

Using Focus Group Techniques to Explore the Possibility of using Electronic Communication Tools for Problem Based Learning at Arabian Gulf University, Kingdom of Bahrain

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ABSTRACT

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KEYWORDS

Online Problem Based Learning OPBL, Focus group techniques, E-learning, Virtual Learning Environment VLE, and Communication Tools.

Problem Based Learning PBL is an educational approach that requires the students' interaction with each other to clarify their educational needs, share information for solving the problem under investigation and make use of various educational resources available online such as electronic books, scientific research papers, and Internet resources, and then access the collected information to reach a solution to this problem of education. This study aimed to determine the possibility of using electronic communication tools for the [Problem Based Learning] from resource persons' point of views at College of Medicine & Medical Science; Arabian Gulf University. The study implemented a qualitative research method based on focus group techniques on a sample of 24 resource persons who work for the Arabian Gulf University. The most essential results that came out of the qualitative analysis were that there were many difficulties facing, the use of communication tools in the virtual learning environment WebCT. The time restrictions of the student, lack of using WebCT tools, lack of support for students to use the same tools by resource persons and tutors. The resource persons focused on the point that the students do not require skills to use WebCT, and there is a need to make the environment of using WebCT in line with the external environments which students refer to during their learning. Also, they focused on the importance of participation of students with college management to design the WebCT from the beginning and to instruct the students toward using the same environment, as the same shall be implemented on premedical and not after the start of using PBL. Recommendations included; the need to train the tutors and resource persons on using WebCT and help them master the skills needed for using WebCT in their teaching and interacting with their students.

استخدام تقنيات مجموعة التركيز (Focus Group Techniques) لاستكشاف إمكانية استخدام أدوات التواصل الإلكتروني للتعليم المبني على مشكلة (OPBL) بجامعة الخليج العربي، مملكة البحرين

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المستخلص

يستخدم التعلم المبني على مشكلة PBL للتعبير عن تلك الطريقة التعليمية التي تتطلب تفاعل الطلاب مع بعضهم البعض لتحديد احتياجاتهم التعليمية وتبادل المعلومات لغرض حل المشكلة قيد البحث والتقصي، والاستفادة من مختلف الموارد والمصادر التعليمية المتاحة على الإنترنت مثل الكتب الإلكترونية والبحوث العلمية وموارد الإنترنت الأخرى، ومن ثم توظيف بيانات المعلومات التي قد تم جمعها من أجل التوصل لحل تلك المشكلة التعليمية. إستهدفت الدراسة الحالية تحديد إمكانية استخدام أدوات التواصل الإلكتروني بيئة WebCT في التعلم المبني على مشكلة PBL من وجهة نظر مختصي المصادر في كلية الطب والعلوم الطبية بجامعة الخليج العربي. وظلت الدراسة منهج البحث النوعي استناداً على تقنيات مجموعة التركيز Focus Group Techniques على عينة قوامها 24 شخصاً من مختصي المصادر العاملين بجامعة الخليج العربي. تمثلت نتائج التحليل النوعي الأكثر أهمية في أن هناك العديد من الصعوبات التي تواجه استخدام أدوات التواصل الإلكترونية بيئة التعلم الافتراضية WebCT، منها قلة القيود المتعلقة بوقت الطالب، وعدم تأمين الدعم والمساندة للطلاب في استخدام أدوات WebCT من قبل مختصي المصادر والمدرسين. هذا وقد أوضح الاختصاصيون وخبراء المصادر أن الطلاب لا يتقنهم المهارات الخاصة باستخدام أدوات WebCT، بل هناك حاجة لجعل مصادر بيئة WebCT المقترحة متماشية ومتوائمة مع ما يتم عرضه ببيئات التعلم الإلكترونية الأخرى التي اعتاد الطلاب على توظيفها أثناء تعلمهم. أيضاً كان هناك تشديداً على ضرورة وأهمية إشراك الطلاب وإدارة الكلية والأخذ برأيهم منذ البداية عند تصميم بيئة التعلم WebCT مع ضرورة تدريب الطلاب على استخدام نفس البيئة منذ بداية المرحلة قبل الطبية في ضوء المنهج المتبع في كلية الطب والعلوم الطبية وليس بعد بدء استخدام التعلم المبني على مشكلة PBL قبل المرحلة ما قبل الطبية. هذا وقد شملت التوصيات الحاجة إلى تدريب المدرسين والاختصاصيين ومساعدتهم على إتقان المهارات اللازمة لاستخدام WebCT في تدريسهم والتفاعل مع الطلاب.

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الكلمات الدالة

التعلم القائم على مشكلة عبر الإنترنت
PBL، تقنيات مجموعة التركيز، التعلم
الإلكتروني، بيئة التعلم الافتراضية
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Introduction

1. Arabian Gulf University AGU

Arabian Gulf University AGU is a Gulf Cooperation Council GCC regional institution founded on the 4th. of April 1979, stationed in Manama, Kingdom of Bahrain. Its educational programs started with the College of Medicine and Medical Sciences CMMS in 1982 which is the regional medical school planned to adopt the innovative Problem Based Learning PBL method. This followed by establishing two colleges of higher studies that have been combined into the College of Graduate Studies CGS offering post graduate programs of Technological Studies in Desert Arid Zone Sciences, Biotechnology, Technology Management, Environmental Management, and Hydrology (Ground- water Management), as well as Educational Programs in Intellectual Disability and Autistic Disorder, Learning Disabilities, Gifted Education and Distance Teaching and Training. Moreover, the AGU accommodates French Arabian School of Management and Finance offering Executive Masters in Hospital and Healthcare Governance, Business and Finance Management, and Energy Management, as well as WHO Collaborating Centre for Medical Education Development. The Arab Regional Centre of UN Water Virtual Learning offering distance-based post graduate diploma in Integrated Water Resources Management as an additional PG Programs.

The present study took place at the Arabian Gulf University, Distance Teaching and Training Program AGU DTTP and the College of Medicine & Medical Sciences AGUCMMS, which since its establishment was planned to follow an innovative program that adopt Problem Based Learning PBL approach to facilitate students learning in AGU, CMMS 2007.

The success of medical education programs in today's information based world economy will require an accelerated demographic transition to a flexible as well as a resource based learning in which the learner plays an active role. Flexible learning describes the form of education respond to learners' needs, for example for material or support during the learning process, on an individual basis.

On the other hand; resource-based learning is a known term in the field of e-learning which places emphasis on the learning materials. It is a learning in which the learner has the choice over sources of information and support. The most used learning resources for this type of learning may include the use of print, audio, video and online (electronic) material which is in wide use for medical education and clinic's training. Integrating and using these technological formats into classic versions of Problem Based Learning PBL will accelerate the students' learning and help them to explore their knowledge in the curriculum topics; therefore they can easily master the taught objectives and skills.

WebCT, Blackboard and Model are among the most used Learning Management Systems LMSs around the Gulf Region higher education institutions. One of goals behind this study is to explain how can the college of medicine and medical sciences at the Arabian Gulf University AGU integrates these learning management systems and their associated tools into the running Problem Based Learning PBL. In specific words the study is going to explore "how can WebCT be used and integrated into the running Problem Based Learning PBL system for delivering the mini-problems and enhance the different types of learning interactions during the learning processes and activities. The present case study is going to assess the possibility of using the electronic communication tools built in WebCT LMS for the Problem Based Learning PBL from resource persons' point of views at the Arabian Gulf University College of Medicine & Medical Sciences AGU, CMMS.

2. Statement of the Problem

The current teaching approach used in the Arabian Gulf University College of Medicine & Medical Sciences AGU, CMMS is a Problem Based Learning PBL approach that requires the students to interact with each other, clarify their educational needs, and exchange the information needed for solving the problem under investigation and make use of various educational resources available online such as electronic books, scientific research papers, internet resources, and then access the collected information to reach a solution

to this problem. For Problem Based Learning PBL purposes, AGU, CMMS used to divide the students into small groups, so that each group consists of 8 to 10 students. Each group meets twice a week, led by Professor (a tutor who directs the group and help them to avoid the traditional role of the teacher, who presents the lesson and assesses his students' performance).

At the first meeting (tutorial I) the problem under investigation will be presented, questions relating to that problem will be raised, the hypothesis will be generated and then learning needs will be identified after reading the problem i.e. based on this each student will determine his learning needs and state his education goals. After this dialogue (by the end of tutorial I) each student (group member) start studying the problem individually through a self-learning approach; gathering the needed information and trying to derive a possible solution to the problem. The group meets at the end of each week to present, discuss and share their findings relating to possible solutions. The acquired information, the new knowledge and the proposed solutions techniques as well as the learning material's contents relating to the problem will be discussed and shared by the group members, and then their performance will be evaluated by the the tutor professor who supervised the group. At the end of the meeting, the students evaluate their learning process and evaluate the role played by their professor who directs and guides the group.

Evidences from a pilot survey conducted through observation, interviews with some students and faculties, reported complaints of some students to the college administration on the traditional method of teaching compared to other colleges of medicine in the first world universities. In addition to the fact that program schedule is very crowded, lack of adequate opportunities for cooperative and collaborative work in the group, planned communication facilities between the group members during tutorial I and tutorial II at the beginning and the end of the week, the communication processes between the student and the professor and the students among themselves are poor and unorganized. This resulted in an

academic information gap which need scaffolding since the learning process is based on a problem based inquiry that requires group discussions, resource sharing, and information exchange among the group members and their resource professionals and professors. On the other hand, providing continuous communication opportunities requires the availability of a large number of classes and halls as well as the requirements for managing the meetings. As mentioned in the literature, distance learning and e-learning communication tools associated with virtual learning environments like WebCT can positively contribute in overcoming such problems and secure communication facilities between individuals without limit of time and space.

Based on the benefits that WebCT virtual learning environment can secure for the Faculty of Medicine Problem Based Learning PBL running approach, the present study sought to explore the possibility of using electronic communication tools built in the WebCT virtual learning environment provided by the Arabian Gulf University, to bridge the gap between two meetings (Tutorial I and Tutorial II) of the Problem Based Learning PBL . Since this potential depends on the students, the resource professional and the professors acceptance of the idea, as well as their e-learning skills and competencies, the study sought to continue in investigating the possibility of using WebCT for better Problem Based Learning PBL educational outcomes, and explore the possibility of using this technology, the associated problems and obstacles for students, resource professionals and professors points of views. This study reports on data collected through focus group of the resource people at the College of Medicine & Medical Sciences.

3. Purpose and Importance of the Study

The purpose of the present study is to explore the possibility of using electronic communication tools for problem based learning in the College of Medicine & Medical Sciences at the Arabian Gulf University, and make some recommendations for better educational practice. The most useful research techniques seem to be by utilizing a focus group techniques session on those faculties

who act as resource persons and tutors at the Arabian Gulf University College of Medicine & Medical Sciences Problem Based Learning PBL educational system. Studying the possibility of using electronic communication tools for the problem based Learning from resource persons' point of views at AGU CMMS is very important for many following reasons:

3.1. Results and recommendation can help AGU stakeholders to deal with the obstacles facing integrating WebCT communication tools into the running Problem Based Learning PBL approach and suggest future solutions for better educational outcomes.

3.2. Resource persons at College of Medicine & Medical Science can encourage their students to make use of these online communication tools for better educational interactions among Problem Based Learning PBL groups and sharing the knowledge with their colleagues.

3.3. If medical education faculties belief in the benefit of these communication tools they can ask administrative bodies to consider staff development training programs in this new field and help the university to shift from the running classical Problem Based Learning PBL approach into a blended learning approach that accelerate their students learning and help them in developing their learning skills.

3.4. Using electronic and communication tools in higher education now has become one of higher education total quality requirements that ensure making the learning resources available and accessible for the students.

Background of Problem-Based Learning PBL

Problem Based Learning PBL is a student centred instructional strategy in which students collaboratively work out problems and reflect on their experiences. It was pioneered extensively using undergraduate medicine and medical sciences programs around many institutions all

over the world. According to (James, 1998), the modern history of Problem Based Learning PBL begins in the early 1970s at the medical school at McMaster University in Canada. Until recently the Problem Based Learning PBL approach has flourished mainly in medical and professional schools. Slowly the applications of this powerful learning approach began to expand and cover other fields such as basic sciences and humanities. As a learning strategy; Problem Based Learning PBL is characterized by, learning driven by challenging open-ended problems, students work in small collaborative groups, and teacher (professors) work takes on the role as "facilitators" of learning. An ideal Problem Based Learning PBL environment provides learners with an instructional mechanism that increase their higher-order thinking skills while exploring authentic and ill-structured problems participating in social interactions and receiving coaching from peers and teachers (Albanese and Mitchell, 1993); and (Hmelo and Ferrari, 1997). The following points are the considerable factors on Problem Based Learning PBL:

1. Phases of Problem Based Learning PBL Inquiry

In a Problem Based Learning PBL inquiry situation, usually the class is divided into groups of approximately 5-8 students each. The group's membership generally remains constant throughout the term. At the early beginning stage, each group member needs to define the learning issues and topics according to the presented problems and then decides how to divide group efforts to solve the problem. The success of Problem Based Learning PBL inquiry needs an ample variety of learning resources and adequate number of tutors to support their students and facilitate their learning. According to (Glazer, 2001), the following elements are commonly associated with any Problem Based Learning PBL activities. These include:

1.1. Problem Generation

During this phase the problems must address the concepts and principles relevant to the content

domain. Problems are not investigated by learners and trainee solely for problem solving experiences, but as a means of understanding the subject area.

1.2. Problem Presentation

Students must “own” the problem, either by creating or selecting it. Ownership implies that their contributions will affect the outcome of solving the problem. So, more than one solution and more than one method of achieving a solution to the problem are often possible.

1.3. Teacher (Tutor) Role

In strategy of Problem Based Learning PBL, teachers and tutors act as cognitive coaches by facilitating learning and modelling higher order thinking and meta-cognitive skills. As facilitators, teachers and tutors give their students’ control over how they learn and provide support and structure in the direction of their learning.

1.4. Learners & Trainee Role

Learners first define or select an ill-structured problem that has no obvious solution. They develop alternative hypotheses to resolve the problem and discuss and negotiate their conjectures with the group. Next they access support or refute their hypotheses in light of the new information. The solution of the investigated problem can be in the form of an essay, presentations, or projects.

1.5. Assessment

Faculty who use Problem Based Learning PBL instruction want students to develop skills to find and analyze information from a multiple sources, to engage effectively in self-directed study, to communicate well using diverse media, and to work productively with a group of peers. (Allen, *et.al*, 2008) mentioned that; these goals are often assessed by comparing student performance several times during the semester at such tasks as giving oral presentations, writing reports, or answering exam questions. Classroom observations and peer evaluation of the group performance are helpful in assessment of students’ contributions to their

groups. Like any learning cycle Problem Based Learning PBL can be repressed by the flowchart, figure 1.

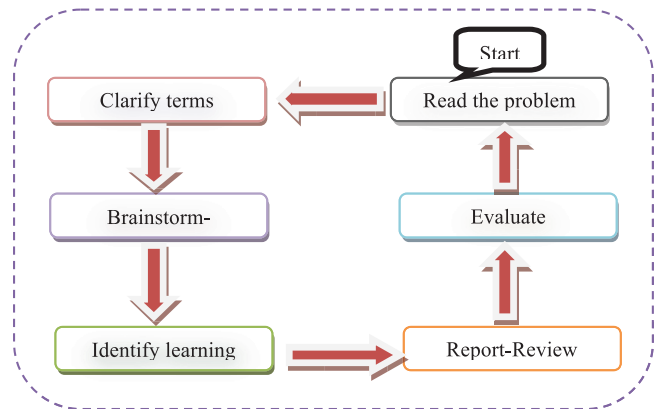


Figure 1: Typical Problem Based Learning (PBL) Unit Tutorial Cycle

2. Online Problem Based Learning (OPBL)

The nature and processes of online learning have changed considerably over the last few years. (Britain and Liber, 2004), mentioned that; a considerable effort had been expanded with the development of managed learning environments rather than the pedagogy of such development. There also continues to be debates at both local and global levels about what counts as problem-based learning and what does not. In comparison with many other pedagogical approaches, problem-based learning has emerged relatively recently, being popularized by (Barrows and Tamblyn, 1980) following their research into the reasoning abilities of medical students at McMaster Medical School in Canada.

Problem Based Learning PBL is an approach to learning where curricula are designed with problem scenarios, central to student learning in each curricular component (modules/units). In a Problem Based Learning PBL situation, students working in small teams examine a problem situation and, through this exploration, are expected to locate the gaps in their own knowledge and skills in order to decide what information they need to acquire in order to resolve or manage the situation. This is done by the use of a “real world” problem or situation as a context for learning. (James and Thomas, 2005) from Iowa State University, USA explored the use of Problem Based Learning

PBL in an online biotechnology course. In their Problem Based Learning PBL unit, student groups dealt with the ethical, legal, social, and human issues surrounding pre-symptomatic DNA testing for a genetic disease. Issues concerning implementation of Problem Based Learning PBL in the online environment are discussed, as the differences between online Problem Based Learning OPBL and face-to-face Problem Based Learning PBL. The results of the study provide evidence to suggest that Problem Based Learning PBL stimulates higher-order learning in students. However, student performance on a lower-level exam testing, acquisition of factual knowledge was slightly lower for PBL students than for students who learned the same material through a traditional lecture-based approach. Possible reasons for this lower level of performance are explored. Student reactions and feedback on the Problem Based Learning PBL format yield more insight into issues surrounding the implementation of Problem Based Learning PBL in the online environment.

From a social learning theorist point of view; Problem Based Learning PBL- inquiry can be viewed as a type of learning that takes place through social interactions, whereby an outside source (resource person or any specialist in the field) can help the individual learner to extend his/her learning. In fact interactions can take place in three different forms: learner-tutor interaction, learner-learner interaction, and learner-content interaction. To show how these interactions can take place, Swan (2003) had adapted the fowling figure in which all Problem Based Learning PBL inquiry components are highlighted, figure 2.

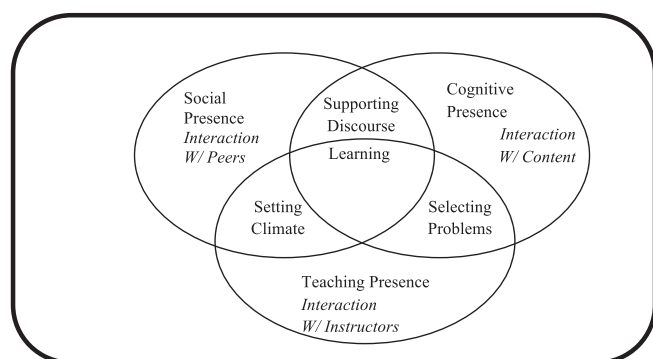


Figure 2: Interactivity and Online- Problem Based Learning PBL Inquiry (Swan, 2003)

3. Using WebCT Electronic Communication Tools to Enhance (PBL)

The terminology (WebCT) is abbreviated from the concept (Web Based Course Tools) which refers to application software / computer program that generates a course template. It is certainly useful for busy university professors enabling them to create sophisticated Web-based Learning Environments (Mhairi, 2000).

WebCT was originally established at the AGU by a faculty member in Information Technology Unit IT 2002. The staff represented in IT began to look at the applications of a web-based system to support traditional educational activities. The marketing of this new orientation in AGU took place through many successive training workshops conducted by IT staff, which was mainly intended to train the academic and technical staff on how to use WebCT tools in developing interactive web-based learning materials so as to support AGU's learning resources and expand the e-learning literacy.

WebCT can be used to deliver a whole and complete online course, with no face-to-face contact, or blended with online learning activities as in the WebCT version used by the Distance Teaching and Training Program DTTP at the college of graduate studies-AGU. The WebCT program has a variety of tools, divided into four main groupings (communication, study, personal account information, and quizzes and surveys). Instructors, tutors, and trainers, developing courses using WebCT select the tools they require for their course and training. The major tools that an instructor can use when developing online course materials were the communication tools (bulletin board, private mail, calendar of course events, and online chat), in addition to icons for the course outline and course content.

Objectives of using WebCT at the AGU are to, provide interactive course material that includes text, images, video, and audio for undergraduate and postgraduate students; specifically for Distance Teaching and Training Program DTTP diploma and masters candidates, evaluate the students who study online using WebCT with

online quizzes and assignments, communicate with online and distance students via discussions, electronic mail, real-time chat sessions, and an interactive whiteboard, facilitate learning using a searchable index, glossary, and image database for each module content, encourage online & distance students' interactions by enabling the creation of student's homepages and online presentation, share module contents with staff members as well as other AGU staff members who try to apply and integrate WebCT delivery into their curriculums and classes, record, maintain, communicate with online candidates graduates, enabling students self –evaluations through online self tests and progress tracking, as well as obtain data that allows electronic tutors and course designers to analyze the effectiveness of their online courses.

On the other hand, Problem Based Learning PBL is a powerful instructional approach. By working through an assessable complex problem-solving tasks, learners can be encouraged to actively engage in the investigation and inquiry and to use high level cognitive thought processes to solve real-life problems in professional contexts. A critical element of a successful Problem Based Learning PBL design is the inclusion of instructional support, such as scaffolding, to guide and assist the learner through the reasoning process that is crucial to successful problem-solving. The e-learning tool "Challenge Form for the Recording of the Analysis of Problems FRAP" is client-based public domain authoring software which facilitates the use of scaffolding, the provision of progressive feedback can promote student reflection at key decision-making points (Stewart, *et.al*, 2007).

(Lo Hao-Chang, 2009) conducted a study aimed to strategically use Computer Mediated Communication CMC tools to build online communication environments for Problem Based Learning PBL. He proposed a six-stage process of Online Problem Based Learning OPBL in his study on identifying the problem, brainstorming, collecting and analyzing information, synthesizing information, co-building knowledge, and refining the outcomes.

The sample of the study was 100 undergraduate students were randomly grouped into 13 groups.

Multiple methods of data collection were adopted to investigate the students' learning activities in the Online Problem Based Learning OPBL course. The methods of data triangulation and investigator triangulation were used to analyze, the use of CMC tools, students' learning achievement, students' experience in the Online Problem Based Learning OPBL course, and group learning activities.

The empirical evidence showed that students were able to communicate, discuss, and co-build the knowledge from the collected information. With the online communication, they were able to seek solutions to the problems in learning activities. Also, participants were satisfied with the Online Problem Based Learning OPBL course experience.

Small-group medical Problem Based Learning PBL was a pioneering form of collaborative learning at the university level. It has traditionally been delivered in face-to-face text-based format. With the advancement of computer technology and progress in Computer Supported Collaborative Learning CSCL, educational researchers are now exploring how to design digitally-implemented scaffolding tools to facilitate medical Problem Based Learning PBL. The Deteriorating Patient DP role play was created as a medical simulation that extends traditional Problem Based Learning PBL and can be implemented digitally. (Lu, Lajoie and Wiseman, 2010) presented a case study of classroom usage of the Deteriorating Patient DP role play that examines teacher scaffolding of Problem Based Learning PBL fewer than two conditions: using a traditional whiteboard and using an interactive whiteboard. Their study results revealed that; introduction of interactive whiteboard technology changed the way teachers scaffold the learning of interactive whiteboard showing all the information shared within the various subgroups of a class, broadening the basis for informed classroom scaffolding and the visual records of interactive whiteboard usage which demonstrated what students understood and reduced the need to structure the task. This allowed more time for engaging students in challenging situations by increasing the complexity of the problem. Although appropriate scaffolding is still based on the teacher's domain knowledge and

pedagogical experience, technology can help by expanding the scaffolding choices that an instructor can make in a medical training context.

4. Using WebCT Communication Tools in Problem Based Learning PBL

Course tool is a feature supplied by WebCT that can be incorporated into any course. Tools can be made accessible (through icons) from the main course homepage, tool pages or from content page buttons. Before looking at the tools that enable interactions and communication in WebCT online environments, we need to reflect on what constitutes good tutoring practice. (Smith and Hurley, 1996) provided an overview of the skills required for guidance based and action planning tutorial systems. Their material covers the following areas: the initial assessment of students, the use of counseling techniques in tutoring, listening, giving feedback, challenging, and guidance and negotiation skills.

In general terms there are two types of online communication, asynchronous and synchronous. Asynchronous communication does not take place in real time. The participants are usually online at different times and in different locations. An example of this is e-mail. You need not be online when someone is sending you an e-mail message; it will sit in your mailbox until you log on to read it. While synchronous communication takes place in real time. The participants are online at the same time, but in different physical locations. An example of this is the chat room, where to participate you must log on at the same time as everyone else.

There are different ways through which Problem Based Learning PBL candidates can communicate in WebCT and their tutors and the course administrator/facilitator) who can let the student knows which communication tools he is expected to use in the learning site. The communication tools that medical educators may make available for better Problem Based Learning PBL outcomes can include, mail, discussion, chat, announcement, calendar, and who's online tools.

(Olwsya, *et.al*, 2005) from United Kingdom, studied the use of WebCT as an additional learning tool on an MEd program "Communications, Education and Technology" program to support

face-to-face classes and provide students with the experience of participating in online discussions. The capabilities of WebCT are to allow students to develop interpersonal and communication skills and be active and motivated learners. They argued that the power that can make this happen is that of teachers. Both face-to-face and online elements of the program expand the teacher's roles and responsibilities immensely. This practical account is found to give participants an opportunity to discuss teacher's roles in building a community of relationships in WebCT and the implications for what it takes to understand and support learning. The following paragraphs explore the different usages of these communication tools in educational settings.

4.1. Asynchronous Methods of Communication

Asynchronous methods of communication are those that do not require the sender and the recipient of a message to be online at the same time. The principal asynchronous tools are e-mail, mailing lists and discussion boards, (mail tool, mailing lists, discussion tool, announcement tool, and calendar tool).

4.1.1. Mail Tool

WebCT provides an electronic mail (e-mail) tool that is available for registered students, teaching assistants, designers and instructors in the course. The mail tool provides the ability to send and receive messages, read messages, and organize messages. It is an important communication tool because it allows private messages to be sent from one user to another. The difference between the discussions tool and the mail tool is that the mail tool allows the user to select who will be a recipient of his correspondence. The messages sent in the mail tool remain on the WebCT site and cannot be accessed unless he/she is logged into WebCT course environment. This tool is favored for communicating directly with the teacher about the results or about a personal matter. As with the discussions tool recourse, people and their assisting tutors can attach files and search messages with the mail tool. An additional feature of the mail tool is that in WebCT course, participants can also save messages to the draft box. This allows him to come back at a later date and amend his message prior to

sending it off. (Repman, *et.al*, 2005) observed that; instructors who design online learning can utilize an array of computer-mediated communication tools to promote student engagement and interaction. They surveyed the tools available, focusing on the uses of the tools for learning (Type II uses). Research results and implications for practice are presented for asynchronous (email, listserv, discussion boards, and blogs/Weblogs) and synchronous (chat, instant messaging, and audio and video Web-based conferencing) tools. With WebCT mail you can, post asynchronous messages (post messages at any time), send private messages to individual students or groups of students, manage email from students within the course instead of with all your general email, and add attachments or links to convey additional information: see below.

4.1.2. Mailing Lists

Mailing lists extend email to groups by distributing messages automatically to everyone who has subscribed to or been added to the list. The list subscribers usually have a common interest so the mailing list enables them to make announcements, exchange ideas and collaborate. For example, JISC mail is a mailing list service for the UK Higher and Further Education communities, enabling its members to share information by e-mail or via the web.

4.1.3. Discussion Tool

Discussions tool is a communication tool in WebCT where students, teaching assistants, course designers and instructors can post messages in a public forum. Discussions are divided into different categories and topics, which allow Problem Based Learning PBL participants to create discussion areas based on particular content areas. Everyone in your problem under investigation or group can access public topics, while private topics are available only to the participants that one chooses. Some examples of topics include assignments, journals, labs, and readings. Each user in a problem based learning situation can view messages within topics according to particular subjects-called "threaded discussions (the problem under investigation).

A discussion board will allow participants to: contribute, or 'post' messages, sort messages by author, date or subject, track replies to messages and follow a discussion in an ordered way by observing the 'threading' of discussions; replies to earlier messages are indented on the screen so that messages on a single topic are linked, attach files to messages and categorize messages by topic.

(Burgess, 2009) examined the possible outcomes of developmental students' critical thinking and motivation to read when the online learning community, WebCT, was implemented. His role, in addition to an instructor, was that of participant-observer. He implemented WebCT tools, such as discussion boards and chat, over a four-month period into his instruction to enhance critical thinking and motivation to read in my Developmental Studies in Reading II classroom. A mixed-method approach for intervention evaluation was employed, and improvements were noted in both reading engagement and critical thinking skills by using these online tools. By incorporating this technology into the developmental studies curriculum, developmental education instructors, will be encouraging and supporting our students' needs to become independent thinkers and learners

Discussions tool can be used by students and their teachers for sharing of information between everyone who has access to the site and participated in Problem Based Learning PBL. This tool enables Problem Based Learning PBL team to post messages that their peers can read and respond to. In Problem Based Learning PBL a group member can read and respond to messages posted by others. This tool allows you to attach files, which can be helpful for group presentation work. There is a search facility which allows you to find messages based on a variety of criteria. Your teacher may even use the discussions tool for posting important announcements for all the students to access. With the discussion board you can: Post asynchronous messages (post messages at any time), post messages to the entire class and engage students in a discussion, use the quote button for replies to include the message you are replying to, add attachments or links to convey additional information, use the "update listing" to see messages posted during your active session, display

all messages vs. display only unread messages, compile messages for printing or archiving, and messages can only be deleted by the designer.

4.1.4. Announcement Tool

Announcements tool allows you to post important information in a central location for all students to read. Messages created using this tool can appear as pop-up messages and can be viewed from the announcements tool.

4.1.5. Calendar Tool

Calendar tool allows you to post important information, such as assignment reminders, in a central location for all students to read. This tool allows you to access public entries made by you or your teacher that would usually relate to class events, assignment information, or may even provide links to content and to relevant websites. There is a Global Calendar button on your My Blackboard page (this is the page that appears when you first login to Blackboard). This enables you to look at all your calendar entries at once.

4.2. Synchronous Methods of Communication

Synchronous methods of communication are those that require all participants to be online at the same moment in time. Synchronous tools may be text-based, audio-based or video-based. Examples are: video-conferencing, which is, as the name suggests, video-based, chat, a text-based system that allows real-time conversation on the internet, whiteboards and internet telephony, which enables telephone calls over the internet.

4.2.1. Video Conferencing

Video-conferencing allows participants in physically separate geographical locations to communicate in real-time through the use of a live video and audio link. It allows participants to see and hear each other in real time. Groups can therefore be convened for lectures, meetings and discussions. Video conferencing requires some obvious components: a camera, video display, microphone and speakers. Each of these components will affect the quality of the video

conferencing experience. Three types of video conferencing existed, one-to-one, that is, one site to another site, one-to-many, for example, a lecture is broadcast too many sites, and many-to-many, with several remote participants.

4.2.2. Chat Tool

Chat tool allows you to have real-time conversations with participants of your course. It can be used for online, interactive sessions such as Problem Based Learning PBL tutorials and discussions. In addition, you can request a guest account for professors and guest speakers to speak with your class via the chat tool. The chat tool contains both chat rooms and whiteboard rooms that you can make available to your students.

Chat tool enables synchronous (real-time) communication among students and teachers of the online site. Participants have to be in the same chat room at the same time in order to communicate. If you are late to a chat room and the discussions have already begun, you will not be able to see what has occurred before you logged in. However a log of the chat is recorded and your teacher can email you this log when the chat is finished. This tool could be used to bring students, teachers and guest speakers together at a convenient time to discuss study-related topics.

On this note (Salminen, *et.al*, 2010) investigated whether combining chat, discussion and construction of an argument diagram stimulates students to formulate new ideas in practicing argumentation. In this study, 16 secondary school students discussed vivisection and gender equality in pairs using both free and structured chat tools. In structured chat, the students selected and completed partial sentences provided by the computer. After the discussion, they jointly constructed either argument diagrams freely based on the previous discussions with an Internet tool or modified a diagram the computer had constructed automatically during the structured chat. The freely constructed diagrams contained more of the students' prior knowledge than the modified diagrams. However, the different types of diagrams did not differ significantly in breadth,

depth, or the balance of argumentation. In a similar study (Freiermuth, and Huang, 2010) examined the motivation of 20 Japanese students of English as a foreign language who chatted electronically with 19 Taiwanese English as a foreign language students using online synchronous chat software. Qualitative analysis of a post test questionnaire and the texts that students produced during their online task revealed that students were generally motivated throughout the task with respect to all four of the factors. It was suggested that well-designed online chat tasks, whereby students need to arrive at a consensus via interaction, can be very motivating to students. For teachers, electronic synchronous chat represents one more valuable tool for language teachers to facilitate interaction in the target language.

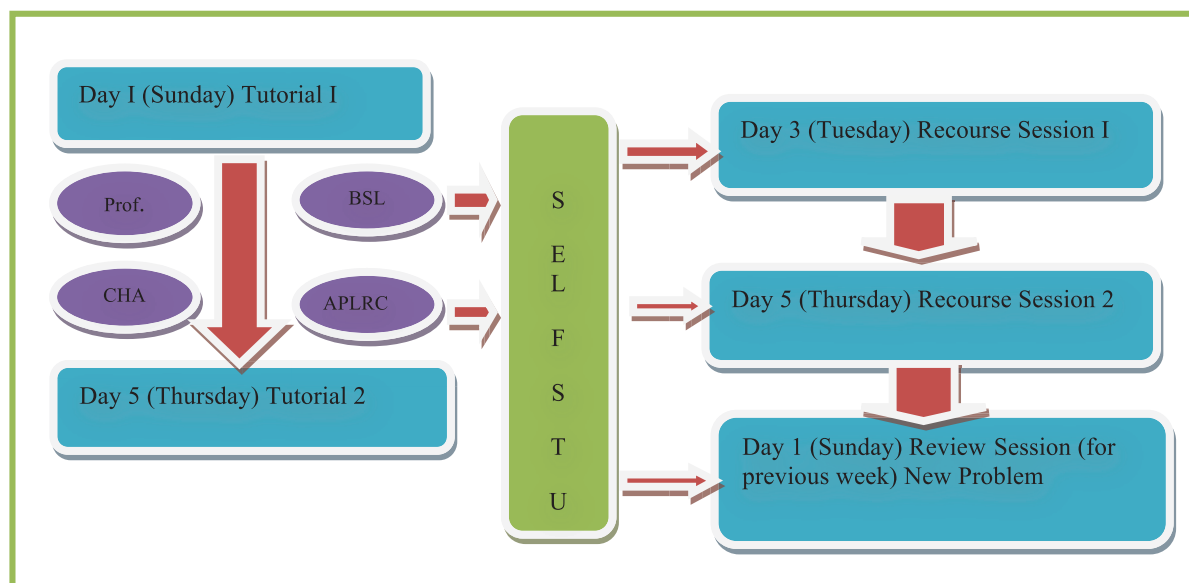
With online chat you can post synchronous communication (students must be logged in at the same time, type your message in the box labeled enter your message below and press enter or return to the keyboard, and also see that the output interaction box displays the discussion and record the online chat.

4.2.3. Whiteboards

Whiteboard is an interactive tool that you may have used in the classroom situation, where it enables you to show a projection of anything that is on a computer screen to the whole class. In the online situation, most Virtual Learning Environments VLE contain an interactive whiteboard. The principles of recording and storing class contributions were carried over into the online environment, where students can interact and collaborate using the whiteboard tool. The tutor can use it with a group of students for explanations, to draw diagrams, insert graphs, equations or text, indeed to do anything that they might do in the face-to-face situation using a chalkboard or flip chart. Students can add contributions to, for example diagrams, in the whiteboard area and everyone can view changes as they are made.

4.2.4. Who's Online Tool

Who's online tool allows you to communicate with individual participants from your courses (students, auditors, other instructors) via a built-in instant messaging tool.



(CHA=Community Health Activities, APLRC= Anatomy-Pathology Learning Resources Center, Prof. Skills= Professional Skills, BSL= Basic Science Laboratories)

Figure3: Typical Week in Phase II: Adapted from Arabia Gulf University College of Medicine & Medical Sciences AGU, CMMS Problem Based Learning PBL (AGU, 2008)

Problem Based Learning PBL Implementation at the Arabian Gulf University AGU

Usually the Arabia Gulf University College of Medicine & Medical Sciences AGU, CMMS Problem Based Learning's PBL tutorials start in the second phase of the medical science curriculum (the integrated units system phase). Each week is designed around one or more conceptual theme reflected in the learning needs for that week. The problem serves as a vehicle for integrating the concepts explored in the various learning activities (AGU, 2008). A typical week in phase II of the medical curriculum for a unit of study is represented in figure 3.

1. Problem Based Learning PBL Tutorials

In Arabia Gulf University College of Medicine & Medical Sciences AGU, CMMS, Problem Based Learning PBL tutorial each group generally consists of 8-10 students assigned randomly and facilitated by a faculty member. The facilitator must know how to work with groups (as well as how to train groups on how to work with each other). The role of the facilitator poses the strongest challenge for Problem Based Learning PBL success; he must guide the learning process without contributing directly to the solution of the investigated problem or being the primary source of information.

2. Staff and Students Meetings

Staff and students meetings takes place two times a week (usually on Sunday and Thursday) for around three hours per a session. During the first meeting the investigated problem/problems are introduced, the rules are grounded; so that own learning expectations will be driven. The problems will facilitate the introduction of available learning resources to the students. The groups use the outputs of discussion and feedback to, identify their problem, explore pre-existing knowledge, generate hypothesis and explain mechanisms, reevaluate / report hypotheses based on new information, and generate their learning needs.

3. Independent Self-directed Study of the Learning Issues

Usually these activities takes place during the duration of the first meeting up to the second session i.e. (From Sunday to Thursday (see figure 3). During this period, the students take on individual responsibilities such as finding information and resources, making calculations, and performing analysis in coordination and collaboration with the direction and ideas of the group by investigating resources such as (read on print material, visit learning website in the problem field, watching or displaying recorded material, or conducting a field visit. To help in solving the problem, sub-grouping and contentious discussion may take place before the group submits a report on the proposed solution.

4. The second Session (Meeting)

The second Session (meeting), as represented in figure 3 (see, figure 3), usually takes place on Thursday so as satisfy, discussion of the learning issues, application of new knowledge to case (learned problem), and assessment and reflection on it.

The activities of this phase allow the students to make contributions to the learning community by sharing the strategies used to resolve the overall problem. The role of the tutor is to emphasize alternative methods for solving the problem.

Focus Group in Medical Education

In general, the focus group technique is a qualitative research method that concentrates on words and observations to express reality and attempts to describe people in natural situations. As a research method, it grew out of a strong academic tradition that places considerable trust in numbers that represent opinions or concepts.

The focus group may be defined as an interview style designed for small groups. Moore specific focus group can be defined as: a carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment. Focus group methodology can be traced back to Emory Bogardus, who in 1926 described group interviews

in his social, psychological research to develop social distance scale (Wilkinson, 2004). Over the past century focus groups have been used for many purposes. In particular, the US military (Merton, 1987); Marxist revolutionaries (Freire, 1970/1993), literacy activists (Kozol, 1985) and feminist activists (Madriz, 2003) have adopted the focus group method as a means to allow them to advance their causes and concerns.

Focus group methodology is one of several tools that educators can use to generate valid information important to the advancement of programs, communities, and organizations. This research explores focus group as a qualitative research method and describes its real uses for exploring the possibility of using electronic communications tools in the WebCT learning environment for Problem Based Learning PBL at Arabian Gulf University AGU.

1. Rationale and Uses of Focus Groups

Focus group techniques, also called “Focused Group Discussions” or “User Groups” were developed after world war II to evaluate audience response to radio programs¹. A focus group is a qualitative research process designed to elicit opinions, attitudes, beliefs and perceptions of individuals to gain insights and information about a specific topic (Anne, 2004). It is a form of group interview that capitalizes on communication between research participants in order to generate data. Although group interviews are often used simply as a quick and convenient way to collect data from several people simultaneously, focus groups explicitly use group interaction as part of the method. This means that instead of the researcher asking each person to respond to a question in turn, people are encouraged to talk to one another: asking questions, exchanging anecdotes and commenting on each other’s experience and points of view. The method is particularly useful for exploring people’s knowledge and experiences and can be used to examine not only what people think, but also how they think and why they think that way.

(Stewart and Shamdasani, 1990) mentioned that: focus groups were originally called “Focused Interviews” or “Group Depth Interviews”. The

technique was developed after world war II to evaluate audience response to radio programs. It is a qualitative research method that concentrates on words and observations to express reality and attempts to describe people in natural situations. More specific focus group can be defined as: “a carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment”. (Loveless, *et.al*, 2013) described a study grounded as a self-study using arts-based inquiry to explore the experiences of six university faculty members participating in a cross-disciplinary faculty development program. They described the Madison Research Fellows MRF program, and explored the impact of the Madison Research Fellows MRF program. Participating members included assistant professors and researchers in the disciplines of education, sociology, biology, psychology, business and information systems, and instructional technology for distance education. They provided a model for others who aim to create similar cross-disciplinary collaborations in institutes of higher education.

Many sciences and medical programs use focus group techniques as an essential tool for quality assurance in education. (Nestel, *et.al*, 2012) reported their experiences of focus groups for this purpose. They described the implementation of the strategy, including the development of topic guides, interviewer training, respondent recruitment, record keeping, template production, transcription, analysis and reporting of results. They reported that focus groups are the most important evaluation method in helping them measure the extent to which they have met the goals of their first year program. Their benefits of this technique include generating detailed information in a relatively short time. The experience of focus group techniques contributed in building their capacity and capability in qualitative research methods. Challenges include the human resource intensive nature of scheduling, transcribing, analyzing and report writing. (Ktoridou, *et.al*, 2012) conducted a study to evaluate whether medical student participation in Time Slips TS, a creative group-based storytelling program, with persons affected

by dementia would improve student attitudes toward this patient population. Fifteen fourth-year medical students from Penn State College of Medicine participated in a month-long regimen of Time Slips TS sessions at a retirement community. Student course evaluations were analyzed at the conclusion of the program to examine perceived qualitative changes in attitude. Qualitative data revealed insights into the manner in which student attitudes toward a geriatric patient population became more positive and concluded that participation in a creative group-based storytelling program might improve medical student attitudes toward persons with dementia.

In 2000, the Senior Mentor Program SMP was implemented as an innovative, instructional method at the University of South Carolina's medical school curriculum designed to enhance and strengthen student training in geriatrics. (Crown, *et.al*, 2006) qualitatively analyzed second-year medical students' and senior participants' perceptions of and attitudes towards the Senior Mentor Program SMP as an effective learning modality. A sample of 36 second-year students from two consecutive classes (2002-2003) and 42 senior mentors at USC's School of Medicine participated in five and seven separate focus group interviews, respectively. Overall, student and Senior Mentor participants viewed the program positively. Thematic comparisons by participant type indicate a shared view that the mentoring relationship has a far-reaching, educational, professional, and personal impact. Both students and seniors agreed that myths and stereotypes about aging were dispelled and students indicated that a close, caring relationship with an older person will change the way they practice. A longitudinal mentoring program that pairs students with community-dwelling seniors can be a valuable addition to traditional geriatric curricular activities designed to increase students' skills and compassion for caring for older adults.

2. Who Involved in the Focus Group Process

When designing a focus group interview study, educators need to plan for participants' selection very carefully. It should not be assumed that

focus group samples necessarily are accidental or purposive. According to Tynan and Dryton (1989), care is required to create samples that include subjects with necessary product user characteristics. Methodologically, focus group interviews involve a group of 6–8 people who come from similar social and cultural backgrounds or who have similar experiences or concerns. They gather together to discuss a specific issue with the help of a moderator in a particular setting where participants feel comfortable enough to engage in a dynamic discussion for one or two hours. Focus groups do not aim to reach consensus on the discussed issues. Rather, focus groups 'encourage a range of responses which provide a greater understanding of the attitudes, behavior, opinions or perceptions of participants on the research issues' (Hennink 2007). In general, any focus group session/process involves the following:

2.1. The Facilitator

The facilitator guides the group through the discussion and keeps the group focused on the topics for discussion. His role is to seek wisdom, enlightened novice, expert consultant, challenger, referee, writer and a team: Discussion Leader & Technical Expert.

2.2. Note-taker/ Assistant Moderator

The note taker is an observer and does not interact with the group. The notes should include a sense of what each person said; identify how comments were said; and record when transitions occurred from one topic to the next.

2.3. The Technician

The technician is responsible for recording, the focus group. The recording will be used to create a transcript of the event.

2.4. Participants

In traditional focus groups, participants are randomly chosen in a manner that seeks homogeneity among participants, in order to elicit opinions from a "like" representative group (for example, all community-based victim service

providers). Depending upon the focus group goals, sponsors may wish to seek complete homogeneity in participants, to seek variety in participants based on how their backgrounds, insights, perspectives and diversity of culture, gender and geography will contribute to goals and outcomes, and to conduct simultaneous focus groups were two different groups of participants (each group's participants alike, but different from the other group, i.e., A group of crime victims and a group of judges) respond to the same discussion guide questions, then, are brought together to share responses and provide further opportunities for a combined group discussion.

Focus group participants traditionally do not know each other while, for the purposes of victim services, strategic planning, many participants will know each other. This adds a challenge for sponsors to prevent participants from coming with a preconceived agenda, and for the group facilitator to prevent participants from clustering together or trying to dominate group discussions.

A decision to participate in a focus group is sometimes dependent on whether or not strict confidentiality is offered to all participants. Focus group sponsors should be clear about confidentiality guidelines and restrictions, and document such restrictions in writing. Once you have decided from whom you want to obtain information, you can decide what types of participants you will need for each focus group. Each individual focus group should be made up of similar individuals, so the number of focus groups will depend on how many different types of groups from which you want to gather information.

Methodology

For the purpose of this study, an online course component in the WebCT learning environment was created for the benefit of the third-year medical students at the Arabian Gulf University College of Medicine & Medical Sciences AGU, CMMS. The goal of this is to facilitate the communication process and interaction among the students and between them and their professors as well as resources people in the period between the first meeting (Tutorial I) and the second meeting (Tutorial II). This type of communication represents an important element of the problem-based learning activity. So the study developed the questions that can be used to guide the participants' discussions. The discussion idea was build on a main question for the focus group team rising the question that ; why the students did not accept the use of communication tools provided by the virtual learning environment WebCT, This meeting was administrated to discuss the reasons why the students are low motivated to communicate and take advantage of the features offered by WebCT LOMS, while the main question was extracted into sub-questions to be used in the management of the debate when it was clear that the main question was not enough to guide the discussion in the direction that leads to draw participants' views. Around eleven sub-questions have been developed and revised by a comity of three judges, in the field of educational research who suggested minor corrections/changes and language enhancement in some questions. After the revision process the main question and sub- questions guiding the focus group session list was ready for administration as shown in the following table 1.

Table 1: Focus Group Questions.

No.	Sub-question	Notes
1.	Do you have any experience in the use of WebCT virtual learning environment or have you ever used it before?	
2.	Did you face any difficulties to access and use WebCT learning management system?	
3.	Do you think that WebCT learning management system represents a suitable technology that can be integrated and used in your running problem-based learning?	

No.	Sub-question	Notes
4.	Do you agree to develop and deliver your course and problems materials through the WebCT learning management system?	
5.	Do you think it is useful to have communication, discussion, e-mail and chat; between you and your students during the week in the period between the first and the second meetings ((Tutorial I - Tutorial II)?	
6.	Does (WebCT) add benefit in this regard?	
7.	Do you think that the use of communication tools in discussion and e-mail, discussion and conversation (Chat-E-mail) in a WebCT virtual learning environment useful in improving the students' achievement?	
8.	Do you think that the presentation of the learning needs of the students in the WebCT learning management system can enhance and develop the students' motivation to interact with each other?	
9.	Do you think that responding to and answering the questions resized by the students and communicate with them will improve the learning outcomes?	
10.	Is it possible to conduct Tutorials sessions via the WebCT virtual learning environment in state of the traditional face-to-face meetings? What are the advantages and what are the disadvantages?	
11.	Do you have any suggestions or opinions that you want to add, and you think it can contribute positively to the development of the WebCT learning management system and make it compatible with the AGU Problem Based Learning PBL approach	

To increase the validity of evaluation mixed methods, data analysis approaches was utilized by using a variety of data collection techniques and data analysis. Because focus groups is one of the few methods in which data is gathered from a group therefore it is useful as part of a mixed method approach

Results

the study discuss the possibility of using electronic communication tools for Problem Based Learning PBL at Arabian Gulf University from resource people point of views. therefore the study administrated a focus group technique session for 10 participants (8 faculty staff (professionals) from the AGU CMMS. who participated in selecting and recommending learning resources for Problem Based Learning PBL, 2 faculty staff from AGU DTP, and 2 biostatic specialists). The session aims to investigate the problems and obstacles associated with the use of the e-communication

tools in the AGU running PBL and explore the possibility of using such tools at the Faculty of Medicine & Medical Sciences resources as well as faculties to generate practical solutions for better medical education outcomes in the AGU. Table 2 presents a summary of the participants' characteristics.

Table 2: Focus Group Participants' Characteristics.

Specialization	Frequency	Percentage
Distance Education	3	23.07 %
Biostatistics	2	15.38 %
Anatomy	3	23.07 %
Biochemistry	1	07.69 %
Physiology	1	07.69 %
Community Medicine	1	07.69 %
Pharmacy	1	07.69 %
Infections Control	1	07.69 %
Total	13	100%

In light of explanation of the developed WebCT in DTTP, the session discussed the WebCT learning environment to be used to support (PBL) activities between meeting I, and meeting II for better interaction and communication among the students and their tutors. Results of this effort was that no student or faculty makes use of the proposed communication tools, so DTTP seeks a scientific solution for the problem from an expertise point of view. Also, the session assured that DTTP philosophy is to support and helps other AGU departments in integrating information and communication technology and virtual learning environments like WebCT in their teaching in order to enhance the final outcomes of learning. Results of the focus group discussion are the following:

1. Poor Training and E-learning Facilities

Most of the faculties as well as their students reported on the lack of training opportunities and the availability of e-learning software. Dr. Khalid Joma, Prof. of Biochemistry, stated that; in the recent few years the CMMS conducted intensive training workshops on how to use the WebCT learning management system under the direction of the former dean of the college Prof. He also thinks that the training was interesting and highly recommended in the medical education field, but a post decision must be undertaken by the university stakeholders on integrating e-learning into the running PBL system. Moreover; he mentioned MN' that advanced training opportunities and instructional software funs should be squared in advance. Dr. Abdel Haleem Dheifallah, Prof. of Anatomy, comments on the need for training, by stating that, all of us; faculties, resource persons, tutors and the students need training on how to integrate WebCT Virtual Learning Environment VLE tools in our teaching and how to make use of the Virtual Learning Environment VLE communication tools. Dr. Mirghani Ali Osman, associate prof. of Anatomy, thinks that the situation will be very simple, if AGU rely on planning to use and integrate e-learning into the running PBL, the university should first train staff, the tutors and the students on how to deal with the WebCT learning environment tools to a good level. So any

staff member can successfully manage and run his own course or problem by reasonable effort. The session facilitator concluded the training issue by clarifying that there are training activities on how to use WebCT learning environment have been implemented for students, but faculties and resource people required advanced training on how to access, develop and manage WebCT courses. They need training to develop educational, technical and e-learning competencies and skills; so he suggested and recommended special training program for the staff and tutors cagey.

2. Lack of Adequate Information, Experience Sharing, and Annoyance Related to the Current Innovation

Many of the participants reported that; it was their first time to hear about that the experiment, that no sufficient information and staff involvement was made in advance, which can possibly take place through mobilization and concerted efforts for successful implementation and adoption. Prof. Khaled Jomaa said as a coordinator of Problem Five, "I was surprised that his students are participating in a pilot study concerning using WebCT communication tools without any advance arrangement. Therefore, I will not go to ask my students to participate, nor motivate them to use the proposed electronic environment." For the success of the proposed online (PBL), he thinks the ideal process is involving them in such planning and considering their experience and class authority. Dr. Mirghani Ali, also observed that, though we believe in the educational value of this technology, any new system success depends on the systematic and proper planning, so those who guide WebCT utilization for PBL should sit with our college and identify the administration, the staff, the tutors, and the student's roles in the implementation phase.

3. Importance of Explaining the Value of the E-learning Experience for the Student

The students as the customers who supposed to get the benefit from the experience, need to be aware of why they use WebCT technology? Is it an extra course work or innovation for educational

acceleration required in their evaluation and final grades. Dr. Marwan Abu Hijleh, Prof. of Anatomy, recommended the student involvement in the program from the beginning and making them feel as part of the program. The value of the program should be explained by their medical professors not from the WebCT technical staff. Dr. Kassab, Prof. of Physiology and stressed that by saying, “it is important and necessary to involve the students in the planning for the experiment and connect that with their academic calendar operations in order to ensure positive participation and enthusiasm to run the experiment”.

4. Design of the Virtual Learning Environment VLE WebCT is not Attractive Compared to Educational Websites Displayed on the Internet, which the Students used to Navigate through

This has led the students to prefer other sources of information and knowledge related to their problem. AGU WebCT course should be designed and developed in a fashion similar to international standards that motivate the students and encourage them to use it. Dr. Adel Elsaied, from the Department of Community Medicine said, there are a lot of obstacles to the use of the AGU WebCT due to the characteristics of the running PBL system. The team thought that the curriculum and learning strategy revision should be considered before the implementation of the proposed communication tools. Dr. Marwan Abu Hijleh, mentioned that, through my experience with the third and fourth year students, many students are using e-learning and have the educational websites for their own use and participated in commercial learning resources in the same topics, if AGU WebCT learning resources is not to the same standard they may not use it.

5. Lack of Motivation to use the WebCT Environment. Majority of Students are not Motivated for Such Experience and don't Believe in its Effectiveness

In this regard, Dr. Abu Hijleh comments that, if the students found the program useful for them in their learning and linked to what the curriculum, it will enhance their motivation and therefore

they will automatically use it and respond to the trail, otherwise it will be too difficult to win their participation.

6. Proposed WebCT Environment is Poor Compared to other Educational Resources

Some students believed that the proposed e-learning environment is poor and what they need can be found out in another e-learning websites. Dr. Ali Abdullah, Associate Prof. of Pathology mentioned that, when he asked his students about the reason for their reluctance to use the WebCT communication tools the response was that, there is nothing only mini problems and multiple choice questions, which most teachers do not consider it their discussion sessions.

7. Students who don't Own User Name and Passwords Cannot Access the Recommended WebCT Course

The issue was pointed out by Dr. Ali Abdullah when he asked his students about the reason for their reluctance to use the learning environment WebCT, some students answered that they don't own password to access the environment WebCT.

8. Some Staff Members Think and Believe that using E-learning Communication Tools is Contradictory to the PBL Philosophy Utilized by the CMMS

Prof. Salah Kassab, stated that, “we must clarify the objectives of using the WebCT learning environment for our students, and use it as supportive learning resources not as a substitute for the teaching method utilized by the college. This simply can be done by making use of the WebCT communication tools between meeting I and meeting II to facilitate the communication among the students and their tutors and help them to share learning resources and exchange the ideas related to problems under investigation”.

9. Application of the New Approach of E-learning Needs to be under the Supervision of E-learning Instructional Team Specialized in the Academic and the Technology Sides

This was referred to by Prof. Salah Kassab, who said that, “the utilization and recruitments of the proposed strategy may need a dedicated team to lead the diffusion of this innovation, assigned by the university administration and carry out all the needed activities related to utilization of electronic communication tools in PBL starting from the planning phase and ending with evaluation”.

10. Absence of Sufficient Encouragement for the Students to Accept the Idea and Make use of it in their Education

According to Dr. Hundo, Assistant Prof. in Pharmaceutical Sciences and Drugs, students skilled for using internet. He thinks that their reluctance to use the WebCT communication tools in the educational process is linked to the motivational and physiological problems which can be overcome and solved by more doses of encouragement and spilling the activity into phases and sub-phases.

Discussion

This study aims is to explore possibility of using electronic communication tools for problem Based Learning PBL from faculties (resource people & tutors) point of views. Regarding this category, a qualitative research approach based on focus group techniques was used to gather information related to the problem under investigation. Both participants staff and resource people were in complete agreement on reasons behind the student reluctance to using the proposed communication tools in the running PBL system. Moreover, they generated importance and value information, for solutions, theoretical and practical problems faced by the student's learning and those involved in the design of mini problems in order to fill the gaps associated with the curriculum. Results of the analysis are harmonious with most of reported reasons for the reluctance of students associated with the use of electronic communication tools under study, including:

1. Data analysis revealed that, poor training opportunities and lack of software facilities, contributed in making both students and

staff to feel unhappy and reluctant to be involved in the activity. Also, they are not familiar with the e-learning requirements and lack the core competencies of the e-learning competencies. Majority of the participants (resource people) believed that training represents an essential obstacle for them, and if AGU provides good training and gripped the necessary learning skills, it will be possible to integrate the proposed WebCT communications tools in the running PBL. This result was in complete agreement with (Catney and Currie, 1999) recommendations which assured that training the students and the staff on how to use WebCT learning environment and its related communication tools should take place before its usages in education.

2. No sufficient marketing and notification took place before the injection of the experiment among the staff and the students. This fact regarded the participants and their students as if they are not part of the application. The author thinks that for effective use of WebCT communication tools in online PBL, notification of the activity should be under the collaboration of the university higher administration, not from a department as AGU DTTP. For effective utilization, many professors of medical sciences thinks that a shared planning is highly recommended. AGU needs to plan for online PBL and integrate that in the running curriculum and secure all needed resources for that if the university aimed to activate the role of technology in education. For successful online PBL in medical education, a joint effort between AGU CMMS and AGU DTTP, by the university administration, must be well planned and established. In this respect, training in systematic design of interactive instructional material, class presentation and e-learning development is highly recommended. Several previous studies result supported this orientation, for example (Lu, Lajoie and Wiseman, 2010)

using communication tools allowed more time for engaging students in challenging situations by increasing the complexity of the problem.

3. The student's failure to perceive the importance of using WebCT communication tools in their PBL and the degree to which these tools can facilitate the communication and cooperation among them and their tutors, from data analysis and the driven results, it was clear that the students did not lack the technical know-how of technology and its related tools, as far as they lack the perceptions on the educational value of using such technology in education. They need sessions on the importance of these tools in medical education, need to be familiar with e-learning to make it feel as a part of their institution's academic culture. The proper involvement in e-learning should start at the beginning of their college program, *i.e.* an induction module/course on how to use WebCT and e-learning should be planned as a part of the induction program. This result agreed with (Taplin, 2000), who concluded that the absence of the goal behind specific technology usage will make the student and the costumers neglect its' use.
4. On weak design of AGU WebCT virtual environment and poor educational sources, the study found that, the resource people and the students at the CMMS are not encouraged to use the proposed WebCT online PBL, *i.e.* due to the poor design of environment compared to commercial educational websites. Most of the students reported that they used to navigate educational websites recommended by their professors and accompanied their books and references, some of them think their lectures notes and the available information are sufficient for their learning, while a large group of them use commercial virtual learning environments based on the Internet. From these websites, they can access up-to-date- learning material and resources of medical sciences. If one compares the proposed WebCT content and the content of the commercial websites

used by the students, it will be clearer that the lack of sources and diversity of the educational environment and therefore the student prefer access to learning environments that possesses rich resources of educational tools as long as it relates to the rapid and responsive to the purpose. This result is consistent with the findings of the study.

(Bank, 2000) stated that, online educators wear many "hats". Some of the different hats that online educators are donning include:

- a. The technological hat, which refer to the use of the available technology to enhance student learning as not an easy task for educators. Educators must be prepared to understand the application software and also the implications of technology for adopting different strategies in teaching.
- b. The pedagogical hat in which creativity is needed to design a course that brings students "nearer" in an online learning environment. In the invisible classroom, the tools/applications used to monitor or raise the intellectual skills of students require the educator to adopt the right tools and not simply use the tools that are available.
- c. The social hearth, where educators have to establish some form of rapport with the students.

In any online PBL, the communication tools should be used to establish a friendly, cohesive and comfortable learning environment. This is not easy, since non-verbal messages cannot be detected through this medium. Educators wear this hat least because of the task-oriented setting of the online syllabus. However, this hat is important in allowing opportunities to increase student learning and ensure that student motivation levels remain high (Tham and Werner, 2002). Training the staff on designing an attractive and interactive online environment and training the students on how to use the communication tools friendly represents a key factor for the success of the online BPL in medical education.

The students are not motivated enough to interact with the proposed WebCT content and use

its associated communication tools. As it is well known that motivation is the driving force for any educational success, if the participants lack the motivation, they are not going to positively participate in such learning activity. Regarding this point, the students and their professors' motivation, and educational, behavioral need changes, and also the increased workload are real concerns that institutions are struggling to balance. It is well known that changes are frequently resisted (Dent and Goldberg, 1999), and this may be demonstrated with regard to faculty and student resistance to the implementation of technology. Student's motivation can be encouraged by locating extra mark for using the WebCT tools. In an online PBL approach, as in the traditional BPL, the tutor needs to take into consideration a number of elements in order to create the circumstances that motivate students for active learning. Abraham Maslow's 'Theory of Growth, Motivation' notes that fulfilling the needs of people is crucial to increasing their motivation (Abraham. 1987).

Administrators of AGU CMMS needs to plan and address how they are going to prepare their faculties to adapt to the new educational reform related to the use of WebCT and online PBL. Some of the participants associated the lack of motivation with a number of factors, including the fact that using the proposed online material is considered as an additional work on the students and not a part of their curriculum, so it is not considered during the assessment and final grades. Second group associated lack of their interest to resource people's attitudes towards these communication tools. Many students reported that when they post messages and questions using these tools, there is no response from their tutors and resource people. This result contradicts the study orientations, which seek to facilitate learning interactions. A third group think that if the WebCT resources is good, rich and related to their student's learning need they will make use of it. On the other hand, the students reported that, the WebCT contained only small problems with no information, so a student can obtain them in a way or another.

Technical problems relating to the username and password represents one of the main problems

related to accessibility of learning resources. Subjects complained not beneficiaries of the WebCT, but of the lack of technical support. There was no enough technical support for the online PBL users, and so such problems caused frustration and unwillingness to spend more time to try the proposed WebCT environment. This result is consistent with the findings of the study carried out by (Mike, et al., 2006), on the technical barriers related to the online learning resource access them, and difficulties in access to guest network resources.

Some of the participant thinks that, the proposed strategy on using WebCT communication tools in PBL was inconsistent with the philosophy of PBL. This result was concluded from the reported speech of Dr. Salah Kassab, who believes that using online learning is against to their system of philosophy and cannot be adopted by his staff and students. He reported that; for the success of the experiment the higher administration should be involved, the CMMS should adapt the curriculum so as to fit with the proposed online PBL approach. In like manner, there must be a real engagement for the learning community at the CMMS to a degree that will help them to deal with the jargon of e-learning.

Lack of competent faculty team who can supervise the utilization of e-learning, help other tutors and resource people in adapting online PBL. This was pointed out by Vice Dean of the CMMS, who believed that the new approach requires the supervision of specialized and well trained team.

In summary, we identify the reasons that caused the reluctance of students on the use of communication tools in WebCT environment and integrating them in running problem based learning at the AGU CMMS, as well as posting that the required technical and e-learning competences will provide information from the field, which can be used for the design of e-learning for medical education, and staff development at the AGU. This in turn will contribute to overcome all obstacles related to online PBL and the adaptation of e-learning as one of the innovations in higher education in all fields and merged the education system based on the problem. The findings of the study provided evidence that an appropriate

induction program, as well as adequate tutor and technical support, were important to enable students to overcome potential barriers to the use of WebCT communication tools in PBL and their online participation.

Conclusion and Recommendations

This study explores the possibility of using WebCT Virtual Learning Environment VLE communication tools for online PBL in medical education, but began with a brief look at what constitutes good tutorial practice. This practice includes the initial assessment of students; the use of counseling techniques in tutoring; listening and giving feedback; challenging; guidance and negotiation skills. A number of values underpin the practice of 'good tutoring' but their general theme as one of the tutorials is a means of communication between tutor and student.

A number of communication tools can be used by students and tutors to enable interactions and communication online. These may be asynchronous or synchronous. The principal asynchronous tools are e-mail, mailing lists and discussion boards. The principal synchronous tools are videoconferencing, chat and whiteboards. These tools carry various advantages and disadvantages.

Online PBL participation is an issue in online tutoring because the online learning community lacks the support of routine timetabled class meetings. The principles for maintaining an online learning community are the same as those that govern the maintenance of small groups: participants must feel free to contribute to discussions; participants must be treated respectfully; no participants should be allowed to dominate; and maintenance of the community is the responsibility of every participant.

There is no formal body that regulates the content of websites or the conduct of discussion boards, chat rooms and so on, but a number of conventions of online behavior have evolved over time. These are referred to as netiquette. The basic rule of netiquette is that every participant should be aware and respectful of the person (s) with whom they are exchanging communication.

Based on these results, the study recommendations include:

1. Start the e-learning experience by re-injecting WebCT communication tools at the pre-medical stage.
2. Enhance the format and design of mini problems and case study scenario based on the principles of good instructional design.
3. Development of knowledge and understanding of e-learning among AGU staff and students.
4. Keep conducting continuous assessment and evaluation of the e-learning experience at AGU and make use of the available technology in medical education.

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References

- Abraham Maslow** (1987) *Motivation and Personality 3rd ed..* Longman Publishing Company, London, UK, pp 1-336.
Available at: <http://www.amazon.com/Motivation-Personality-Edition-Abraham-Maslow/dp/0060419873>
- AGU** (2008) *A Guide for Problem-based Learning (PBL) Tutorials.* College of Medicine and Medical Sciences, Arabian Gulf University AGU, Kingdom of Bahrain. (Pamphlet).
Available at: http://www.agu.edu.bh/english/colleges/cmms_phaseII.aspx
- Albanese MA; and Mitchell S** (1993) Problem-based Learning: a Review of Literature on its Outcomes and Implementation Issues. *Academic Medicine*, **68** (1): 52-81.

- Allen DE** (2008) *Reinvigorating the Undergraduate Experience: Successful Models Supported by NSF's AIRE/FAIRE Program*. University of Delaware, Newark DE 19716, USA.
Available at: http://www.cur.org/publications/AIRE_RAIRE/printer/Delaware.asp
- Anne Seymour** (2004) Focus Groups: an Important Tool for Strategic Planning. Office for Victims of Crime, US Department of Justice, Washington DC 20530, USA, pp1-34.
Available at: http://www.justicesolutions.org/art_pub_focus_groups.pdf
- Barrows HS; Tamblyn RM** (1980) *Problem-Based Learning an Approach to Medical Education: Springer Series on Medical Education, vol. 1*. Springer Publishing Company, New York, USA, pp1-201.
Available at: <http://books.google.com/bh/books?hl=en&lr=&id=9u->
- Britain S; Liber O** (2004) *A Framework for the Pedagogical Evaluation of E-learning Environments* (JISC-Commissioned Report).
Available at: http://www.jisc.ac.uk/index.cfm?name=elearning_pedagogy
- Burgess Melissa L** (2009) Using WebCT as a Supplemental Tool to Enhance Critical Thinking and Engagement among Developmental Reading Students. *Journal of College Reading and Learning*, **39** (2): 9-33.
Available at: <http://www.freepatentsonline.com/article/Journal-College-Reading-Learning/198472014.html>
- Corwin Sara J; Frahm Kathryn; Ochs Leslie A; Rheume Carol E; Roberts Ellen; and Eleazer G Paul** (2006) Medical Student and Senior Participants' Perceptions of a Mentoring Program Designed to Enhance Geriatric Medical Education. *Gerontology & Geriatrics Education*, **26** (3): 47-65.
Available at: http://www.tandfonline.com/doi/abs/10.1300/J021v26n03_04#.U-stdtjfqUk
- Dent EB; Goldberg SG** (1999) Challenging 'Resistance to Change'. *Journal of Applied Behavioral Science*, **35** (1): 25-41.
Available at: <http://jab.sagepub.com/content/35/1/25.short>
- Freire Paulo** (1970/1993) *Pedagogy of the Oppressed*. The Continuum International Publishing Group Ltd, Bloomsbury Academic, London, UK.
Available at: <http://www.books.google.com/bh/books?id=xfFXFD414ioC&dq=Pedagogy+of+the+>
- Freiermuth Mark R; Huang Hsin-Chou** (2012) Bringing Japan and Taiwan Closer Electronically: a Look at an Intercultural Online Synchronic Chat Task and its Effect on Motivation. *Language Teaching Research*, **16** (1): 61-88.
Available at: <http://ltr.sagepub.com/content/16/1/61.short>
- George Daniel R; Stuckey Heather L; Dillon Caroline F; and Whitehead Megan M** (2011) Impact of Participation in Time Slips, a Creative Group-based Story Telling Program, on Medical Student Attitudes toward Persons with Dementia: A Qualitative Study. *Gerontologist*, **51** (5): 699-703.
Available at: <http://gerontologist.oxfordjournals.org/content/early/2011/06/10/>
- Glazer E** (2006) Problem-based Learning Instruction: E-Book. In: **Michael O** (ed.), *Emerging Perspectives on Learning, Teaching and Technology*. University of Georgia, Georgia, USA. Available at: <http://www.coe.uga.edu./epltt/ProblemBasedInstruct.htm>
- Hennink Monique M** (2007) *International Focus Group Research: a Handbook for the Health and Social Sciences*. Cambridge University Press. Cambridge, UK, pp1-246.
Available at: http://www.langtoninfo.com/web_content/9780521845618_frontmatter.pdf
- Hmelo DE; Ferrai M** (1997) The Problem-based Learning Tutorial: Cultivating Higher Order Thinking Skills. *Journal for the Education of the Gifted*, **20** (4): 401-422.
Available at: <http://eric.ed.gov/?id=EJ553976>
- James Cheaney; Thomas S Ingebritsen** (2005) Problem-based Learning in an Online Course: a Case Study. *The international Review of Research on Open and Distance Learning*. **6** (3):
Available at: <http://www.irrodl.org/index.php/>

- Kozol J** (1985) *Illiterate America*. Garden City, NY: Anchor Press, Doubleday, USA, pp1-270. Available at: <http://www.worldcat.org/title/illiterate-america/oclc/11211014>
- Ktoridou Despo; Eteokleous Nikleia; and Zahariadou Anastasia** (2012) Exploring Parents' and Children's Awareness on Internet Threats in Relation to Internet Safety. *Campus-Wide Information Systems*, **29** (3): 133-143. Available at: <http://www.emeraldinsight.com/journals.htm?articleid=17038666>
- Lam TP; Irwin M; Chow LW; and Chan P** (2001) The Use of Focus Group Interviews in Asian Medical Education Evaluative Research. *Medical Education*, **35** (5): 510-513. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/11328523>
- Lo Hao-Chang** (2009) Utilizing Computer Mediated Communication Tools for Problem Based Learning. *Educational Technology and Society*, **12** (1) 205-213. Available at: http://www.ifets.info/index.php?http://www.ifets.info/abstract.php?art_id=920
- Loveless Douglas J; Sturm Debbie C; Guo Chengqi; Tanaka Kimiko; Zha Shenghua; and Berkeley Elizabeth V** (2013) Cross-disciplinary Collaboration to Engage Diverse Researchers. *Journal of Faculty Development*, **27** (2): 11-18. Available at: <http://www.eric.ed.gov/?id=EJ1011259>
- Lu Jingyan; LajoieSusanne P; and Wiseman Jeffrey** (2010) Scaffolding Problem Based Learning with Computer Supported Collaborative Learning CSCL Tools. *International Journal of Computer-Supported Collaborative Learning*, **5** (3): 283-298. Available at: <http://www.ijcscl.org/>
- Madriz E** (2003) Focus Groups in Feminist Research. In: **Denzin NK; and LincolnYS** (eds), *Collecting and Interpreting Qualitative Materials, 2nd ed*. Thousand Oaks, CA: Sage Publications, London, UK, pp363-388. Available at: <http://www.karnacbooks.com/Product.asp?PID=89960>
- Managheb S E; Zamani A; Shams B, and Farajzadegan Z** (2012) The Effect of Communication Skills Training by Video Feedback Method on Clinical Skills of Interns of Isfahan University of Medical Sciences Compared to Didactic Methods. *Health Education Journal*, **71** (5): 546-552. Available at: <http://www.intl-hej.sagepub.com/content/71/5/546>
- Master Peter** (1993) A Contrastive Study of Determiner Usage in EST Research Articles. *Online Submission, Paper presented at the Teachers of English to Speakers of other Languages (TESOL) Convention (Atlanta, GA, 1993)*, Georgia State University, Atlanta, Georgia, USA. Available at: <http://www.eric.ed.gov/>
- Merton RK** (1987) The Focused Interview and Focus Groups. *Public opinion Quarterly*, **51** (4): 550-566. Available at: <http://www.amazon.com/Focused-Interview-Robert-K-Merton/dp/0029209862>
- Mhairi M** (2000) Using WebCT to Extend Learning in Graduate Educational Technology Courses. In: **Crawford C** (ed.), *Proceedings of Society for Information Technology and Teacher Education International Conference*, Chesapeake, VA: AACE, USA. pp686- 691. Available at: <http://www.docstoc.com/docs/93707857/Using-WebCT-to-Extend-Learning-in-Graduate-Educational-Technology>
- Mike M; Steve M; Danielle H; and Annette W** (2006) Participation in Online Problem Based Learning: Insights from Postgraduate Teachers Studying Through Open and Distance Education. *Distance Education*, **27** (3): 331-353. Available at: <http://www.tandfonline.com/doi/pdf/10.1080/01587910600940422#.U-8aydjfqUk>
- Nestel Debra; Ivkovic Amelie; Hill Robyn A; Warrens Anthony N; Paraskevas Paraskeva A; McDonnell Jacqueline A; Mudarikwa Ruvimbo S; and Browne Chris** (2012) Benefits and Challenges of Focus Groups in the Evaluation of a New Graduate Entry Medical Program. *Assessment &*

- Evaluation in Higher Education*, 37 (1): 1-17.
Available at: <http://www.tandfonline.com/doi/full/10.1080>
- Olwsya Shipova; Helen Manchester; and Sue Ralph** (2005) The Teacher's Role in Using WebCT as a Communication Tool with Postgraduate Students. *The Twelfth International Conference on Learning 11-14 July 2014*, Faculty of Education, University of Granada, Granada, Spain.
Available at: http://www.105.cgpublisher.com/submission_guidelines.html
- Repman Judi; Zinskie Cordella; Carlson and Randal D** (2005) Effective use of CMC Tools in Interactive Online Learning. *Computers in the Schools*, 22 (1/2): 57-69.
Available at: http://www.tandfonline.com/doi/abs/10.1300/J025v22n01_06?journalCode=w cis20#.U--KstjfqUk
- Salminen T; Marttunen M; and Laurinen L** (2010) Visualizing Knowledge from Chat Debates in Argument Diagrams. *Journal of Computer Assisted Learning*, 26 (5): 379-391.
Available at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2729.2010.00354.x/abstract>
- Shield Renee R; Farrell Timothy W; Nanda Aman; Campbell Susan E; and Wetle Terrie** (2012) Integrating Geriatrics into Medical School: Student Journaling as an Innovative Strategy for Evaluating Curriculum. *The Gerontologist*, 52 (1): 98-110.
Available at: <http://www.ncbi.nlm.nih.gov/pubmed/21911847>
- Smith J; Hurley L** (1996) *Tutoring for achievement: Skills*, FEDA and Learning Partners.
Available at: http://www.bookshop.blackwell.co.uk/jsp/display_product_info.jsp?isbn=9781899692118
- Stewart DW; Shamdasani PN** (1990) *Focus Groups: Theory and Practice. Applied Social Research Methods Series, vol. 20*. Sage Publications, Newbury Park, CA.
Available at: <http://www.sagepub.com/books/ProdDesc.nav?prodId=Book239690>
- Stewart Terry M; MacIntyre William R; Galea Victor J; and Steel Caroline H** (2007) Enhancing Problem-based Learning Designs with a Single e-Learning Scaffolding Tool: Two Case Studies using Challenge FRAP. *Interactive Learning Environments*, 15 (1): 77-91.
Available at: http://www.researchgate.net/publication/43471734_Enhancing_problem-
- Swan K** (2003) Learning Effectiveness: What the Research Tells us. In: **Bourne J; and Moore JC** (eds), *Elements of Quality Online Education, Practice and Direction*. Olin College Sloan C, Sloan Center for Online Education, Needham, USA, pp13-45.
Available at: <http://cguvara.commons.gc.cuny.edu/files/2009/09/learning-effectiveness.pdf>
- Tham Cjee Meng; Werner Jon M** (2002) *Designing and Evaluating e-Learning in Higher Education: A Review and Recommendations. The Management Education: Teaching & Instruction Track of the 2002 Midwest Academy of Management*. Sage Publications Ltd, London, UK.
Available at: http://www.academia.edu/2517544/Designing_and_evaluating_e-learning_in_higher_education_A_review_and_recommendations
- Tynan AC; Dryton JL** (1989) Conducting Focus Groups: A guide for First Time Users. In: **Hayes TJ; & Tatham CB** (eds), *Focus Group Interviews: A Reader 2nd ed*. American Marketing Association, Chicago, USA, pp30-34.
Available at: http://www.researchgate.net/profile/Caroline_Tynan?ev=pub_ext_doc_dlex&origin=publication_detail
- Wilkinson S** (2004) Focus Groups: A Feminist Method. In: **Hesse-Biber SN; & Yaiser ML** (eds), *Feminist Perspectives on Social Research*. Oxford University Press, New York, USA, pp271-295.
Available at: <http://www.amazon.com/Feminist-Perspectives-on-Social-Research/dp/B00DT6APES>