature

Problem-based learning (PBL) is a total approach to education. As defined by Dr. Howard Barrows and Ann Kelson of Southern Illiois University School of Medicine, PBL is both a curriculum and a process. The curriculum consists of carefully selected and designed problems that demand from the learner acquisition of critical knowledge, problem solving proficiency, self-directed learning strategies, and team participation skills. The process replicates the commonly used systemic approach to resolving problems or meeting challenges that are encountered in life and career.

In most courses, students are bombarded with enormous amounts of material to read and display their comprehension by completing related problems. These problems typically have required a neat, pat answer. This method does not prepare our students for professional problem resolution.

According to James & Baldwin (1997), PBL alters traditional teaching and learning patterns. This process of presenting a topic piece by piece until students assimilate the various pieces of knowledge and hopefully apply them to personal and professional problems has not been shown to be effective. PBL allows students to explore relevant sources of knowledge. PBL encourages students to take charge of their own learning.

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They give the following 10 basic guiding principles of constructivist thinking that educators must keep in mind:

Table 1: The 10 guiding principles of constructivism

It takes time to learn: learning is not instantaneous. For significant learning we need to revisit ideas, ponder them try them out, play with them and use them. This cannot happen in 5-10 minutes.	Learning is an active process in which the learner uses sensory input and constructs meaning out of it: Learners need to do something, because learning involves the learners engaging with the world.
People learn to learn as they learn: learning consists both of constructing meaning and constructing systems of meaning. Each meaning we construct makes us better able to give meaning to other sensations which can fit a similar pattern.	The crucial action of constructing meaning is mental: it happens in the mind. We need to provide activities which engage the mind as well as the hands.
Learning involves language: the language we use influences learning. People talk to themselves as they learn, and language and learning are inextricably intertwined.	Learning is a social activity: our learning is intimately associated with our connection with other human beings, our teachers, our peers, and our family. Conversations, interaction with others and collaborations are an integral aspect of learning
Learning is contextual: we do not learn	One needs knowledge to learn: it is not

isolated facts and theories in some abstract ethereal land of the mind separate from rest of our lives. We learn in relationship to what else we know, what we believe, our prejudices and our fears.	possible to assimilate new knowledge without having some structure developed from previous knowledge to build on. The more we know the more we can learn
Learning is not the passive acceptance of knowledge which exists "out there". Learning involves the learner engaging with the world and extracting meaning from his/her experiences	Motivation is a key component in learning. Not only is the case that motivation helps learning, it is essential for learning.

Source: James & Baldwin (1997).

Brooks & Brooks (1993) offer an interesting comparison of the visible differences between the traditional and the constructivists' classroom:

Table 2: comparison of PBL to the traditional method of teaching

Traditional classroom	Constructivist Classroom
Students primarily work alone.	Students primarily work in groups.
Curriculum is presented part to whole, with emphasis on basic skills.(bottom – up)	Curriculum is presented whole to part with emphasis on the big concept.(top - down)

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Strict adherence to a fixed curriculum is highly valued.	Pursuit of student questions is highly valued.
Curricular activities rely heavily on textbooks of data and manipulative materials.	Curricular activities rely heavily on primary sources.
Students are viewed as "blank slates" onto which information is etched by the teacher	Students are viewed as thinkers with emerging theories about the world.
Teachers generally behave in a didactic manner, disseminating information to students.	Teachers generally behave in an interactive manner mediating the environment for students.
Teachers seek the correct answers to validate student lessons.	Teachers seek the student's point of view in order to understand student learning for use in subsequent conceptions.
Assessment of student learning is viewed as separate from teaching and occurs almost entirely through testing.	Assessment of student learning is interwoven with teaching and occurs through teacher observation of students at work and through exhibitions and portfolios

Source: Brooks & Brooks (1993).

PBL is both a curriculum and a process. The curriculum consists of carefully selected and designed problems that demand from the learner acquisition of critical knowledge, problem solving proficiency, self-directed learning strategies, and team participation skills. The process replicates the commonly used systemic approach to resolving problems or meeting challenges that are encountered in life and career (Barrows, 1992)

Problem-based learning is a development and instructional approach built around an ill-structured problem which is mess and complex in nature; requires inquiry, information-gathering, and reflection; is changing and tentative; and has no simple, fixed, formulaic, "right" solution (Finkle & Torp, 1995).

Problem-Based Learning (PBL) is an instructional strategy that promotes active learning. PBL can be used as a framework for modules, courses, programs, or curricula (Samford, 1998).

According to Barrows and Tamblyn (1980) PBL can, regardless of discipline, enhance students' achievement of:

i. Adaptation and participation in change
ii. Application of problem solving in new and future situations
iii. Creative and critical thought
iv. Adoption of holistic approach to problems and situations
v. Appreciation of diverse viewpoints

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vi. Successful team collaboration

vii. Identification of learning weaknesses and strengths

viii. Promotion of self-directed learning

ix. Effective communication skills

x. Augmentation of knowledge base

xi. Leadership skills

xii. Utilization of relevant and varied resources

Facilitator Role

A constructivist learning setting differs greatly from one based on the traditional model. In the constructivist classroom the teacher becomes a guide for the learner, providing bridging or scaffolding, helping to extend the learner's zone of proximal development. The student is encouraged to develop metacognitive skills such as reflective thinking and problem solving techniques. The independent learner is intrinsically motivated to generate, discover, build and enlarge her/his own framework of knowledge.

The role of the lecturer is very different from the usual teacher's role. Rather than being a "content expert" who provides the facts, the lecturer is a facilitator, responsible for guiding students to identify the key issues in each case and to find ways to learn those areas in appropriate breadth and depth. Although students have much more responsibility in PBL than in most conventional approaches to teaching, the tutor is not just a passive observer. He or she must

be active and directive about the learning process to assure that the group stays on target and makes reasonable choices on what issues are keys to study (Bloom 1956)

The target should be to make students (learners) understand the concepts. To achieve this, we have to let them do the learning. Therefore our focus should not be to teach but prepare the young men and women entrusted to us by the society to educate themselves through their lives. (Wilson Muyinda Mande 2001).

Brooks & Brooks (1993) offer an interesting comparison of the visible differences between the traditional and the constructivist classroom:

The facilitator role is to act as a:

i. Content and procedural resource person
ii. Facilitator of group processes
iii. Guide to additional resources
iv. Sounding-board person
v. Learner, as well

Issues for facilitators in delving into PBL, particularly in the learning stages, is the amount of time needed to prepare course materials, develop problems, train other facilitators and determine authentic assessment of student work. The other critical issue is the role reversal. Instead of being the "sage on the stage," the faculty member is now to be the "guide on the side." Instead of lectures, the

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faculty member now models various methods of problem-solving, sometimes referred to as "cognitive apprenticeship" learning (Brown, Collins & Newman, 1989). Meta-cognitive questions such as "How do you know that?" "What assumptions might you be making?" and "What else might you need to know?" are used by faculty versus dictating how to solve a problem.

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In problem-based learning, the traditional teacher and student roles change. The students assume increasing responsibility for their learning, giving them more motivation and more feelings of accomplishment, setting the pattern for them to become successful life-long learners. The faculty in turn becomes resources, tutors, and evaluators, guiding the students in their problem solving efforts.

The role of the teacher is to be responsible for creating a climate for thinking so that students feel free to think, encouraged to think, and are challenged to think. The democratic principle of respect for others has been violated from a different point of view. Individuals do not always select the most direct, the least cost, or the most appropriate means to gain their ends. Theories urge to distinguish between knowing and learning. Knowing is part of learning, that true learning has occurred only when the behavior of the individual has been changed. It is easy to distinguish between the two when one realizes that individuals do not always behave in the light of their knowledge. Change is timely in the teaching profession as teachers are at the brink of the century. Indeed in this new century, it is all together that all teachers fitting take an introspective look at

themselves and try to assess how to move for a better development of their students and the community at large.

Student Role

The student role is altered with PBL. PBL contrasts considerably with the traditional teaching most students have encountered. Students, particularly freshmen, have difficulty with the concept and use of self-directed learning (Schmidt, Henny & de Vries, 1992). Be aware that students may react to the idea of PBL with shock, denial, anger, resistance, acceptance and finally, confidence.

According to Vigotsky 1978, Problem-based learning (PBL) begins with students, working in small groups, delving into, determining key issues, and then solving a "real-world" problem under the guidance of a facilitator. By focusing upon a realistic problem, students develop a varied and deeper perspective and knowledge of the subject area. This process is not a new one; indeed, it has its beginnings in the ancient apprenticeship model which is learning by doing.

Students also must take responsibility for their own learning. PBL encourages students to identify their learning needs and determine the resources they will need to use to accomplish their learning. With the independent learning comes considerable collaboration with other students and faculty. Collaborative work among students facilitates their comprehension of the problem and the application to future situations. Collaboration is an essential skill for students to gain as they will most likely be working as members of teams in their respective workplaces.

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Students involved in problem-based learning acquire knowledge and become proficient in problem solving, self-directed learning, and team participation. Studies show that PBL prepares students as well as traditional methods. PBL students do as well as their counterparts from traditional classrooms on national exams, but are in fact better practitioners of their professions.

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Two often difficult tasks that students encounter in PBL is the process of reflection and peer assessment. Reflection, or self-assessment, allows the student to complete the learning cycle. What did I learn? What more do I need to know? How can I approach this problem in the future? And so forth are key questions we want students to ask of themselves. Students must become proficient in not only assessing their own progression in learning, but that of their peers as well. The ability to monitor one's own learning as well as providing credible feedback to one's colleagues is an important personal and professional skill.

Orienting students to PBL is a must. One approach would be to introduce the concept and rationale for use of PBL in a course (or curriculum). Another would be to have the students work on a sample problem which is followed by a debriefing session.

PBL Process: Group Process

There is sufficient evidence in the literature that most students learn better when they are collaborating, providing and receiving information, supporting and encouraging, resolving conflicts and communicating with others. Group work, then, can enhance student learning. Placing students in groups and expecting nature to take its course will not work. Group members require the knowledge and skills to work their way through the group process. Without such information, a situation such as this can occur:

The criteria for successful group work, according to Meyers and Jones (1993) requires the group activity to:

i. Allow a sense of interdependence among the group members
ii. Encourage individual student's accountability to the other group members and the instructor
iii. Provide frequent face-to-face interaction for promotion of team goals
iv. Allow for the development of social skills needs for collaboration
v. Complete the cycle with critical analysis of the group process

The small group setting used in PBL encourages an inquisitive and detailed look at all issues, concepts and principles contained within the problem. The time spent outside of the group setting facilitates the development of skills such as literature retrieval, critical appraisal of available information and the seeking of

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opinions of peers and specialists. PBL encourages students to become more involved in, and responsible for, their own learning, and most students and faculty report that this is a highly enjoyable way to learn and teach.

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In keeping with the overall objectives of PBL at Queen's, each problem is intended to encourage the student "to develop an appreciation for the interrelated nature of the physical, biological, and behavioral mechanisms that must be considered with each health problem". By participating in this learning format, students will become proficient in the process of problem analysis, hypothesis generation, and the generation of learning issues that warrant further exploration. Each problem is intended to provoke critical enquiry, encourage independent access to a variety of learning resource materials, and generate small group discussion. The depth and breadth of the discussion on any particular topic will vary, depending on where the students are in the program.

By virtue of participation in the process of Problem-Based Learning (PBL), the student will achieve the following educational objectives:

1. Develop an ability to identify relevant economic problems that warrant further discussion or self-study within the context of an economic scenario presented.

2. Develop an appreciation for the interrelated nature of the physical, biological and behavioral mechanisms that must be considered with each health problem during the process of generating a management plan.

3. Develop the knowledge base necessary to define and manage the economic problems of the country, including the social and political aspects, within the context of effective economic provision within society.

4. Reinforce the development of an effective economic reasoning process including the skills of problem synthesis, hypothesis generation, and critical appraisal of available information, data analysis, and decision making.

5. Cultivate the skills necessary to become self-directed as a learner, acknowledging personal educational needs and those of group members, and making effective use of available learning resources.

6. Function effectively as an active participant within a small group engaged in learning.

7. Recognize, develop and maintain the personal characteristics and attitudes necessary for a career in the professions.

Above all problem-based learning encourages students to take charge of their education. It emphasizes critical thinking skills, understanding, learning how to learn, and working cooperatively with others.

It seems to reflect the way the mind actually works, not a set of parlor-game procedures for manipulating students into learning; Thus, seen as a reification of cognitive processes, in a problem-based approach teaching and learning at last

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seem like two sides of one coin, not something done by one group to another, and faculty instinctively feel the intellectual commonalities between research and teaching, between their own intellectual lives and their role in the intellectual lives of students Says Ulmer: "This approach gives students immediate feedback. It keeps a constant flow going between teachers and students, and you can't put a price tag on that."

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"The Lone Ranger is gone," says John Cavanaugh. That's the second reason PBL's time has come. "The way the world works now, it's about working together." What students learn about collaboration, different approaches to a problem, cooperation and responsibility, makes their learning in PBL courses multisided, richer, and, in that way, deeper.

According to Tara CHAND (1999) learning is an active or dynamic process. Learning takes place only through self activity. He based this statement on the theory of self activity by

Froebel that one learns only through his own self activity. A child learns to do a thing by actual doing, not by memorizing the rules or by watching others.

In other words, we do not learn singing, oratory, or painting, by standing as passive witnesses. The individual learns what he is experiencing. It can be stated, therefore, that the learning process is essentially experiencing, reacting, doing, and understanding. There must be something compellingly effective

about problem-based learning, given the level of faculty interest in it all through higher education. After all, no one thinks it's easier or takes less time. And, as with almost every other change in teaching, students resist it, at least at first.

Problem-based learning (PBL) is an instructional method that challenges students to "learn to learn," working cooperatively in groups to seek solutions to real world problems. These problems are used to engage students' curiosity and initiate learning the subject matter. PBL prepares students to think critically and analytically, and to find and use appropriate learning resources

PBL is characterized by the following:

- Ill-structured, complex problems provide the focal point(s) and stimuli for the course, curriculum and/or program.
- Learning is student-centered.
- Facilitator act as a coach or facilitator.
- Students work in small groups to solve/provide multiple solutions to problems
- Learner assessment is enhanced by self and peer assessment.

According to Corvera (2004), instruction is a personal craft so teachers must be confident in choosing a variety of strategies to motivate and engage students in learning. They form a continuum from direct to indirect teaching. Direct

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instruction is teacher-centered and indirect instruction is student-centered. Student-centered believes that learning is a result of student's ability to understand and process information. The teacher facilitates indirect learning. A combination of direct and indirect instruction is possible, depending on the nature of the lesson, student needs, and teacher preference. Learning is active. It involves reaching of the mind. It involves organic assimilation starting from within. Learning should never be passive exercise on the part of the learner. Teachers should organize the learning experiences of students in such a manner that the students get actively absorbed in the learning.

PBL is any learning environment in which the problem drives the learning. That is, before students learn some knowledge they are given a problem. The problem is posed so that the students discover that they need to learn some new knowledge before they can solve the problem.

The continued use of PBL arises from the recognition that students retain minimal information obtained from traditional didactic teaching and have difficulty transferring knowledge to new experiences (Schmidt, 1983). According to Schmidt, PBL provides an environment in which students can draw upon prior knowledge, learn within the real-world context, and reinforce the knowledge through independent and small group work.

Problem-based learning (PBL) is a total approach to education. As defined by Dr. Howard Barrows and Ann Kelson of Southern Illinois University School of

Medicine, PBL is both a curriculum and a process. The curriculum consists of carefully selected and designed problems that demand from the learner acquisition of critical knowledge, problem solving proficiency, self-directed learning strategies, and team participation skills. The process replicates the commonly used systemic approach to resolving problems or meeting challenges that are encountered in life and career. The traditional and well-known "Case approach", popular with business schools, may or may not be problem-based learning. Often the case is used to integrate previously-learned knowledge and hence would not be, according to this definition, problem-based learning.

Problem based learning begins with the introduction of ill-structured problem on which, all of the learning is being centered. The learners work independently with a given problem or situation and engage in formulating solutions to the problem, teachers assume the role of cognitive and metacognitive coach rather than knowledge-holder and disseminator. Students assume the role of problem-solvers, decision-makers and meaning makers rather than passive listeners.

PBL causes a shift in the roles, teachers as coach and students as active problem-solvers, problem as initial challenge and motivation. The role of the teacher in the lecture is to ct as an expert, which directs thinking, holds knowledge and evaluates. In direct instruction the teacher as a conductor, orchestrates learning, guides rehearsal, evaluates students; in case methods

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teachers as consultants which conduct pre and post lectures, sets environment, advises and evaluates students.

PBL promotes motivation, making students more engaged in learning. Reliance and context offers students obvious answers to the questions. Why do we need to learn this information? What do I do in school that has to do with anything in the real world? Another thing is that PBL promotes higher order thinking.

In problem-based learning, the traditional teacher and student roles change. The students assume increasing responsibility for their learning, giving them more motivation and more feelings of accomplishment, setting the pattern for them to become successful life-long learners. The faculty in turn becomes resources, tutors, and evaluators, guiding the students in their problem solving efforts. In some ways what PBL is seems self-evident: it's learning that results from working with problems. Official descriptions generally describe it as "an instructional strategy in which students confront contextualized, ill-structured problems and strive to find meaningful solutions."

Thus, seen as a reification of cognitive processes, in a problem-based approach teaching and learning at last seem like two sides of one coin, not something done by one group to another, and faculty instinctively feel the intellectual commonalities between research and teaching, between their own intellectual lives and their role in the intellectual lives of students.

William J. Cerbin, University of Wisconsin – La Crosse with the Knowledge Media Lab of the Carnegie Foundation, In order to promote students' understanding of key concepts related to learning and teaching, I adopted a problem-based learning (PBL) approach in my educational psychology course. The course is organized around six problems. In the second problem, I ask students to explain why reciprocal teaching (RT), an approach to teaching reading comprehension, works. In theory, the students have all the knowledge they need to understand why RT works, but in practice initially they can't develop an effective explanation of it. The reciprocal teaching exercise tests students' ability to explain why RT improves reading comprehension in terms of use of newly learned ideas about learning and metacognition. Basically students try to explain the mental processes involved in questioning, clarifying, and summarizing, predicting lead to comprehension.

John Cavanaugh, Vice-Provost for Academic Programs and Planning at Delaware and principle investigator on the Pew Grant, sorts out the place of PBL among the "learnings" this way: "Imagine a family tree: Active Learning would be at the top. Cooperative/Collaborative would be a subset of that, and I see PBL as a subset of Cooperation/Collaborative based on cases. All forms of group work don't center on cases.

When it comes to creating problems, John Cavanaugh says: "One place to start is to take your exams and work backwards. Take those word problems and essay

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questions and make cases out of them." Loreta Ulmer, who teaches psychology at Delaware Technical and Community College, says it's hard work revamping a course into problems, "but after you've done it, the whole course becomes so exciting, you'd never go back."

Parkay and Stanford(1998) cite direct instruction, mastery learning, and computer-assisted instruction as methods based on learning new behavior; constructivist teaching and contingent teaching called scaffolding as methods based on child development; information processing; inquiry learning and discovery learning as methods based on the thinking process; and peer-mediated instruction with cooperative learning, group investigation, peer-tutoring, and cross-age tutoring as examples.

School tasks are to be as real and as purposeful as the tasks of the wider life beyond the school walls that they are to be of such nature as to ensure that the pupil is genuinely eager to carry them out n order to achieve a desirable and clearly realized aim.

To quote Dewey, "force nothing on the child..... give it free movement.....let it go from one interesting object to another.....we must wait for the desire of the child, for the consciousness of need" we can never tell someone to be interested and expect is automatic interest. It has long been established that participation is the quickest road to interest.

Further more; he asserts that education is life, growth, reconstruction of human experiences, and a social process. The main goal of the new methods is personality development through proper stimulation, directions, and guidance. Guiding and counseling of students go hand in hand with the regular methods and techniques of teaching. The new methods put more emphasis on thinking and less upon memorizing, more on understanding and less on merely accumulating facts, and more through genuine interest and less learning through coercion.

Horne had to say that, the new education is an educational philosophy that is improving classroom practices, making learning a more powerful process, giving children the sense of reality in the school, making schools into workshops, laboratories, and inspiring educational experimentation. The school should be the area of experimentation of the real world to the students. They should put the real world to experience and they will gain more from school except the old education.

Adams says the new teaching recognizes the right of the pupil to do things in his own way, within reasonable limits. New education does not want the child to acquire merely the result of the other people's thinking. It rather wants him to forge for himself the knowledge and skills necessary to deal effectively with the situation of real life. That is why the school curriculum's fundamental basis is centered on experiences which are typical of the community living.

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The role of the teacher is to be responsible for creating a climate for thinking so that students feel free to think, encouraged to think, and are challenged to think. The democratic principle of respect for others has been violated from different view points. Individuals do not always select the most direct, the least cost, or the most appropriate means to gain their ends. Theories of learning urge to distinguish between knowing and learning. Knowing is part of learning, that true learning occurs when the behavior of the individual has been changed. It is easy to distinguish between the two when one realizes that individuals do not always behave in light of their knowledge. Change is timely in teaching profession as teachers are at the brink of new century. Indeed in a new millennium, it is all together fitting that teachers take an introspective look at themselves and try to assess how to move for a better development of our youth.

Aquino (1989) provided a very useful description of the type of criteria to identify those who have the potential to become effective teachers. These are presage, process and products variables. Presage variables include teacher personality attributes and their knowledge. Process variables include teacher performance and pupil learning experience. Product variables include the effect of teaching. There are personality and knowledge variables that influence outcomes of interaction. These outcomes become a part of the presage factors on the next learning cycle.

Presage, process and product criteria are sets of variables that suggest different evidences that predict the teacher's effectiveness. The present study employs two of these variables namely; the process and the product variables.

Every one has a characteristic learning style or approach to learning which in turn determine how that person will utilize his various learning abilities to learn and to solve problems. The characteristic learning style a person develops depends upon his information-processing ability and his personality. His attitudinal openness to processing information is an important personality characteristic. This refers to how much a person lets himself be influenced by the internal sources of information and by external sources. His conceptual level of cognitive development is an important information-processing characteristic. This refers to concrete sources or utilizes abstract concepts. There are four characteristics of common learning styles;

Rigid learning style, the person has a tightly closed system for processing information. He does not let either the internal or external sources of information in a problem-solving situation but must have lots of concrete example in order o understand or learn.

In undisciplined learning style the person is strongly influenced by the internal sources of information but the person has not learnt to effectively utilize external sources of information. This person has developed a moderately symbolic level of

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conceptual ability which is mainly used to seek immediate gratification of his internal need desires, rather than responding to external influences.

Anxious learning style- the person is strongly influenced by external sources of information but tends to "close out" internal sources of information. This person has developed a moderately symbolic level of conceptual ability which he mainly uses to impress other people so as o get their admiration and approval rather than to act on his own convictions.

Creative learning style- the person is maximally opened to the influences of both internal and external sources of information. A person has a high level of conceptual development. He or she can symbolically process both internal and external sources of information in deciding which to let influence him/her or his/her behavior.

Dorado (2001) reminds teachers of their multiple roles as motivators, traditional teachers, facilitators, and collaborators. Implication to teaching view learning by interacting, learning by watching and listening, learning by thinking and understanding, and learning by doing. Authentic learning style tasks enables students to see the connections between classroom learning and the world beyond the classroom. Authentic assessment is an approach in assessing students' learning that requires them to solve problems or work in tasks that are given to them.

Mcnergrey and Hebert (1998) refer to authentic assessment as concerned less with students' recognition and recall of facts, and more with student's ability to analyze, apply, evaluate, and synthesize what they know in ways that address real-world concerns.

Eby (1997) state that teachers who are committed to creating authentic learning for their students do so by planning discussions that stimulate higher level thinking process, problem-solving skills, critical thinking, and creative thinking acknowledge the multiple intelligences of their students. One of these is problem-based learning approach.

Chandra Reedy, who teaches art history at the University of Delaware, uses PBL in just the same way, not because of limits on library and other resources, but because she's not quite ready to use PBL for everything. For her the problems move students to apply and integrate material and thus to actually learn it in ways they otherwise wouldn't. "I was teaching courses with lots of information and students weren't remembering three-fourths of it and I was discouraged," she says. Now, it's different: "When they apply it--working in a group, figuring it out for themselves--they remember it."

"The Lone Ranger is gone," says John Cavanaugh. That's the second reason why PBL's time has come. "The way the world works now, it's about working together." What students learn about collaboration, different approaches to a

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problem, cooperation and responsibility, makes their learning in PBL courses multisided, richer, and, in that way, deeper.

The list of reasons includes the fact that problem-based learning (PBL) ends up orienting students toward meaning-making over fact-collecting. They learn via contextualized problem sets and situations. Because of that, and all that goes with that, namely the dynamics of group work and independent investigation, they achieve higher levels of comprehension, develop more learning and knowledge-forming skills and more social skills as well. This approach to teaching brings prior knowledge into play more rapidly and ends up fostering learning that adapts to new situations and related domains as quickly and with the same joyous magic as a stone skipped over a body of water.

Von Glasefeld says, "knowledge is a result of an individual subject's constructive activity, not a commodity that some how resides outside the knower and can be conveyed or distilled by diligent perception or linguistic communication.

Ssenteza Kajubi asserts that o the role of educational institutions; they should set aims and goals that were realistic. Presently the success of the school is measured in terms of how many first grades its candidates have scored. This gives false impression in that school with candidates spread over the grades would be considered non-performers. Education should instill values of working cooperatively with ones community. Education should enable learners earn a living through their own efforts. What do we teach to enable learners to earn a

living? Aren't degree holders jobless because they cannot utilize the knowledge acquired they lacked entrepreneurship and skills.

According to Dewey, learning is driven by the learner's sense of disequilibrium (cognitive dissonance) when confronted with new experiences and ideas rather than by reinforcement. If real growth was to occur, the learner must want to learn and be active in learning process. He believed that traditional reinforcement of information only led to superficial learning. The educator is responsible for creating learning events in which the learner is presented with problematic situations which he/she would motivate to solve by learning.

James Rhem of the university of Delaware stated that by having greater ownership of the teaching learning process, students learn how to learn and are much better able to deal with unfamiliar. The context of learning is more realistic and there is pretty of anecdotal evidence indicating that the graduates from PBL courses are better prepared for work force than those from traditional programmes.

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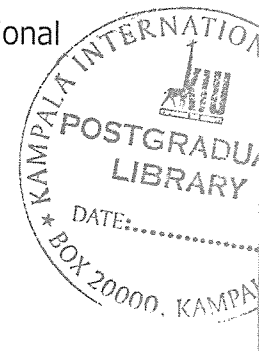
Figure 3: A comparison of problem based learning with other instructional approaches



Lecture	problem-focused Discussion	case method	anchored problem-solving	authentic situation
Teacher-lead Discussion	role playing	discovery method	problem-based learning	

Source: Jennilyn C. Convera 2004

The Illinois Mathematics and Science Academy (1996) compared prescriptive and experiential curriculums. Using these as endpoints on a continuum, one would place PBL close to the latter. Again, depending on one's interpretation and usage of PBL, this can vary.

Table 3: Prescriptive Curriculum and Experiential Curriculum

Prescriptive curriculum	⟷	Experimental curriculum
Teacher-centered		Student-centered
Linear and rational		Coherent and relevant
Part to whole organization		Whole to part organization
Teaching as transmitting		Teaching as facilitating
Learning as receiving		Learning as constructing
Structured environment		Flexible environment

Source:

www.usask.ca/education/coursework1802paper/mergel/brenda.htm

Margaret Sutherland (1999) in the Theory of Education asserts that in the discovery method, the learner is given the opportunity to experiment with materials, to discover what happens in the response in the chosen manipulations. Thus learning of principles become something not learned from a

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text book or by watching other people's experiments but something the learner has discovered by initiating activities, observing and interpreting their results. Such work is likely to be more clearly remembered than passive learning or learning by simply. It may lead to further discovery and experiment for the individual is said to discover in this way not only the properties of the materials worked with but the possibility of thinking things out, arriving at independent results and conclusions. The development of creative behavior is expected to be helped by such foundations of experience, observation, personal involvement.

According to Yoakan and sumposon, problem occurs in a situation in which a felt difficulty to act is realized. It is difficulty that is clearly present and recognized by the thinker. It may be purely mental difficulty or it may be physical and involve the manipulation of data. The distinguishing thing about a problem however, is that it impresses the individual who meets it as needing a solution.

In the teaching of economics PBL is based upon the process of find out the result by attacking the problem in a number of definite steps. In this method the student is involved in the finding out the answer to a given problem and thus actually is a discovery method. PBL method is quite useful for teaching of economics. Economics is nothing but a sum total of various economic problems. This method can be easily used to teach consumption, exchange, production, distribution, finance and others. Economics deals with the study of various activities of man directed towards acquisition of wealth and earning of money.

According to Marshal, economics is the study of man's action in the ordinary business of life, it inquires how he gets his income and how he uses it ..... thus, it is on one side, study of wealth; and on the other hand more important side, part of the study of man. Adam smith, who is considered the father of economics, considers economics as the science of wealth. According to him economics is concerned with the inquiry into the nature and causes of wealth.

According to Pigou, economics is the study of economic welfare; economic welfare being described as that part of welfare which can be brought directly or indirectly into relations with the meaning rod of money. In the study of economics we are concerned with those human activities which are deeply related with money and wealth. Here we study about earning and spending money. For every successful human activity money is an essential ingredient and that is why the whole world is after money. We find a cut-throat competition to acquire money. In economics we deal with this part of our life and try to find out the ways and means of leading a successful life. Economics has both practical and theoretical aspects. Theoretically it tries to analyze different theories and principles and deal with the basis of various functions of man. An effort is made to analyze various circumstances and causes that bring about various functions. For production we need land, capital, Labour, organization, enterprise e.t.c.

Under the practical aspect economics deals with the running and functioning of various industries, trade e.t.c. we find the practical aspect of economics is more

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important as compared to its theoretical aspect. For an economist, it is easy to find out and imagine the direction towards which the whole of economic structure is moving. He can also find out various trends in fields of production, consumption, and marketing. By studying economics one becomes more practical. Practical knowledge is quiet essential for any one who wishes to acquire a thorough knowledge of economics. Knowledge of economic problems comes handy for solving various complex economic problems of the country. To illustrate the fact that all the aspects of economics have some practical values and importance. We take the following example; considering the prevalent state of poverty in most of Ugandan villages, foreign economists have drawn certain conclusions and such conclusions have been repeated by others without caring to find out the truth.

Prof. Piguo enlists the aims and objectives of teaching of economics, in his book, "the economics of welfare" as; Acquisition of knowledge, Solution of practical problems of life.

Prof. C.E.M.Joad in his book entitled, "about education" asserts that the main aims and objectives of teaching economics are; to equip the pupils to earn his/her live hood, to equip the pupil so that he can play his part as a citizen of democracy, to enable the pupil develop all his latent powers and facilities and thus enjoy good life.

All these researches on applying new teaching strategies have made dramatic change when redefined educational trends manifested improved implementation schemes. Based on the theory and related studies gathered the researcher anchored her study on the constructivist theory of learning.

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CHAPTER 4 3

RESEARCH METHODOLOGY

Introduction

This chapter dealt with research design, research environment, research participants, research instruments, data collection procedures, random assignment of sections/groups, administration of the pretest, problems inquiry, learning issues and limitation of the study.

Research Design

The research design for the study was experimental through the use of a pretest and posttest. Systematic list sampling of the students was done to determine the effectiveness of problem based learning approach on the knowledge acquired in economics of the first year students of Kampala international university. One group of the students became the experimental group and the others become the traditional group for the study.

Population and Sample Size

The population size of the study was 56 respondents. These were the students that were offering economics in the second semester of year one. The sample size was 100% of the population. This means that all the 56 respondents were utilized in the study.

This was because the population was rather small that is why the researcher decided to utilize the whole population.

Systematic list sampling of the groups

Systematic list sampling was utilized on the students in order to get the two sections of the control group and the experimental group. The class was a hetero geneous type, a mixture of above average, average, and below average students. The class also was inclusive of students who were retaking the paper were the subject of research was centered and thus had prior knowledge. The researcher utilized one section with almost the same number of students for the problem based learning and one section the traditional method (lecture method)

Research Environment/scope of the study:

The study was conducted in the faculty of education, department of economics, at Kampala International University and since the problem based learning could not be carried out in the lecture room, the students in the experimental group went out in the field, in the library and other resource centers as proposed fields.

Research Respondents

The first year students of economics in the faculty of education, department of economics were the research participants of the study. One section was exposed

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to problem based learning approach with approximately 26 students, class schedule will be 2-3 hours, Tuesday-Thursday, the other section was introduced to the traditional way (lecture method) and also had 30 students.

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Research instrument

A prepare an examination which was based on the module that was used to determine the knowledge acquired with a total of 50 items (test questions). A pretest examination was used based on the criteria to determine the knowledge attained. A record sheet was also used to reflect the scores of the students in the pretest and posttest for data analysis and documentation.

Data collection procedures

A letter was obtained from the school of post graduate studies, the Dean of the faculty of education, Kampala international university requesting to conduct the study in the second semester of the academic year 2005-2006, utilizing the first year students as my research respondents. This was done as a matter of ethical concern.

Administration of the pretest

The two groups were given a prepared examination before introducing the new subject matter through the PBL method and the traditional method of teaching. The examination contained 18 items which covered the knowledge of the subject

matter and totaled to 100%. The examination was given one hour and thirty minutes to answer the test questions. The class was arranged one seat apart. The results of which were then tailed and computed.

Problem inquiry

At this stage, the learners were required to use prior knowledge to come up with possible solutions to the problem. The class was given two hours group discussion that allowed the learners to free collaborative exchange of knowledge with the group members. After this, the experimental group was given a month's break from the classroom for research work and the conventional group remained in the class in preparation for reporting and the posttest.

Learning issues

During the study break, the learners selected, organized and categorized the many ideas they come across. They worked independently as they engaged in the finding of information on the learning issue delegated to them. They were engaged in searching for various sources including interviewing people with experience in the given problem. Learners came together again and tabulated the information they had gathered through their search with open sharing of new information they had reached at from their findings and then the final posttest was administered to them.

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Statistical treatment of data

To determine the mean pretest Formula:

$$\bar{x} = \frac{\sum x}{n}$$

Where: $\bar{x}$ = mean score

$\sum x$ = summation of score

n = total number of students

To determine if there was a significant mean posttest gain within each group, the paired or related t-test was used. Scores were tailed and the difference of the pretest and post test was computed using the formula:

$$t = \frac{\bar{d} - do}{Sd / \sqrt{n}}$$

Where; $\bar{d}$ =mean difference

$do = \mu 1 - \mu 2$ is assumed difference between population mean.

Sd = standard deviation of the differences

n = total number of students per group

To evaluate differences between effects, or the difference between the amounts learned under two methods of teaching the t-test for independent samples was used;

$$t = \frac{\left(\overline{x1 - x2}\right)}{Sp\sqrt{(1/n1) + (1/n2)}}$$

Where Sp is the pooled estimate of the standard deviation

$$Sp = \frac{(n1-1)\,S1 + (n2-1)}{N1 + N2 - 2}$$

Where $df = n1 + n2 - 2$

Where $\overline{x1}$ - $\overline{x2}$ = the obtained difference between means

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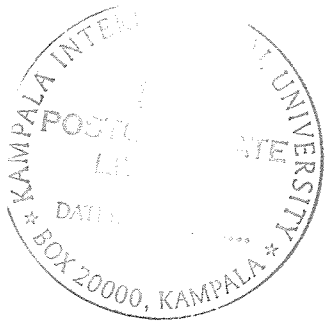

$S1$ = standard deviation of the experimental group

$S2$ = standard deviation of the control group

$n1$ = number of students in the experimental group

$n2$ = number of students in the control group

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Limitations of the study

The researcher was faced with a variety of problems during the study;

1. The population of the study was rather too small for the study to produce valid results because the researcher was delimited to only the first year, second semester students who were few particularly those offering economics who were 51 respondents.
2. There was also a problem of tuition on the side of the respondents since the gates were locked for those respondents who had not yet paid the full amount of tuition and hence the study might have been affected in that way.
3. Some of the respondents that were inclusive in the study wee retaking the paper so they already had knowledge of the subject matter therefore; it affected the study in one way or the other. For example, such students did not want go along with others.
4. the respondents' reaction to the idea of PBL were with shock, denial, anger, resistance especially those of the experimental group who thought they were going to miss so much of the content that taught in class with the traditional group.

CHAPTER 5 4

DATA ANALYSIS AND INTERPRETATION

Introduction

This chapter presents the empirical analysis and interpretation of the data obtained from the field in three tables where the T-test to test the significant differences between the pre-test and post-test as given by the objectives.

The mean scores in the pretest /posttest for knowledge.

Table 4 shows the mean scores in the pretest and posttest results based on knowledge. The experimental group has a bigger mean of 51.23 compared to the control group with 50.32. In the posttest mean result, the experimental group increased to 73.84 against 71.28 of the control group. Thus, the result shows that the experimental group has better scores than the control group. The mean difference was 2.56. This means that the experimental group excelled in the pretest, thus the students that belong to the experimental group are much better in their academic performance. After introducing the subject matter through PBL, the experimental group still had a relative increase in scores in the posttest, which evidenced that problem based learning is an effective teaching method for economics.

The variances between the mean scores of the experimental group and the control group can be explained that the students from the experimental group

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were faced with a wider variety of information and ideas from their group members compared to the traditional group that only focused on the lecturer's explanations and notes.

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Since there was random assignment of the section/ group, the researcher did not look at their academic performance. Therefore the mean scores of both groups can not be the same in both groups.

Table 4: Mean score in the pretest/posttest results based on the knowledge

Group	Pretest mean(X1)	Posttest mean(X2)
Experimental(PBL)	51.23	73.84
Control(conventional)	50.32	71.28

Source: Primary Data, 2006

Significant posttest gain in the experimental and control groups in terms of knowledge.

Table 4 shows the significant mean posttest gain in the scores of the students in the experimental and control group. Based on the knowledge the experimental group has a computed t-value of -1.036based on knowledge with critical t-value of 2.059.in the control group, the computed t-value based on knowledge.

Table 5: The mean posttest gain in the scores of the students in the experimental and control groups in terms of knowledge.

Group	Mean posttest gain	Computed t-value	Critical t-value	Decision on Ho	Interpretation
Experimental group	23.61	-1.036	2.059	Accepted Ho	Not significant
Control (conversional group)	20.96				

Source: Primary Data, 2006

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The significant difference in the mean posttest gain between the experimental and control group in terms of knowledge.

As reflected in table 5, there was no significant difference between the mean posttest gain of the experimental and the control groups based on knowledge where the computed t-value is -1.07 is lower than the critical t-value of 2.059, thus the null hypothesis is accepted. There is no significant difference in the mean posttest gain between the experimental and control group based on knowledge where the computed t-value is -1.07 still higher the critical t-value of 2.059, thus null hypothesis is rejected.

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Table 6: Significant of the difference between mean posttest gains of the experimental and control groups

	Mean difference	Computed t-value	Critical t-value	Decision on Ho	Interpretation
Knowledge	4.76	-1.07	2.059	Accepted	Not significant

Source: Primary Data 2006

Hence the mean difference between the posttest gain of the academic performance of the students of Economics between the experimental and control groups is not significant, therefore, Problem-Based learning approach is an effective method of teaching economics. There by developing the economics students to a real situation.

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CHAPTER 6

SUMMARY, FINDINGS, RECOMMENDATIONS, CONCLUSION AND SUGGESTIONS FOR FURTHER RESEARCH

Introduction

This illustrates the summary of the study, the findings of the study, Summary of the study, recommendations given by the researcher according to the findings from the study, the general conclusion and lastly, areas for future research/prospective researchers.

Summary

The study determined the effectiveness of problem based learning approach on the knowledge of the economics students. Specifically, this study determined the mean score in the pretest and posttest for knowledge in economics in the experimental group and control group.

This also determined the significant mean posttest gain of the students between the groups in terms of knowledge. Employed was the quasi experimental method.

Gathering data was done through the pretest and posttest, where the learners where exposed to the following procedures:

Administration of the Pre-Test

A pre-test was administered to the students before introducing the subject matter to both the control and experimental groups with the aim major of evaluating the prior knowledge of the students. This contained 50 items (questions) presenting the whole subject matter.

Problem Inquiry

After the pretest, students were allowed free collaboration and exchange of ideas on the subject matter and there after the experimental group was given a study break for one month.

Learning Issues

The experimental group was required to use both the prior and researched information to come up with the possible solution to the problem. Group discussions were held to allow the students to integrate the different information collected from each other after the

Administration of the Post-Test

The post-test examination was administered to the students after them acquiring more knowledge on the subject matter for both the experimental and control groups. This aimed at measuring the significant difference of knowledge between the experimental and control group.

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The paired t-test was used to determine the significant mean posttest gain between the experimental and control groups and the independent t-test for the significant difference in the mean posttest gain for knowledge.

Findings

The following were the findings of the study:

1. The mean scores of the experimental group (PBL) in the pretest and posttest examination for the knowledge of economics was 51.23 and 73.84 respectively, which was higher compared to the control group which was 50.32 and 71.28 respectively. This shows that the students in the experimental group performed better than those in the control group which. This is in line with the theory that the study was based on where Dewey said that education depended on action. That knowledge and ideas emerged only from a situation in which learners had to draw them out of experiences that had meaning and importance to them.
2. The mean posttest gain of the students in the experimental and control groups significantly did not differ in terms of knowledge. This diverges away from James & Baldwin (1997) who asserted that PBL alters traditional teaching and learning patterns. That the process of presenting a topic piece by piece until students assimilate the various pieces of knowledge and hopefully apply

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them to personal and professional problems has not been shown to be effective. This is because the findings indicate that the mean scores were almost the same for the different groups in the study.

3. There was no significant difference in the mean posttest gain of the students between the experimental and control groups in terms of knowledge of economics.

   This means that the difference of the scores was too small between the traditional group and the control groups.

Recommendations

Based on the findings, it is recommended that the problem based learning approach should be used as a method of teaching in subjects like, mathematics, physics, economics and other related subjects, that contain the practical accept of life that will develop social learning of the students and aid them in their search for knowledge in the practice of their chosen areas.

Both the Problem Based Learning approach and the traditional approach should be used interchangeably depending on the content of the topics or papers of economics. This tally with the view of Ulmer in her modern form PBL in which she combined the mini-lectures with in class and small group work on a problem set later.

Teachers/facilitators of economics should be able to get themselves used to the problem based learning method because it involves the students into the teaching-learning activity. This helps students to memorize and also put what they have learnt into practice and it is very hard for the students to forget what they have done for their selves. Adams agrees with this when he asserts that new teaching recognizes the right of pupils to do things their own way, within reasonable limits. He defines new education where the child does not necessarily acquire merely the result of the other people's thinking.

Group learning should also be emphasized because students learn better with different ideas from their colleagues compared to when they are taught by their teachers in class. Discussions should be involved in the groups because it develops different skills to the students because this is all involved in the problem based learning. The researcher agrees with Samford (1998) when he said that students assume increasing responsibility for their learning, giving them more motivation and more feelings of accomplishment, setting the pattern for them to become successful life-long learners.

The faculty of education that offers economics as subject should be able to cope up with PBL method of teaching since the students being trained are teachers to be who are going to be teaching the same subject. Therefore, if the such

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students are exposed to such a method of teaching, then their students too will find it learn what they have already perceived as a hard subject.

The curriculum should also be revised and such methods of teaching should be incorporated into it as it allows the students to get involved into teaching-learning process which the researcher takes to be the best method of teaching and learning.

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Conclusion

Based on the findings of the study, it is concluded that problem based learning approach did not significantly increase the students posttest scores in terms of knowledge. This was based on the scores of the students in both the traditional and experimental between the pretest and the posttest which were used as the research instrument. Basing on that the students in the control performed better than the students in the experimental group both in the pretest and the posttest. Its effect is almost the same as the traditional (conversional) method of teaching because based on the finding; there was no significant difference the results from both tests. Thus, PBL approach of teaching is as well effective as the traditional approach of teaching economics. This is contrary on the theory on which the study was based that student understand better if they construct the work themselves or when they get involved in finding out ideas by themselves. However, the researcher found out that there are other factors that affect the performance of students in economics at Kampala International University like perception that the subject is hard.

Suggestions for further research

Furthermore, the researcher recommends to the next researcher enthusiast to investigate on the following:

1. Effectiveness of project-Based learning method in economics or discovery approach
2. Effectiveness of Inquiry-Based Learning method
3. Investigate further the effectiveness of problem based learning to other subjects.
4. Assessment on the implementation of problem based learning approach.

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APPENDIX A:

Transmittal Letter for the Dean

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FACULTY OF EDUCATION
Office of the Dean

Date: 05th October, 2006

Associate Director
School of Post-Graduate Studies
Kampala International University

RE: MS. KYOLABA SARAH MA – ECON – PT – 2004 – 004

This is to confirm that the above named was accepted to conduct her research on "The Effectiveness of Problems Based Learning Approach on the Knowledge of the Economics Students of Kampala International University" at our Faculty.

Ms. Kyolaba spent four weeks carrying out this exercise.

We hope she benefited from the study.

Regards,

Okirima E. Michael
DEAN, Faculty of Education

APPENDIX B

Pre/Posttest questions that were used by the researcher;

Kampala international university

Faculty of education

Pretest/posttest on unemployment

Course : Economics

Paper : Macro Economics

Code : EE12023

Date : 28.05.06

Time : 1hr30mins

Instructions: All questions are compulsory

---

1. The following is not a cause of unemployment
   a) voluntary unemployment
   b) seasonal unemployment
   c) residual unemployment
   d) all of the above

2. According to Keynes, unemployment occurs as a result of
   a) low supply

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b) low demand

c) fewer jobs

d) non of the above

3. ..... Is the kind of unemployment where by individuals become employed when the job is available and become unemployed when the job is completed.

a) Structural unemployment

b) Hidden unemployment

c) Casual unemployment

d) Seasonal unemployment

4. The following is not a cause of open urban unemployment

a. probability of getting a better job

b. high rates of population growth

c. discrimination

d. non of the above

2. ..... Is not a limitation of Keynesian theory of unemployment in LDCs.

a. The theory is based on the industrial sector

b. It is mainly concerned with demand efficiency

c. Investment climate expands the level employment

d. All the above

Section B

3. Give four positive effects of rural urban migration

_____

_____

_____

_____

4. List four measures of rural urban migration

_____

_____

_____

_____

5. Define the following terms
   a. unemployment
   b. underemployment
   c. rural urban migration
   d. disguised unemployment

6. what is unemployment according to Keynes

_____

_____

_____

10. Give three causes of unemployment

_____

_____

_____

11. Give four solutions to open urban unemployment

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12. give three relevancies and limitations of Keynesian theory of unemployment to the developing countries

Relevancies

_____

_____

_____

Limitations

_____

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_____

13. Mention five measures to unemployment problems in our country

_____

_____

_____

_____

_____

14. List four effects of unemployment in our country

_____

_____

_____

_____

15. Outline four measures to rural urban migration

_____

_____

_____

_____

16. Give four types of unemployment

_____

_____

_____

17. List three ways in which aggregate demand can be increased

_____

_____

_____

18. Outline three characteristics of unemployment in our country

_____

_____

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APPENDIX C

DATA PRESENTATION

Presentation of the result from the pretest on knowledge of the students in the traditional and experimental group;

Table 7: Pretest Scores from the Experimental and Control groups

Number of participants	Traditional(control group)	Experimental (PBL group)
1	28	52
2	64	44
3	48	46
4	60	23
5	58	62
6	86	58
7	60	44
8	68	34
9	36	60
10	80	38
11	70	78
12	40	52
13	22	60
14	58	48

15	62	70
16	50	84
17	42	28
18	45	49
19	34	56
20	28	60
21	23	40
22	60	32
23	59	61
24	49	70
25	28	53
26		48

Source: Research Privacy Data, 2006.

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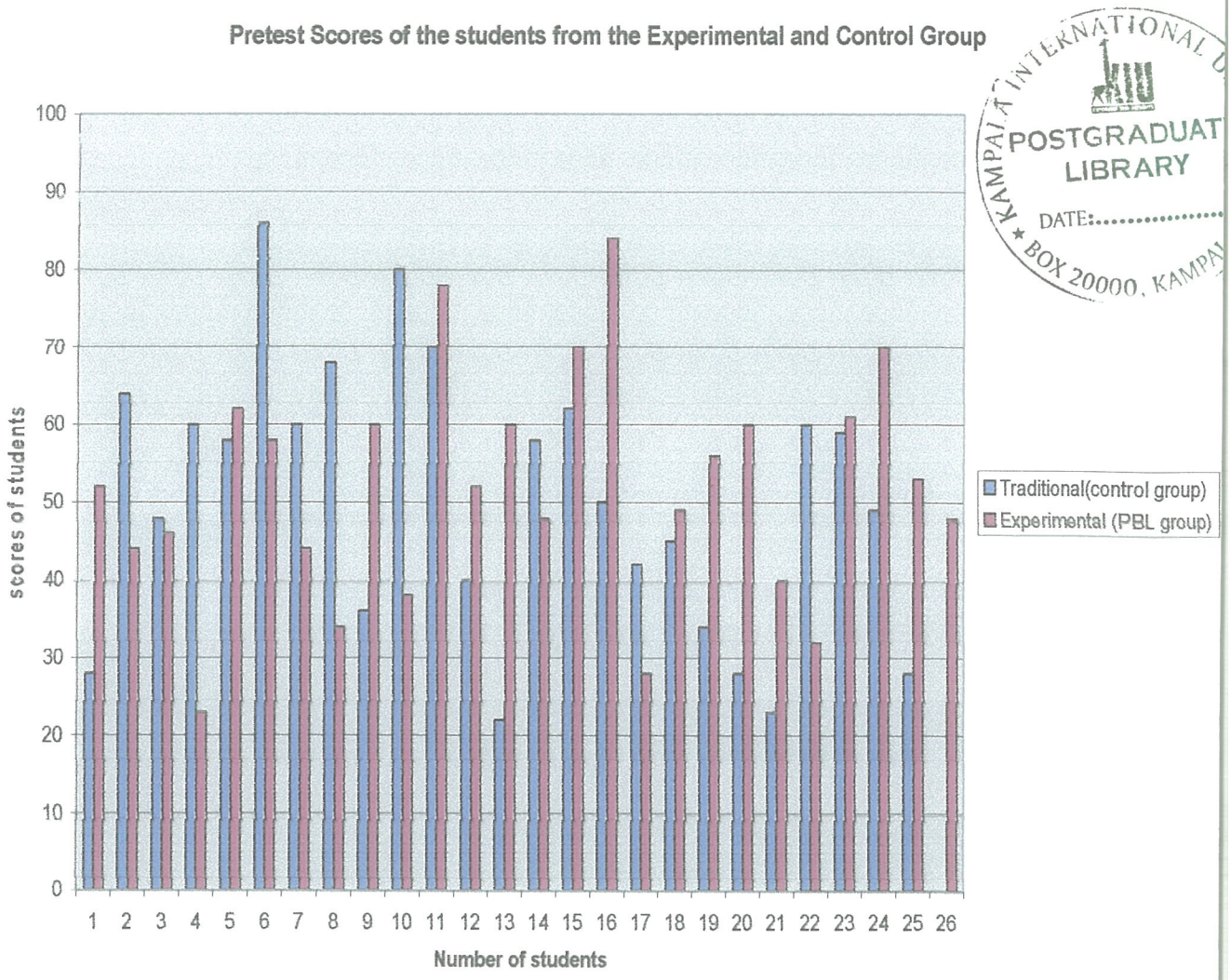
Figure 5: pretest scores in the experimental and control groups



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The graph indicates that although there was a difference between the traditional or control group and the Experimental group, it was not big. This means that the scores were not significantly different for groups I the pretest for the students.

The table represents the results of students gained in the experimental group and the traditional or the control group. This is before introducing the subject matter to the students intended to measure prior knowledge of the students

about the subject matter. Therefore, the results gained show the prior knowledge of the student before they are either introduced to the traditional method of teaching or the problem based learning method of teaching.

Table 8: Posttest Scores from the Experimental and Control groups

Number of participants	Traditional (control group)	Experimental (PBL group)
1	62	72
2	64	64
3	70	65
4	82	68
5	82	76
6	96	70
7	80	72
8	70	58
9	78	86
10	82	74
11	78	84
12	82	61
13	78	92
14	76	62
15	46	81

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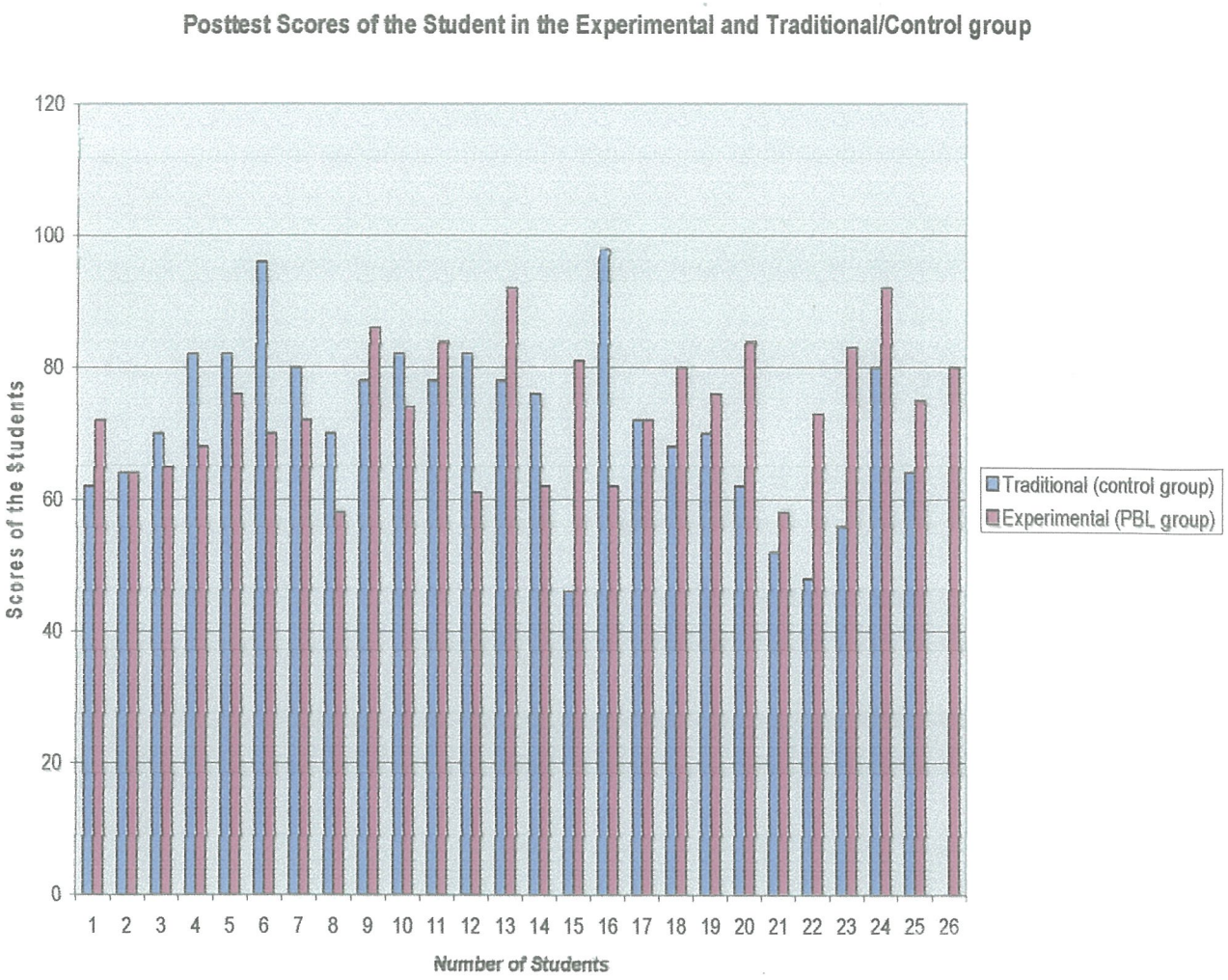
16	98	62
17	72	72
18	68	80
19	70	76
20	62	84
21	52	58
22	48	73
23	56	83
24	80	92
25	64	75
26		80

Source: Research Privacy Data, 2006

Figure 6: Posttest scores in the Experimental and Control groups



The graph indicates that although there was a difference between the posttest of the students in the Experimental and control groups but it was not significant which means the difference was to small as it is also indicated in the findings.

The posttest scores of the Traditional were higher than the pretest scores of the Experimental group despite the fact that the difference was very small.

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This table represents the results of the students in the posttest from the experimental group and the traditional or control group. This test was presented to the students after introducing them to the subject matter. The traditional group remained in class for the traditional method of teaching i.e. in the lecture room while the experimental (PBL) go out to the field. This is intended to show the effectiveness of the two methods of teaching and which one is referable to the other.

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Table 9: Posttest score, Pretest score and Posttest gain of the traditional group

Number of students	Posttest score	Pretest score	Mean gain
1	72	52	20
2	64	44	20
3	65	46	19
5	76	62	14
6	70	58	12
7	72	44	28
8	58	34	24
9	86	60	26
10	74	38	36
11	84	78	6
12	61	52	9

13	92	60	32
14	62	48	14
15	81	70	11
16	62	84	22
17	72	28	44
18	80	49	31
19	76	56	20
20	84	60	24
21	58	40	18
22	73	32	41
23	83	61	22
24	92	70	22
25	75	53	22
26	80	48	32

Source: Research Privacy Data, 2006.

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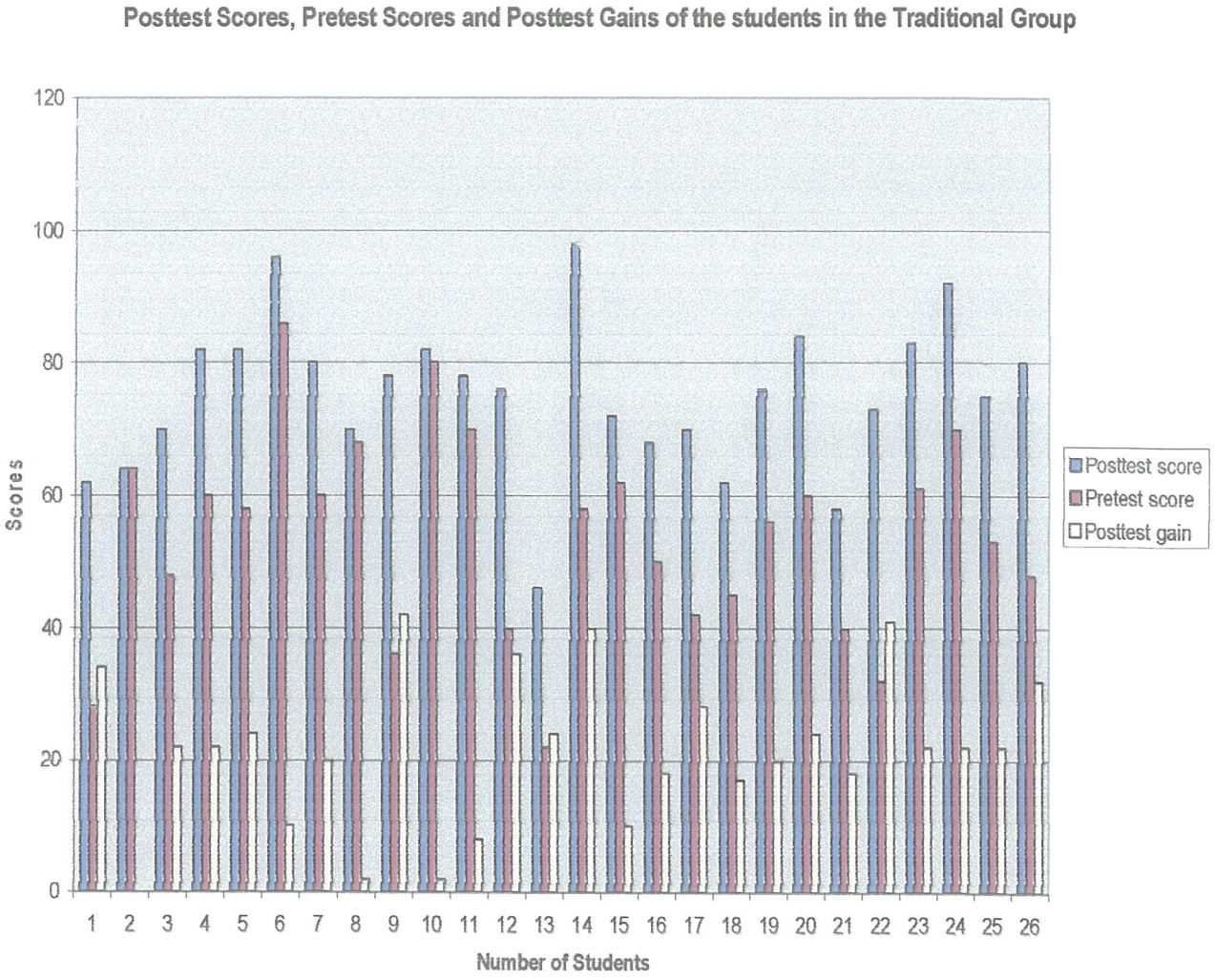
Figure 7: Posttest score, Pretest score, and the Posttest scores in the Traditional group.



The graph shows that where the posttest scores where very high than the pretest score, the posttest gains were higher compared to where posttest score

were almost equal to the pretest score. This means that the higher the posttest score than the pretest score, the higher the posttest gains of the students in the traditional. That is before introducing the subject matter to the students.

The posttest scores where higher than the pretest score implying that the students performed better after introducing to them the subject matter than before introducing the subject matter to them.

The table 6 above represents data the posttest score of the students in the traditional group where the posttest score is the results gained by the students in the posttest.

Pretest scores are the results gained by the students in the traditional group from the pretest.

The difference between the posttest score and the pretest score is the posttest gain and it is got by subtracting the pretest score from the posttest score.

Table 10: Posttest score, Pretest score, and Posttest gain of the Experimental group

Number of students	Posttest score	Pretest score	Posttest gain
1	62	28	34
2	64	64	0

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3	70	48	22
4	82	60	22
5	82	58	24
6	96	86	10
7	80	60	20
8	70	68	2
9	78	36	42
10	82	80	2
11	78	70	8
12	76	40	36
13	46	22	24
14	98	58	40
15	72	62	10
16	68	50	18
17	70	42	28
18	62	45	17
19	76	56	20
20	84	60	24
21	58	40	18
22	73	32	41
23	83	61	22
24	92	70	22

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25	75	53	22
26	80	48	32

Source: Research Privacy Data, 2006

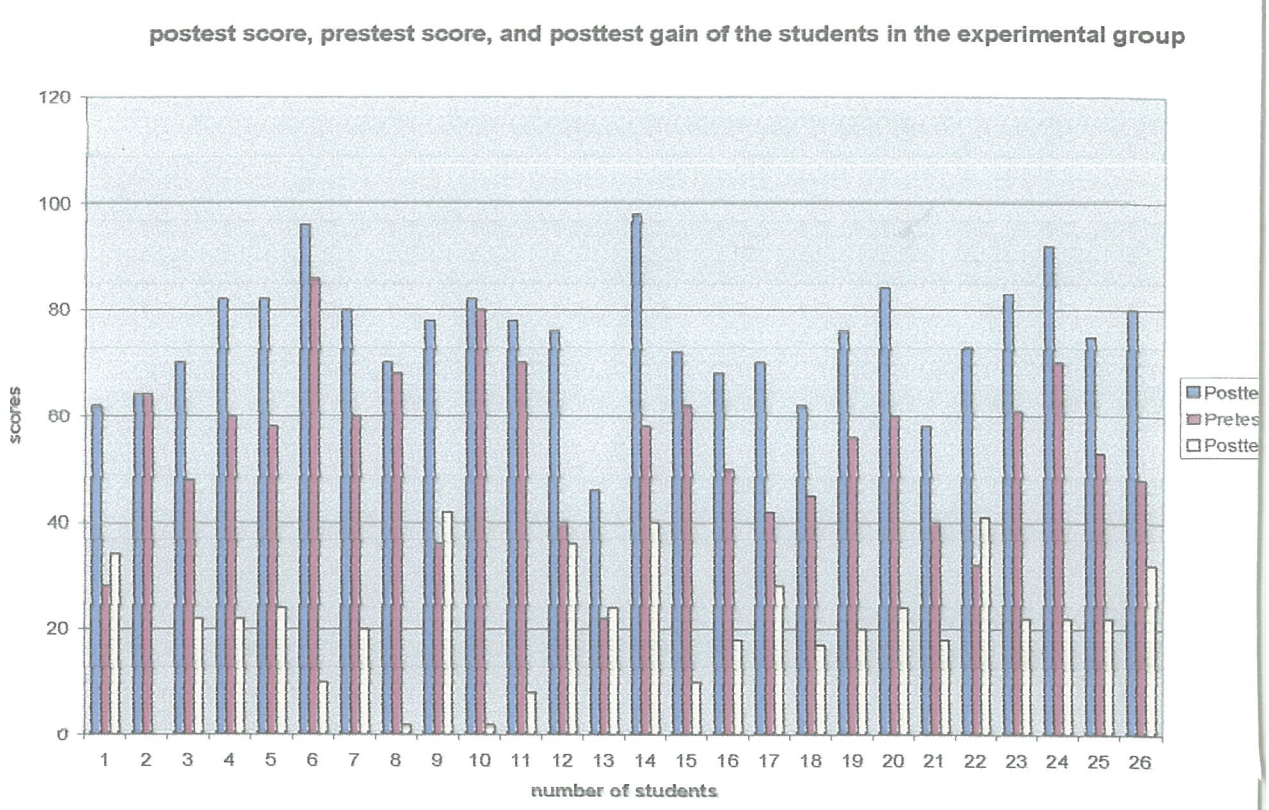

Figure 8: posttest scores, Pretest score, and posttest gains in the Experimental group.

The graph above indicates that the post test scores were higher than the pretest scores which indicates that students performed more better after introducing the subject matter to them than the pretest scores before introducing the subject matter to the students in the Experimental group.

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According to the graph, the post test gains depended on the scores of the students. The higher the scores, the higher the posttest gains of the students. Therefore, the students who had a higher posttest score had the higher posttest gains in the Experimental group.

In table 10 above represents the posttest score, pretest score and the posttest gain in the experimental group.

The posttest scores are the results gained by the students in the posttest. This is test that was given to the students after being introduced to the subject matter and for this case, these student were exposed to the field information.

The pretest scores are the results gained by students after being exposed to the subject matter. For this case, the students were taught by the lecturer using the traditional method of teaching i.e. lecturing.

The posttest gain is the difference between the posttest score and the pretest score. It is got by subtracting the pretest score from the posttest score results of the respondents.