Palestinian Faculty Development Program (PFDP)

Academic Colloquium 2010
Building Partnership in Teaching Excellence

Ramallah Cultural Palace, Ramallah
July 31st –August 1st, 2010

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DAY ONE: SATURDAY JULY 31st, 2010

09:00 – 09:30 am	**Registration**	
09:30 – 09:40 am	**Opening**: Master of Ceremonies; Mr. John FitzGibbon; PFDP Chief of Party	
09:40 – 09:50 am	**Official Welcome:** Her Excellency Ms. Lamis Al-Alami; Minister of Education and Higher Education	
09:50 – 10:00 am	**Official Welcome:** Ms. Karen Exel; Director of Education Development Office/USAID West Bank and Gaza	
10:00 – 10:10 am	**Official Welcome:** Dr. Joe Glicksberg; Program Manager/Open Society Institute	
10:10 – 10:20 am	**Official Welcome:** Mr. Steven Keller; Country Director/AMIDEAST	
10:20 – 11:20 am	**Keynote Speaker:** Dr. Aziza Ellozy; Director of the Center for Learning and Teaching, Associate Dean/the American University of Cairo **Address:** Towards New Teaching and Learning Opportunities	
11:20 – 11:45 am	**COFFEE BREAK**	
11:50 – 01:00 pm	**Joint Presentation 1** Striving for Excellence in Teaching: A Case Study of the Multi-Strategy Approach at the University of Washington **Presenters**: Ziad Zaghrout in collaboration with Tyler Blake Davis University of Washington	
01:00 – 01:55 pm	**LUNCH**	
02:00 – 03:10 pm	**Joint Presentation 2** Integrating Serious Games in Higher Education Programs **Presenters**: Bilal Younis in collaboration with Dr. Christian Sebastian Loh Southern Illinois University Carbondale	
03:10 – 04:00 pm	**Breakout Session 1** Our Need for Competency Based Learning… Hope for Change…. **Presenter**: Dr. Mu'men Al-Badarin Bethlehem University	**Breakout Session 2** Using E-Assessment Structural Communication Grid Test (SCGT) to Assess High Levels of Thinking Skills **Presenter**: Dr. Randa Najdi in collaboration with Dr. Samir Najdi Al-Quds Open University
04:00 – 04:50 pm	**Joint Presentation 3** Bridging the Gap between Academics and Practitioners: Graduate Certificate Programs **Presenter**: Dr. Mohammad Awad in collaboration with Dr. Kimberly A. Aaron University of Dallas	
07:00 – 08:30 pm	**Conference Dinner at the Grand Park Hotel & Resort** **Presentation of Teaching Excellence Awards**	

DAY TWO: SUNDAY August 1st , 2010

09:00 – 09:15 am	**Opening: re-cap of previous day**	
09:15 – 10:25 am	**Joint Presentation 4** Teacher Professional Development Programs in Palestine: Changing Beliefs and Practices **Presenters**: Dr. Ola Khalili in collaboration with Dr. Gretchen B. Rossman	
10:25 – 11:15 pm	**Breakout Session 3** Building Cultural Awareness through English Grammar Teaching: the Case of the English Modals **Presenter**: Dr. Anwar Abdelrazeq Birzeit University	**Breakout Session 4** Factors Affecting Adoption of the E-Learning Paradigm: Perceptions of Higher Education Instructors in Palestine **Presenter**: Dr. Khitam Shraim Birzeit University
11:15– 11:35 am	**COFFEE BREAK**	
11:40 – 12:50 pm	**Joint Presentation 5** Integrating Multiple Epistemologies in the Teaching and Practice of Inquiry at the University Level **Presenters**: Dr. Ayman Khalifah in collaboration with Dr. Sharon F. Rallis University of Massachusetts-Amherst	
12:50 – 01:45 pm	**LUNCH**	
01:50 – 03:00 pm	**Joint Presentation 6** Teaching Decision Making: Providing Hands-on Geographic Information System (GIS) Education to Support Urban Planning Research **Presenter**: Dr. Ruth L. Steiner in collaboration with Abdulnaser Arafat University of Florida	
03:00 – 03:50 pm	**Breakout Session 5** Quality Indicators to Assess Academic Achievements of University Students from the Viewpoint of Palestinian Academics **Presenters**: Dr. Mohammad A. Shaheen & Dr. Adel A. Rayyan Al-Quds Open University	**Breakout Session 6** Teacher- Science Partnership **Presenter**: Dr. Rola Jadallah Arab American University Jenin
03:50 – 4:40 pm	**Breakout Session 7** Assessment of the Practical Training Requirement in Engineering Education in Palestinian Universities **Presenters**: Dr. Riyad Abdel-Karim & Dr. Samir Helou An-Najah National University	**Breakout Session 8** Innovative Teaching: Using Different Approaches and Experiences in Teaching a Course at Birzeit University **Presenter**: Dr. Aqel Abu-Qare Birzeit University
04:40 – 05:15 pm	**Evaluation & Closing**	

Keynote Speaker

Palestinian Faculty Development Program (PFDP)
Academic Colloquium Presentations
July 31st – August 1st, 2010

Keynote speaker; Dr.Aziza Ellozy

Towards New Teaching and Learning Opportunities

There is no doubt that the teaching and learning landscape has undergone a paradigm shift in the last 30+ years as a result of pedagogical and technological transformation. On the one hand, research findings in cognitive science has shed light on how students learn and has shown that methods promoting active learning, where learning occurs through interaction and collaboration with other learners and instructors, were more successful than the traditional lecture delivered to passive students. On the other hand, this new "learning" paradigm was mirrored by the paradigm-altering information, communication and learning technologies. With so many ways of communicating, of collaborating, and of creating knowledge, we are potentially freed from the necessity of a singular approach to teaching and learning. The "traditional classroom" with one speaker and many listeners is no longer the only option. If we add the characteristics of today's learners, we find that we have a totally different set of requirements to fulfill our educational mission than we did just 15 years ago.

The result is that teachers can no longer do it alone. This presentation will focus on the challenges and successes of preparing and supporting faculty for this changing teaching and learning landscape. The focus will be on the experience of the American University in Cairo and on the role of its Center for Learning and Teaching.

Aziza Ellozy;
Dr Ellozy is the founding director of the Center for Learning and Teaching (CLT, Sept.2002) at the American University in Cairo, Egypt. She is also the Associate Dean for Learning Technologies. Prior to joining AUC, Professor Ellozy was a tenured faculty member at Fordham University in New York in the department of Natural Sciences, where she taught Organic and General Chemistry, as well as interdisciplinary science courses in the Core Curriculum. As a teacher and researcher, she was an early adopter of technology, and has since become an advocate for its effective application in education.

Dr. Ellozy received her BSc in Chemistry, a MSc. in Solid State Science from the American University in Cairo, and a PhD in Materials Engineering from the University of North Carolina (1973). She was recently awarded the President's Distinguished Service Award. Her research Interests include faculty development; improvement of teaching and learning, applications of educational technology in the curriculum, assessment of teaching and learning.

Joint Presentation 1

Striving for Excellence in Teaching: A Case Study of the Multi-Strategy Approach at the University of Washington

This paper is grounded in education theory and provides a case study of how the University of Washington uses diverse tools to improve the quality of teaching within the institution. It will identify and explore four types of mechanisms used to ensure teaching excellence at UW. Not every tool available at UW is appropriate for use in other academic institutions. The aim of this study is to identify a typology of evaluation methods and subset of those which are generalized and scalable.

Ziad Zaghrout;
Ziad is a PhD student at Evans School of Public Policy and Management, University of Washington- Seattle. He has two years experience working as an instructor in the Faculty of Economics and Business faculty at Birzeit University during 2004-2006. His research interests span the fields of civil society, non-governmental organizations (NGOs), and development. In particular, he is interested in the role of faith-based organizations (FBOs) in the provision of social services and the initiation of development schemes.

Tyler Blake Davis;
Tyler is a PhD student at the Evans School of Public Policy and Management, University of Washington – Seattle and is a research assistant at the Center for Cost Benefit Analysis, Evans School of Public Policy and Management at the same university. His research interests include international institutional constraints to environmental policy tools, policy tools for natural resource management, and principles and standards for Cost Benefit Analysis.

Joint Presentation 2

Integrating Serious Games in Higher Education Programs

This paper addresses video game characteristics and how these characteristics emphasize learning. The "modding" process and how higher education teachers can modify video games and integrate them into their courses will be addressed. In addition, this paper will present an instrumental design model for teachers to design and modify video games for educational purposes. Different examples of serious video games and their educational applications as interdisciplinary teaching media will be presented.

Belal Younis;
Belal is a PhD candidate in Instructional Technology at Southern Illinois University. He has 13 years of experience working as a lecturer at the Palestine Technical University. His research interests include instructional design for- e-learning, serious games, and virtual environments.

Breakout Session 1

Our Need for Competency Based Learning… Hope for Change

This paper attempts to define competency-based learning in terms of concept, implementation, benefits, pitfalls, and evaluation. It includes models from an Arabic language lesson which shows the fundamental differences between traditional education and competency-based learning.

Mu'men Al Badarin;
Dr. Badarin has been Associate Professor in Arabic Language (Syntax and Morphology) at Bethlehem University since 2001. He got his PhD with honors from Ain Shams University in Cairo in 2006. He has written and published several papers and a book in Arabic grammar and education. His research interests include Arabic grammar and implementing new methods in teaching.

Breakout Session 2

Using E-Assessment Structural Communication Grid Test (SCGT) to Assess High Levels of Thinking Skills

In this paper, researchers try to overcome the difficulties in measuring learners' knowledge of theory by using grid type questions in which data is presented in the form of a numbers grid and learners are asked to select the appropriate boxes from the grids for each question. The grid questions can assess higher thinking processes, and can be easily converted to electronic form providing instant grading.

Randa Najdi;
Dr. Najdi is Assistant Professor at Al-Quds Open University. She has a PhD in Mathematics from the University of IARS in Egypt and has 15 years of experience teaching at Birzeit, AlQuds, and Al-Quds Open universities. Her current research interests include critical thinking, e-learning, and quality in Math education.

Samir Najdi;
Dr. Najdi is Associate Professor with a PhD in Organometallic Chemistry from University of California, Davis (1989). He is currently the Vice President for Administrative Affairs at Al-Quds Open University. His current research interests include critical thinking, e-learning, and quality in education

Joint Presentation 3

Bridging the Gap between Academics and Practitioners: Graduate Certificate Programs

This paper will discuss the use of graduate certificate programs as an alternative approach to addressing the educational needs of professionals who would benefit from an advanced education. Specifically, it will discuss programs that allow practitioners to take graduate classes in particular disciplines (local government management, non-profit management, marketing, etc.) leading to academic certificates in that discipline. By offering graduate certificate programs through local universities, strides can be made in developing the leaders that are needed in our governments, businesses, and non-profit organizations.

Mohammad Awad;
Dr. Awad received his PhD in Public Affairs from University of Texas in May 2010. He is expected to start teaching at Al-Quds Open University in Hebron in the coming fall. He has five years of part-time teaching experience at Al-Quds Open University in Bethlehem, Beit Sahour, and Hebron. His research interests include non-profit management, volunteering and volunteers' management, social capital, human resource management in public and non-profit management.

Kimberly Aaron; (not in attendance)
Dr. Aaron is the Director of the Institute of Public Affairs and Assistant Clinical Professor at the University of Texas in Dallas. She has over 25 years of financial and operational management experience in the private, public, and nonprofit sectors and has consulted extensively with a variety of organizations. She is active in the local community, serving on the boards of several nonprofit organizations, as well as city commissions. She

has a MBA with a concentration in Finance and a PhD in Public Affairs. Prior to joining the university, she was a director in the Financial Advisory Services practice at KPMG.

Joint Presentation 4

Teacher Professional Development Programs in Palestine: Changing Beliefs and Practices

This paper analyzes the process of Mathematics teacher developmental programs in Palestine. It examines the underlying beliefs that these programs have about Mathematics and teaching. The researcher interviewed teachers, principals, supervisors, and policy makers to collect data. In addition, some training materials and policy documents about teacher education, as advocated by the Palestinian Ministry of Education and Higher Education, were studied and analyzed.

Ola Khalili;
Dr. Khalili received her Ed.D in Education in 2010 from University of Massachusetts-Amherst. She taught for one year at Birzeit University. Her research interests include teacher training, teacher beliefs, and teacher change.

Gretchen B. Rossman;
Dr. Rossman serves as Professor of International Education at the Center for International Education at the University of Massachusetts-Amherst where she has taught and advised graduate students for 22 years. Her PhD is from the University of Pennsylvania, as are her MEd and BA degrees. With an international reputation as a qualitative methodologist, she has expertise in qualitative research design and methods, mixed methods monitoring and evaluation, and inquiry in education. Over the past 25 years, she has co-authored nine books, two of which are editions of major qualitative research texts (Learning in the Field, 2nd ed., with Sharon F. Rallis, and Designing Qualitative Research, 5th ed., with Catherine Marshall), both of which are widely used guides for qualitative inquiry. She has also authored or co-authored over 40 articles, book chapters, and technical reports focused on methodological issues in qualitative research synthesis, mixed methods evaluation, and ethical research practices, as well as the analysis and evaluation of educational reform efforts both in the United States and internationally.

Breakout Session 3

Building Cultural Awareness through English Grammar Teaching: the Case of the English Modals

This paper focuses on Native Arabic Speakers' (NAS) use of English modal verbs of obligation and necessity. By spending twelve months as a participant observer of an Arabic community, data was collected to answer three main questions: do NAS use the English modals in different contexts from those of Native English Speakers (NES)? Do NAS in using the English modals rely on Arabic presuppositions or English presuppositions? Does NS usage of the English modals reflect the pragmatic frameworks and norms specific to the English or Arabic environment? Data analysis reveals that NAS use the English modals in contexts where NES do not. It is also found that NAS usage of English modals reflects the pragmatic frameworks and the social norms of their mother tongue. This paper concludes that the use of the English modals in spoken discourse is culture and context-dependent.

Anwar Abdelrazeq;
Dr. Abdelrazeq received his Bachelor of Arts in English Language and Linguistics from An-Najah National University, his Master of Arts in English with emphasis on Teaching English as Second Language (TESOL)/ Curriculum and Instruction, and his Doctorate in Educational Administration and Curriculum and Instruction from Arizona State University in 1993. Currently, Dr. Abdelrazeq is a faculty in the Department of Languages

and Translation at Birzeit University. Prior to that, he worked for 17 years as a teacher and administrator in schools and universities in the USA, Canada, and overseas. Dr. Abdelrazeq is a Fulbright scholar and has presented several papers at local and international conventions and has published many papers. His research interests include educational leadership, educational programs administration and coordination, strategic planning, second/foreign language learning and acquisition and pedagogy, sociolinguistics, curriculum development, and faculty professional development.

Breakout Session 4

Factors Affecting Adoption of the E-Learning Paradigm: Perceptions of Higher Education Instructors in Palestine

This paper presents a study designed to investigate the factors that affect the attitude of academic staff at Birzeit University towards the adoption of e-learning through a proposed Technology Acceptance Model (TAM). An e-learning readiness evaluation can help an organization to identify potential aspects necessary to ensure that e-learning strategies meet learners' needs.

Khitam Shraim;
Dr. Shraim gained a PhD in Web-based Mapping Approaches for e-Participation in Educational Planning from the University of Manchester in 2008. She has an MBA in Finance, a BSc in Computer Science, and a Higher Diploma in Educational Planning from the International Institute for Educational Planning (IIEP) - UNESCO, Paris. She is currently working as an assistant professor at Birzeit University and has a two years teaching experience. Her research interests focus on ICTs for development, particularly in the areas of design, development, and evaluation of e-learning.

Joint Presentation 5

Integrating Multiple Epistemologies in the Teaching and Practice of Inquiry at the University Level

This paper highlights the importance of incorporating multiple theories of knowledge in the teaching and practice of educational research at education graduate programs at the university level. It also suggests some strategies and recommendations for achieving this goal.

Ayman Khalifah;
Dr. Khalifah holds a PhD in International Education attained in 2010 from the University of Massachusetts-Amherst. He has nine years of teaching experience. His research interests include philosophies of education and social sciences, epistemology, culture theories, science and technology and educational development, and cross-cultural educational management and leadership.

Sharon F. Rallis;
Dr. Rallis serves as the Dwight W. Allen Distinguished Professor of Educational Policy and Reform in the School of Education of the University of Massachusetts-Amherst where she teaches courses in inquiry, program evaluation, qualitative methodology, and organizational theory. In 1982, she received her Ed.D. from Harvard University and has been teaching in various capacities for over four decades. As the 2005 President of the American Evaluation Association, Dr. Rallis has conducted over fifty program evaluations and has published extensively about monitoring and evaluation, ethical research practice, methodological issues in qualitative research, as well analyses of leadership and educational reform efforts. Among the ten books she has written are Learning in the Field, 2nd ed with Gretchen Rossman and Leading with Inquiry and Action with Matthew Militello.

Joint Presentation 6

Teaching Decision Making: Providing Hands-on Geographic Information System (GIS) Education to Support Urban Planning Research

The Department of Urban and Regional Planning at the University of Florida uses a distinct approach in the teaching of GIS spatial analysis and modeling to facilitate the decision making process of planners. This paper will introduce these courses and explain how they interact with department research and enhance the capability of future planners. It will also identify the limitations on using these methods in Palestinian universities.

Ruth Steiner;
Dr. Steiner is Associate Professor and Director of the Center for Health and the Built Environment in the Department of Urban and Regional Planning at the University of Florida. She is also the Associate Director of the Center for Multimodal Solutions to Congestion Mitigation and a faculty affiliate in the Transportation Research Center and the School of Natural Resources and Environment. She holds an A.B. in History from Lawrence University in Appleton, Wisconsin, a Master of Business Administration from the University of Wisconsin in Milwaukee and a Master of City and Regional Planning and a PhD in City and Regional Planning from the University of California at Berkeley. Prior to joining the faculty at the University of Florida, she worked as a computer programmer and systems analyst for the First Wisconsin Bank (now called US Bank) and as a policy analyst for the Vermont Public Service Board. Her research focuses on the connection between transportation and land use with particular focus on active modes of transportation – bicycling and walking. She teaches courses on transportation policy and planning, transportation and land use coordination, health and the built environment, and planning research design.

Abdulnaser Arafat; (not in attendance)
Abdulnaser is a PhD candidate at University of Florida and has a MSc in Civil Engineering from An-Najah National University and a graduate diploma in Higher Education from UNRWA/UNISCO Department of Education. He was Head of the Civil Engineering and Surveying Department at Ramallah Technical College-UNRWA (1998-2007), and a part-time instructor of civil engineering and Geography at Birzeit University (2004-2007).

Breakout Session 5

Quality Indicators to Assess Academic Achievements of University Students from the Viewpoint of Palestinian Academics

This study aims to identify key indicators of the quality assessment system applied in higher education institutions, including an assessment system and achievement tests. It proposes a set of recommendations to evaluate the achievement of university students.

Mohammad A. Shaheen;
Dr. Shaheen has a PhD in Education from Ein Shams University in Cairo, 2001. He has 25 years of teaching experience working with higher education institutions. Since 2007, he has been an affiliate with the Education Program at Al-Quds Open University in Hebron. He has 22 published papers and abstracts presented at conferences. His research interests include distance learning, higher education evaluation, curriculum and teaching methods, and quality of education.

Adel A. Rayyan;
Dr. Rayyan is Assistant Professor in Education at Al-Quds Open University. He has a PhD in Curriculum and Instruction (Mathematics) from the Institute of Arab Research and Studies in Cairo (2006). His research interests include mathematics education and distance learning.

Breakout Session 6

Teacher- Science Partnership

This paper addresses the issue of science teaching and aims to identify the needs of science teachers to prepare them for teaching authentic science and proposes a systematic approach beginning with building a partnership between teachers and scientists and integrating both teachers and students in an authentic research environment. Outputs will be modules for in-service and pre-service teacher training that could be integrated into the various national education systems, based on best practices.

Rola Jadallah;
Dr. Jadallah is the Associate Professor in Medical Microbiology at the Arab American University-Jenin. She is also the Chair of Biology and Biotechnology Department and the Coordinator for Higher Educational Diploma Project at AAUJ.

Breakout Session 7

Assessment of the Practical Training Requirement in Engineering Education in Palestinian Universities

This study presents an evaluation of the engineering internship that is mandatory in all departments in the colleges of engineering in Palestinian universities. This study is to evaluate the effectiveness of this practice in fulfilling the objectives of the program. The barriers and obstacles facing this practice are discussed and solutions are recommended.

Riyad Abdel-Karim Awad;
Dr. Awad is an Associate Professor in Structural Engineering at An-Najah National University. He has a PhD in Structural Engineering from Pennsylvania State University, 1989. He is also the President Assistant for the New Campus Affairs. He has been an affiliate with An-Najah since 1989 and was the Dean of the College of Engineering from 1999-2006. His research interests include building materials, reinforced concrete structures, and steel structures. Dr. Awad is the recipient of the Teaching Excellence Award awarded by the Palestinian Faculty Development Program (PFDP) in 2009.

Samir Helou;
Dr. Helou holds a PhD in Civil Engineering from North Carolina State University (1981) and has been with An-Najah National University since then. His research interests include seismic structural analysis.

Breakout Session 8

Innovative Teaching: Using Different Approaches and Experiences in Teaching a Course at Birzeit University

This paper presents a course taught to MBA students in which the teaching approach emphasized development of analytical skills, problem identification, and then exploration of answers through three techniques where students took the time to search, present, discuss, and interact with each other. The course could serve as a model where students take the lead in the class, developing their analytical skills through discussing research articles and by implementing projects that target community needs.

Aqel Abu-Qare;
Dr. Abu-Qare has a PhD in Environmental Chemistry from Glasgow University (1992), a BSC in Chemistry from Birzeit University (1986), and an MBA in International Marketing from Iona College, New York (2006). He is currently a researcher/teacher at Birzeit University. He has published more than 40 papers in international journals in areas of environmental chemistry, pesticides, toxicology, drug development and drug metabolism, and combined exposure to chemicals. His research interests also include global business and marketing and environmental media. In addition, Dr. Abu-Qare is certified in Forensic Toxicology since 1992 from Glasgow University and has a diploma in Journalism from Birzeit University (1996).

Joint Presentation (1)

Submitted for Presentation to the 2010 West Bank Academic Colloquium

Striving For Excellence in Teaching: A Case Study of the Multi-Strategy Approach at the University of Washington

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Introduction

Within the United States quality of instruction varies across higher education institutions. In part, variance in quality may be due to the mission of the university. Larger research institutions mandate the creation of new knowledge within mission statements. In turn, hiring practices reflect an emphasis on research faculty. Selecting individual faculty based upon research qualities can lead to the selection of faculty with excellent research and unknown teaching abilities. To address the challenge of providing quality instruction universities have developed institutionalized mechanisms to provide feedback on teaching. We use the case study of the University of Washington, an "R1" top research university, to explore institutionalized mechanisms provided to faculty for feedback on their teaching. Our research has at least two advantages. First, the use of institutionalized mechanisms facilitates replication; many of the feedback mechanisms used at the University of Washington may be replicated in other universities, including universities in Palestine. Second, by identifying the strengths and weakness of several methods we may facilitate adoption of the most appropriate feedback tool for an individual university. In concert these two advantages may help university administrations identify the best feedback tools for their most salient challenges.

Background and theory

We situate our case study within three types of education theory: multiple intelligence theory, leadership skills theory, and ordered change theory. We contextualize our research in the juncture of these three methods for improving education and reveal how our case study conforms to each framework.

Within the fields of behavioral and cognitive sciences, and more specifically within development psychology, is a trend to recognize multiple types of intelligence (Gardner 1993, 2006). Within the classroom setting the theory of multiple intelligences provides insight to how different types of individuals respond to different types of teaching (Armstrong 2009, Coreil 2003). Theorists identify types of intelligence and suggest teaching practices incorporate methods to best reach individuals with each type of intelligence. Education theory states that individuals learn most efficiently when presented with information in their own style and at their own pace. Broadly, multiple intelligence theory suggests that providing diverse types of instruction is superior to a single type of teaching (Armstrong 2009, Coreil 2003).

Given that multiple methods of instruction facilitate learning for diverse individuals one must next ask: What are the best practices within teach type of instruction? Recent scholarship using a meta-analysis of existing education literature reveals a significant relationship between leadership and student achievement (Waters, Marzano, and McNulty 2003). The framework developed by Waters, Marzano and NcNulty describes specific characteristics of teachers, including knowledge, skills, strategies, and tools that education leaders need to positively impact student achievement. Broadly we refer to these attributes as leadership skills.

Multiple intelligence theory undergirds diverse teaching approaches, and leadership theory identifies skills within teaching approaches; what remains is a method of measuring success, or change in student achievement. An important aspect of education models is the concept of the "order" or magnitude of change. "First-order" change is consistent with prevailing values and norms, meets with general agreement, and can be implemented using people's existing knowledge and skills. A change becomes "second-order" when it is not obvious how it will make things better, it requires people to learn new approaches, or it conflicts with prevailing values and norms. Second-order changes require leaders to work far more deeply with staff and the community. These leaders can disrupt people's sense of well-being and the cooperation and cohesion of the school community. They may confront and challenge expertise and competencies and throw people into states of "conscious incompetence" (Waters, Marzano and McNulty 2003). Second order change requires skilled leadership and is more difficult to achieve, but may result in greater changes and greater improvements. Different perceptions about the implications of change mean that a change that appears to be a solution to one person may appear to be a problem for another. To the degree that individuals in the school or school system hold conflicting values, seek different norms, have different knowledge, or operate with varying mental models of schooling, a proposed change might represent a first-order change for some and a second-order change for others.

In this paper we approach our case study within the context of the three preceding theories: multiple intelligence theory, leadership theory, and ordered change theory. We use a case study with multiple approaches to individuals with multiple types of intelligence, who possess or are aided to acquire a diverse set of skills that result in first or second order change. For this paper we apply education theory to a change in educators themselves.

Context

The University of Washington (UW) in Seattle is a Tier 1 international research institution (U.S. News and World Report 2009). The UW has an annual operating budget of over $3.1 billion and an annual research budget of $1.15 billion (UW Annual Report 2009, U.S. News and World Report 2009). In 2009 the UW had 43,000 students comprised of 32,000 undergraduate students, and 11,000 graduate students (UW Fact Book 2009). The UW is consistently ranked one of the best public universities in the United States (UW Annual Report 2009). To teach this large number of diverse students the UW has 3,900 full time faculty equivalent positions teaching over 6,000 different courses every year in three different campuses (UW Fact Book 2009). Ensuring quality instruction within this diverse setting and across multiple disciplines in an institution dedicated to research is a challenge. This paper addresses how the UW ensures excellence in teaching across these diverse settings.

Research Design

Our research is designed to meet the objectives of the 2010 West Bank Academic Colloquium. Our aim is to identify types of institutionalized mechanisms within the UW and to explore how those are used. To this end our conceptual research question is: How does the University of Washington promote excellence in teaching? To systematize this question we break it into two components: 1) What mechanisms does the UW provide for evaluating teaching that may be replicated? 2) In what replicable way does the UW use the data from the mechanisms to improve teaching?

In 2009 the UW offered 1.7 million credit hours to 29,000 undergraduate students on the Seattle campus (UW Fact Book 2009). Given a large number of courses taught to a large and diverse student body, the UW is faced with a unique challenge to ensure quality across topic areas and student demographic. To meet this challenge the UW has created institutional mechanism for review and development of teaching practices. By nature, these mechanisms must be robust to diverse applications. The UW employs both voluntary and mandatory review of instruction. This paper reviews three education assessment and improvement mechanisms, two which are voluntary and one which is mandatory.

1) Professional Teaching Improvement Consultation (optional) conducted by the UW Center for Instructional Development and Research (CIDR).
2) Professional Evaluations (optional) conducted by the UW Teaching Academy.
3) Student Evaluations (mandatory) conducted by the UW Office of Educational Assessment (OEA).

Research Methods

For this paper we used two research methods: key informant interviews, and review of public documents. We used targeted informant interviews with both participants and administrators of the three feedback programs. We used structured and semi-structured interviews with key informants to identify what services the program offers, how they are evaluated, how this information is communicated to the instructors, and how instructors use the feedback to improve their own teaching. These interviews focused on causal mechanisms for improving instruction.

Our in-depth survey process followed best practices identified by Dillman (2009). Our interviews conformed to the four step process of 1) conducting preliminary interviews with individuals knowledgeable of the subject matter to identify a) terminology, b) likely impediments, c) approaches to indentify interviewees; 2) creating a draft survey which was reviewed by a) independent experts, b) a key informant not included in our sample;

3) testing the survey instrument with a test interviewee which included a) conducting a mock interview, and b) reviewing our interpretations of responses with the interviewee to ensure that their understanding of the question matched our understanding; and 4) conducing post interview review for internal validity including a) following up with interviewees on opaque points of the interview, b) independent transcription of interview notes, c) post transcription review and comparison between researchers (Dillman et al 2009).

All interviews took place within the auspices of Internal Review Board of Human Subjects within the UW and the complete text of our research instrument is included in Appendix A. All interviews took between 100 and 150 minutes during which both researchers took notes and asked questions of the interviewees. All interviews were conducted between the 1st of June and the 18th of June, 2010.

Four this paper we used a purposive sampling method. Our sample was not intended to be random selection. The number of feedback mechanisms for instruction at the UW is insufficient for use of large n statistical analysis. Instead we identified the three most prominent feedback mechanisms available on the UW campus and conducted a census. Our results reflect current practices and application of current education theories in use at the UW.

Interviews

For the professional feedback mechanism we chose the Center for Instructional Development and Research (CIDR). First we met with the director to discuss the nature of our inquiry, discuss the mission of CIDR, and identify ways that CIDR worked with instructors to meet diverse instructional challenges. Next we interviewed an experienced staff member/consultant for CIDR with five years experience, who holds a PhD in education and works directly with faculty to provide feedback on their instruction. We discussed how each of the CIDR feedback mechanisms are coordinated, executed, and communicated to instructors. From CIDR we derived our framework for evaluating types of feedback mechanisms used in this paper.

For the professional evaluations feedback mechanism we interviewed a program manager with six years of experience with the UW Teaching Academy. We explored the various mechanisms used by the Teaching Academy, their strengths and weaknesses, and identified how these fit into the framework from CIDR.

For the student evaluation feedback tool we interviewed the director of the Office for Educational Assessment (OEA). The director has over 30 years experience with the OEA and a PhD in education. During this interview we identified how the OEA feedback mechanisms are coordinated, executed, used within departmental evaluation, and communicated to instructors for their use in improving instruction. We discussed how departmental deans and chairs use OEA information.

Originally we had intended to review a fourth institution, the Classroom Support Services (CSS). Upon review of electronic documents describing their services we excluded CSS from the sample as they do not provide the type of feedback of interest.

Review of Documents

Our second research method was the review of public documents. We reviewed webpages and physical documents between the 1st of April and the 15th of July, 2010. Review of webpages proved invaluable, as mission statements, philosophy of inquiry and explicit detail of services offered by each institution were clearly delineated. Review of documents allowed a check of accuracy; we verified responses of interviewees by cross-checking statements through webpages, program publications and program documentation.

The two webpages of the voluntary feedback mechanisms were especially well developed. These webpages provided links to published journal articles justifying and explaining theoretical frameworks, methods, and services available. The high level of quality may be due in part to the optional nature of the service. The webpages of the mandatory feedback institution was also informative, with links to numerous reports, including those provided to the university administration that describing data collection methods, philosophy and statistical analysis methods.

Findings

A key concept from the director of CIDR is worth repeating: Teaching is a complex activity that cannot be assessed without taking into consideration multiple dimensions. This challenge to better assess teaching quality conforms to education theories of multiple intelligence, diverse leadership skills, and ordered change. Despite the fact that improving teaching is complex, the tools to provide feedback are often one dimensional. According to the director of the OEA some US higher education institutions rely solely on students' perceptions of teaching to assess the quality of instruction. This one dimensional approach is not limited to the US; the same is true of many Palestinian higher education institutions.

Student evaluation methods may include using a predetermined questionnaire, often "multiple choice", which is administered at the end of the academic semester. The director of CIDR and the director of the OEA agree that although this procedure is being used in many academic institutions around the world, faculty members and administrators cannot rely solely on student evaluations to enhance teaching at their institutions. Relying solely upon student feedback fails to provide multiple methods for instructing instructors with multiple intelligences and with diverse leadership skills.

To break from this one-dimensional tool of relying on student feedback CIDR has identified a typology of methods for feedback which, taken together, conform to education theory and provide guidelines for assessing instruction. Each of the CIDR typologies of feedback mechanisms may be thought of as portion of a holistic assessment regime. The assessment pie chart in Figure 1 depicts these mechanisms. Viewed in this way, student ratings are only one source of feedback on the teaching process.

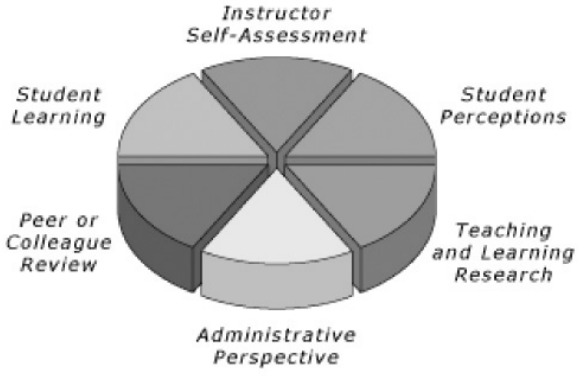

Figure 1: Sources for Data when Assessing Teaching
(Center for Instructional Development and Research 2010a)

Each of the six methods in Figure 1 may be conceived of as a tool for improving instruction. In turn, each of the six methods may be systematized into a source of data for evaluation of instruction. Each method of evaluation is important, but no single type is sufficient to meet the diverse requirements of multiple intelligences theory or develop the diverse leadership skills necessary for second order change.

To demonstrate how this holistic approach functions in an institutionalized setting we use the case study of the three institutionalized feedback mechanisms within our sample. Our case study describes how the three institutions provide some of the six methods from Figure 1.

1. Instructor Self-Assessment

The CIDR consultant stated that before introducing any systematic process to perform an external assessment of an instructors' skills and capabilities the instructor must first assess his or her own teaching. This self review can help pinpoint weaknesses or strengths that can be either addressed or enhanced. The Teaching Academy program manager also stressed the importance of indentifying strengths. The Teaching Academy program manager identified self evaluation as one of the first steps within their programs. The OEA director did not oversee a self evaluation function.

Within the UW there are several ways for teachers to systematically assess their work as instructors. CIDR provides three services to enable self evaluation and the Teaching Academy provides one.

a) Developing a teaching portfolio

A teaching portfolio is a coherent set of material that represents an instructor's teaching practice as related to student learning. "Teaching practice" in this regard extends beyond activities that go into teaching a course to include all activities that enrich student learning (Mues and Sorcinelli 2000). Teaching portfolios vary considerably depending on their purpose, audience, institutional context, and individual needs. Teaching portfolios are typically used for two purposes, which can sometimes overlap: (1) as a developmental process for reflecting on and improving one's teaching; and (2) as an evaluative product for personnel decisions such as tenure, promotion, or a teaching award (Mues and Sorcinelli 2000). CIDR offers the service of working directly with an instructor to conceptualize and develop their teaching portfolio.

b) Reviewing video

CIDR offers the service of videotaping an instructor during their lecture. Viewing videotaped segments can offer teachers an opportunity to observe their actual performance, from the perspective of the student. At least two techniques can be incorporated within this method: (1) Microteaching, and (2) video-critique. Microteaching is a group process involving several instructors. In microteaching instructors view and discuss videotapes of each other giving 3-5 minute presentations. Microteaching enables instructors to:

- focus on practicing teaching skills in a confidential, non-threatening environment
- receive feedback from multiple perspectives
- receive supportive feedback from peers (Center for Instructional Development and Research 2010a)

A second technique associated with videotaping is a video critique where an instructor reviews a videotape of a class she/he is or has been teaching with a CIDR consultant or colleague. According to CIDR's own experience, participating in a video critique enables an instructor to:

- observe his/her own teaching from the student perspective
- focus on specific, in-class teaching behaviors such as question-asking patterns, use of board work, or organization of explanations, and
- construct a picture of the strengths and weaknesses of a particular class session. Working with a CIDR consultant or with a colleague, the instructor may discuss possible strategies for change.

c) Reviewing and assessing their academic courses

CIDR consultants can help in providing assessment at three stages of a course: while an instructor designs his/her course, during the course, and at the completion of the course when teachers evaluate impact and make decisions for the next time they teach. CIDR consultants can contribute to course assessment during these three stages in a variety of ways, such as collecting midterm student feedback, meeting with instructors to review a videotaped class session, or conducting a classroom observation.

d) Faculty Fellows Program

An alternative institutionalized way for instructors to evaluate their own teaching is offered through the Teaching Academy. The Teaching Academy offers four programs to instructors to facilitate improvement in teaching. The Faculty Fellows Program is a week-long retreat for new faculty and is guided by senior faculty. One components of the retreat is the preparation of mock lessons which forces participants to reflect upon their strengths and objectives. Participants are encouraged to:

…prepare a 3-5 minute presentation from a lesson on a key concept/issue covered in one of [their] courses, and reflect on the following questions prior to our meeting: What is/are your instructional objective(s). What goals do you have for student learning? Are there particular aspects of your presentation on which you would like feedback? (UW Teaching Academy 2010)

The structured time of conducting self-assessment is a key component for identifying means of improving instruction. The Teaching Academy offers trial teaching sessions where the "participants briefly teach" their fellow instructors, then discuss how they met their lesson objectives.

2. Student Perceptions

Student perceptions gathered through surveys is one of the most commonly used methods for assessing teaching performance. However, according to the director of the OEA which conducts the surveys, the application of this information must be correctly interpreted to address a limited set of questions. During our interview the director of the OEA cited examples of misuse of student surveys in several departments at the UW and even identified a policy for hiring faculty based on the incorrect application of student surveys. It was the opinion of the director that student evaluations did not improve teaching; rather they are a diagnostic tool to identify strengths and weakness of some teachers.

The traditional way of performing this procedure (i.e. at the end of the academic semester/quarter and using a standard questionnaire) can provide partial insight on the teaching process. The director of the OEA, and the consultant at CIDR agreed that instructors have difficulty making constructive use of their end-of-semester student ratings. According to the CIDR consultant students' answers and comments on the assessment sheets can be informative but they can be puzzling at the same time. Students usually have their own benchmark for assessing an instructors' performance, which in many cases can be different from the benchmarks of the instructors, the dean or the university as a whole. This divergence in perspective can produce a schism between what students and instructors perceive as effective teaching.

Despite the limitations student evaluations can be valuable. CIDR offers several innovative approaches that may better offer insight to the teaching process using student evaluations. The following three approaches use student surveys and other methods for eliciting student feedback to construct wider and more flexible insights derived from student surveys:

a) Confidential time series analysis of students' ratings

CIDR consultants work one on one in a confidential setting to help instructors to analyze student ratings. CIDR consultants offer the service of using a time series of student reviews to:

- identify patterns and themes in student ratings and comments;
- distinguish between student comments that represent an individual student's perspective; and those that represent broader areas for improvement or change;
- make sense of current data in terms of data from previous quarters;
- offering perspective on the effectiveness of changes made as the result of earlier feedback;
- compare median scores meaningfully with those of other instructors at the department, college and institutional level. (Center for Instructional Development and Research 2010a)

b) Design a customized form for collecting students' feedback

There are many ways to get systematic student feedback rather than simply wait for the end-of-semester traditional evaluation results. Some of the techniques employed by CIDR include: collecting in-class written feedback, getting feedback online, and using classroom assessment techniques. Instructors may use this kind of feedback to help inform their decisions about what to address in subsequent class sessions, to help them see how students are experiencing the course, and to help students judge their own progress learning the course material (Center for Instructional Development and Research 2010a).

Collecting in-class written feedback can take the form of brief written surveys conducted in class. Questions can be open-ended, or students can be asked to rate specific features of a class. Questions can address students' perceptions of a class and also what they are learning in it. The same survey can be administered online if the instructor is worried about class time.

c) Arrange a midterm class interview:

CIDR offers a Midterm Class Interview, sometimes referred to as the SGID (Small Group Instructional Diagnosis), which is an open-ended, mid-course oral interview process. In the SGID students discuss their perceptions of the effectiveness of a course, including both its strengths and potential areas for change. SGID is useful for helping instructors in making decisions about their teaching during the remainder of the quarter. Likewise, CIDR research indicates that students also appreciate this opportunity to provide anonymous formative feedback to the instructor while the course is still in session. The SGID allows an instructor to:

- Provide an open-ended forum for students to identify concerns that they think are most important;
- Let students relay their feedback confidentially through a neutral third party (the CIDR consultant);
- Discover student perspectives on the course and make changes, address misunderstandings, or clarify policies before the course is over;
- Confirm impressions that a course is going well;
- Explore aspects of a course that seem to be problematic; and
- Receive more in-depth student feedback than end-of-quarter student evaluations typically provide (Center for Instructional Development and Research 2010a).

d) Office of Educational Assessment:

An alternative to CIDR's use of student feedback comes from another institution at the UW. Perhaps the most comprehensive institution that collects, interprets, and communicates student feedback is the OEA. The OEA utilizes one of 13 different multiple choice forms for most classrooms on the UW campus. Each form is filled out according to specific and identical instructions. These forms ask students to rate the overall quality of the course, the specific characteristics that contribute to the effectiveness of the course, and the role of the course within the student's degree. The OEA has been using the same questionnaires for the past 12 years, and has been using some variant of these forms for over 40 years. The net result is a multi-million observation database of all instructors for all classes, controlling for all degree objectives of student participants. The OEA prepares statistical analysis on student responses to provide information on the course and the instructor. These reports are sent to the individual instructor and to the dean or chair of the department. Instructors are evaluated according to their performance on OEA surveys by using median and percentile rankings. Examples of the OEA reports are available online (Office of Educational Assessment 2010). The dean or chair of the department may use the OEA reports to identify strong instructors, and instructors in need of assistance. Administrators may propose use of the Teaching Academy or of CIDR for instructors that receive low OEA scores.

3. Teaching and Learning Research

University instructors interested in researching the process of learning and teaching may conduct research utilizing their classes and students as primary data. For these instructors CIDR may offer the following services:

a. Consulting in teaching and learning

As a UW Center, CIDR provides customized, confidential services for UW departments, faculty, and teaching assistants who have questions related to teaching and learning. Consultations begin with the questions that teachers bring to CIDR then help explore the issues systematically, identify relevant resources, and assist teachers as they plan and assess their teaching. The extent of a consultation with CIDR varies in response to the teacher's needs. A consultation might entail a single meeting focused on a specific teaching or learning question or it might be a semester-long series of meetings revolving around a longer-term project such as creating a new course or revamping the department's curriculum (Center for Instructional Development and Research 2010b).

b. CIDR Resource Collection

An additional research based method for improving instruction is to consult existing literature and theory. The CIDR provides research materials in a centralized reading room that includes a collection of books, periodicals, and videos on teaching and learning. The Resource Collection at CIDR's reading room includes materials on teaching and learning, assessment, TA preparation, and improving teaching portfolios. The Resource Collection also includes materials on teaching in specific disciplines such as math, science, engineering, and the humanities.

c. Scholarship of teaching and learning

CIDR offers a unique approach to improving instruction within research instituionsl. As opposed to drawing barriers between the research and teaching objectives of faculty, CIDR explores the methodological

similarities. The result is a focus a program focusing on the "scholarship of teaching and learning". Eileen Bender and Donald Grey (1999) describe the scholarship of teaching in this way:

"... the scholarship of teaching is not merely teaching our scholarship. Nor is it simply teaching well. ...The scholarship of teaching means that we invest in our teaching the intellectual powers we practice in our research..."

Pat Hutching and Lee Shulman (1999) also argue that the scholarship of teaching and learning is more than simply teaching well, and that it leads to particular kinds of outcomes:

"[the scholarship of teaching and learning is]... public, open to critique and evaluation, and in a form that others can build on ... in which faculty frame and systematically investigate questions related to student learning - the conditions under which it occurs, what it looks like, how to deepen it, and so forth - and do so with an eye not only to improving their own classroom but to advancing practice beyond it."

Constructive efforts to improve teaching and learning have resulted in a wide range of challenging second order learning questions: Does online discussion improve students' understanding of reading materials? Does the lecture format of a course change the learning experience? What are the learning outcomes of writing assignments? CIDR's scholarship of teaching and learning program engages the instructor in fundamental questions about learning and challenges them to approach instruction with the same dedication as research. The CIDR objective is to encourage instructors to systematically examining the phenomena of learning (Center for Instructional Development and Research 2010c).
Ideally, the CIDR process will inform the teaching experiences of individual instructors by revealing how other scholars and teachers have addressed similar challenges. The epitome of the scholarship of teaching and learning is using and creating scholarly material that links different teaching methods with their learning outcomes. This CIDR program actively engages instructors to recognize and improve on leadership skills that promote diverse learning methods consistent with multiple intelligence theory.

4. Administrative Perspective

Teacher efforts are assessed within the general strategic objectives of the department. When framed this way teaching effectiveness is a two-way process that involves both the instructor finding ways to demonstrate his teaching effectiveness and the department leadership developing ways to promote more effective teaching in the department (Center for Instructional Development and Research 2010d). The ability of an administrator to identify effective teaching and departmental leadership is not uniformly distributed. CIDR offers consultation to administrative leaders to improve their ability to accurately identify excellence in teaching. CIDR offers the following resources for department leadership to fill this gap:

a) Administrative Guidelines and Resources for Evaluating Teaching

In a confidential consultation, CIDR offers to clarify and interpret departmental guidelines on teaching standards. This is an essential task, given that departmental teaching standards constitute the framework that chairs, deans, and others in the position of making decisions rely upon for assessing instruction. Understandably, these guidelines differ among institutions, yet their mere existence and enforcement can contribute positively to the enhancement of teaching excellence at local universities by establishing clear benchmarks and expectations.

b) Evaluative Teaching Portfolios (Promotion and Tenure)

Essential to the tenure process is the Evaluative Teaching Portfolio. Instructors present these portfolios to their dean to provide evidence for a decision about their careers. Portfolios may be based on materials from the developmental teaching portfolio discussed above, but are often shorter and selective (Center for Instructional Development and Research 2010e). Understandably, preparing an Evaluative Teaching Portfolio can be a difficult process for junior faculty members. CIDR offers a consulting opportunity before and during

the process. CIDR consultants can identify what contributes to the portfolio as well as how to best present existing evidence of teaching ability.

c) Program or Curriculum Assessment

In addition to working with individual instructors on the assessment of their courses, CIDR consultants are available to consult with departments on the assessment of academic programs and curriculum. Consultants help departments to develop overall program assessment strategies, identify sources of evidence for demonstrating program effectiveness, and in some cases, provide help in gathering program assessment data. CIDR also consult with departments on interpreting, reporting, and responding to program assessment data that has been collected (Center for Instructional Development and Research 2010f).

5. Peer or Colleague Review

Peer Review of Teaching is a form of assessment in which instructors give feedback to one another. Collaboration with other colleagues' feedback and review is one of the most efficient methods for enhancing teaching excellence. Instructors share leadership skills and identify strengths of their peers. Instructors may share strategies to approach diverse learning styles, and share learned leadership skills. By working together instructors may draw upon the cumulative experiences of multiple colleagues a rich source for identifying best practices. New faculty members can tap this wealth of resources to develop their own skills and approaches. CIDR facilitates collaboration by systematically identifying ways for colleagues to collaborate, observe, and provide feedback on teaching.

CIDR facilitates peer review to offer the unique perspective of another instructor who knows the course and the material well, and who has experience working with students. Collaboration positions the peer reviewer to focus on essential features of teaching and learning (Center for Instructional Development and Research 2010g). Peer review of teaching may be used either for improvement of teaching or for formal evaluation of teaching effectiveness, though these tasks are best addressed separately.

6. Student Learning

The most basic component of evaluating quality of instruction is the outcome of teaching- student learning. Better learning is the aim of teaching initiatives. For this reason instructors need to routinely receive information on student learning. The following three strategies can improve the process of student learning:

a) Consult on Course, Syllabus, or Assignment Design

Teaching a new course, considering changes in an existing course, or finding more innovative ways to evaluate students' learning is not a simple task. Writing a syllabus involves several iterations and revisions to focus the material and methods to essential concepts. CIDR consultants can help teachers in systematically think through their priorities for a course and articulate those priorities in their syllabus in a clear and compelling way. CIDR can also help in crafting assignments that focus students' effort on important skills and concepts, help teachers anticipate student questions, and work with them to devise appropriate and efficient strategies for giving students feedback on their learning (Center for Instructional Development and Research 2010h).

b) Learn more about Diversity and Inclusive Teaching Practices

Inclusive teaching "begins with the premises that learning starts where the students are, and that effective teaching is responsive to the various experiences, backgrounds, and identities that students bring to the classroom" (Center for Instructional Development and Research 2010i). An awareness of who students are and how they learn becomes an important step in designing activities for classroom learning. Awareness of character of students is essentially a recognition of the importance of multiple intelligences. An essential premise of inclusive teaching is that students should not feel excluded from learning simply because of who they are (Ibid). Student/instructor relationships, as well as student/student relationships, should be carefully considered with a focus on developing a community of learners in which all students are welcome to

participate. Inclusive teaching, therefore, challenges instructors to plan with diversity of students in mind and to utilize a range of materials, approaches, and activities.
Inclusive teaching means "intentionally bringing student experiences into the classroom, and recognizing the different experience, power, and privilege of diverse populations in relation to the subject matter being taught. Instructors and students alike are challenged to honestly confront and critically think about the contradictions and possibilities inherent in a complex understanding of the world -- both the social world and our disciplinary worlds" (Ibid).

c) Using Writing as a Teaching Strategy

Integrating writing into an academic course is a powerful way to engage students in thinking and learning (Center for Instructional Development and Research 2010j). Yet, asking students to simply submit writing assignments without a systematic vision of how these assignments may enrich the learning process may dampen students' enthusiasm for the course and increase the workload on the teacher. In order to circumvent any negative consequences, CIDR has established specific expertise for helping teachers in:

- designing writing assignments
- responding to student writing
- assessing student writing
- creating alternatives to papers (Ibid)

CIDR consultants work with instructors to craft writing assignments that match the learning goals for the course in an efficient manner.

Conclusions

Educational theory suggests that individuals are more responsive to information communicated in a manner they best understand. Applying this theory to instruction at the university level suggests that the use of multiple methods of communicating to instructors is superior to a single feedback mechanism. Promoting excellence in teaching is a function of learning instructional and leadership skills. In tandem, multiple approaches and diverse leadership skills culminate in first and second order learning.
Within the UW we found six different types of institutionalized feedback: 1) Self-assessment; 2) Student learning; 3) Peer or colleague review; 4) Administrative perceptions; 5) Teaching and learning research; and 6) Student perceptions. Within these six types are over 20 individual mechanisms in three independent institutions. Our findings suggest that individual institutions within a university may specialize in one or more of the six feedback mechanisms, but not all. We find that multiple, overlapping institutions provide a variety of platforms for our six types of feedback mechanisms. The diversity in instructional settings (e.g. lectures, labs, seminars) promotes diverse approaches to feedback mechanisms. These multiple approaches culminate in a broad platform for promoting excellence in teaching.
The challenge for Palestinian practitioners is to replicate mechanisms within the UW they will find most useful. One benefit of institutionalized processes is facility of replication. The question remains: What are the specific challenges to replicating US strategies in Palestine?

Application to the Palestinian Setting

This paper identifies how the UW approaches the topic of teaching excellence. Can the Palestinian academic institutions take advantage of the learned experience of the UW or any other university? Or are the above evaluation mechanisms and innovative teaching initiatives out of reach for Palestinian faculty members, scholars, and university administrators? The Palestinian academic environment has its own unique characteristics that may inhibit the application of some of the methods presented in this paper. For example, many Palestinian academic institutions lack any administrative policies and guidelines for ensuring teaching excellence at their departments, which in turn renders any individual attempts to raise the standards of teaching irrelevant. Moreover, most Palestinian universities are cash-strapped and they lack the resources available for their American counterparts. However, of most of the discussed methods applied in the UW

to ensure and enhance teaching excellence do not require the investment of large sums of money. On the contrary, given the presence of a professional team of experts in education, one can introduce a wide spectrum of schemes at local universities even with limited amounts of funding. Finally, the efforts of the Open Society Institute (OSI) and the AmidEast to send Palestinian faculty members to American universities to achieve their PhDs or receive training in specific fields is creating a rich source of professionals from which local universities can tap to enhance the standards of their teaching.

Future Research

This paper suggests that Palestinian universities may benefit from the adoption of the six types of feedback mechanisms used at the UW, and from replication of some of the institutions which provide these mechanism. However, not all of the individual feedback mechanisms will be appropriate for use in Palestine. Future research should follow upon this work and identify specific barriers to adoption, and identify specific institutions for replication in Palestine. The UW context is different from Palestine, but many of the lessons learned from the UW may apply. Future research should include a comparative case study which identifies possible pitfalls and areas of strength. Our work is the first step in the process, and will require additional research to prove most effective for application in the Palestinian context.

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Appendix A: Survey Instrument for targeted informant interviews.

Surveys for Excellence in Teaching Research

Survey Number _____
Department _____
Location _____
Name of Interviewer/s _____

You are being asked to participate in a survey on how the University of Washington ensures excellence in teaching. This survey aims to collect procedural information about institutionalized mechanisms for activities associated with improving teaching. The information we will collect includes mechanisms for collecting data on teaching, methods of analyzing this data and procedures for delivering feedback to teachers. The goal of this survey is not to identify the skills of any one teacher or even the strengths of any one department. We will not collect information on any single individual; we are interested in institutional procedures and changes to institutional procedures. You will notice no questions about specific salaries or occupation. Results of this survey will be combined with other similar surveys and may be presented in academic conferences and in peer reviewed journal articles. You will receive advance copies of any materials submitted for publication. May I interview you?

Directions for Interviewer

We will only use a relatively simple set of questions for each of the four areas of interest. No personal data is collected on the individual other than their title and years of experience. We want to get a picture of how they institutionalize mechanisms for feedback on teaching. We want to capture quotes that convey the general mechanisms, their strengths and weaknesses.

Here are the overarching research questions to bear in mind during interviews:

1) What mechanisms does the UW provide for evaluating teaching?
2) How does the UW analyze the data from the review mechanisms?
3) How are results communicated to instructors?
4) How do instructors use this information to improve teaching?

The survey below is to be used in each of the four settings:

Student Evaluations (mandatory)
Professional Evaluations (mandatory)
Teaching Improvement Professionals (optional)
Technological Options (optional)

Survey Instrument

Interviewee and Institutional Background
Characterization of the interviewee and their expertise:
Educational background
Professional background
Years of experience
Title

Responsibilities

Characterization of the institution:
Housed in what institution
Years of existence
Number of sta
Mission Statement/Objective

Section 1. How does your department evaluate teaching?

How many ways does your department evaluate teaching?
Please give a short description of each.
Are these mechanisms of choice, or are they required?

Who directs the mechanism? (who does the evaluation?)

Are these qualitative or quantitative, or both?

Please describe the qualitative evaluation process.

Please describe the quantitative evaluation process.

How are the forms distributed?
How are they collected?
What directions are given to students?
What directions are given to professors?

Do you think these evaluation process could be improved? If yes, then how?

Who participates in these instruments? Students, other professors, the instructors, the dean…

Please describe the participation rate:
What is the response rate?
Do you know why students choose to participate?
Do you know why students choose not to participate?

Is participation mandatory for professors?

Where do the instruments take place?

In the classroom?
In a separate department?

Do you think these evaluation process could be improved? If yes, then how?

Ask how much time is spent on the design and implementation of the instruments?
What percentage of your total work load would you estimate is spent on design and implementation of the instruments?

Section 2. How is information from these instruments analyzed?

Please describe how the qualitative and quantitative information is analyzed:
How is the written form analyzed?
How is the scan form analyzed?

What is good about this method?

What is weak about this method?

Why is this method used?

Do you think that there is a better way to analyze the data?

Ask how much time is spent on this analysis?
What percentage of your total work load would you estimate is analysis of this data?

Section 3. How is the information conveyed back to the instructor?

Describe how you provide the feedback to instructors:

Are there any specific methods used to inform the instructor about his/her feedback results?

Is there more than one mechanism to provide feedback?

Why does the department convey the information in this way?

Do you think there is a feedback mechanism preferred by instructors?

Is it an optional procedure or does each instructor receive feedback?

When are feedback mechanisms employed?

Is there a schedule; biennial, annual or biannual basis?

Is there an opt-out option?

Is there an opportunity to get more frequent feedback?

Ask how much do you spend on giving feedback?

What percentage of your total work load would you estimate is spent on giving feedback?

Section 4. Why does your program use these feedback mechanisms?

Why does your department use these evaluation methods?

Why does your department use these feedback mechanisms?

Why do you think that they help?

How do you think that they help?

How do you think that the feedback was taken into account?

How could we improve the way that information is used?

Are there any stated goals, mission statements, or institutionalized mechanisms to ensure excellence in teaching?

Diagram 1: An Institutional Feedback Loop: Mechanisms to Enhance Teaching

IV. III. II. I.

Joint Presentation (2)

Integrating Serious Games in Higher Education Programs

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Abstract
Computer games are mental challenges with the help of a computer or against it. Serious games are computer games with entertainment characteristics, but designed for serious purposes like corporate training and education. Educators could integrate serious (digital video) games into their classrooms by: collaborating, adopting, writing, creating, and adapting. Because creating a digital game is not an easy process for educators, educators adapt an existing COTS game through modification, or modding. Modding is a design process that allows game modders to explore concepts, apply skills, and test them within virtual environments that mimic the real world. Finally, there is a need for a new instructional design model to be crafted to guide teacher-designers and serious game designers to achieve a good balance between entertainment and learning in the serious game.

Introduction

Games can be defined as a physical or mental contest, played according to specific rules, with the goal of amusing or rewarding the participants. Where computer games are concerned, players may be described as engaging in the same mental challenges or contests "for amusement, recreation, or winning a stake" (Zyda, 2005), either with the help of a computer (as a conduit), or against it (in which case, the computer becomes the challenger).

Although the video game industry, game developers, researchers, and academia may use different taxonomies to categorize video games, most would probably agree to the following seven genres (Gros, 2007):

(1) Action games (platform games) – reaction-based video games (e.g., Pokemon, Super Mario Brothers).
(2) Adventure games – games where the player solves a number of quests in order to progress from scene to scene (like a story) within a virtual game world (e.g. Myth).
(3) Fighting games – games that involve fighting against computer-controlled characters or those controlled by other players (e.g. Soul Caliber, Tekken).
(4) Role-playing games – games where players assume the characteristics or roles of certain fictitious persons or creatures (e.g., Neverwinter Nights, Alpha Protocol).
(5) Simulations – games that are modeled after natural or man-made systems or phenomena; and in which players have to achieve particular pre-specified goals to succeed (e.g., fire-fighting, flight-simulator).
(6) Sports games – games that are based on sports (e.g., basketball, football) or vehicle racing (e.g., Nascar, Grand Turisimo).
(7) Strategy games – games that recreate historical or fictional situations to allow a player to devise an appropriate strategy to achieve the end-goal (e.g. Three Kingdoms, Dawn of Discovery).

The younger learners of the 21st century have grown up playing a plethora of computer games which include a great variety of activities ranging from real-life to pure fantasy. Researchers believe that what seemed like "casual playing" to the non-participating observers actually involve "deep learning" because the players must constantly "react to the challenges presented in the game activities" in order to problem-solve and meet objectives laid out in game quests (Squire, 2006, Prensky, 2001). Such learning can be physical (pressing certain buttons in a correct sequence), intellectual (recognizing certain contextual clues or puzzle-solving), or even emotional (showing empathy with the game characters).

Serious (Digital Video) Games

The Serious Games Initiative was founded by Ben Sawyer (of the Woodrow Wilson Center for International Scholars in Washington, D.C.) in 2002 to focus the industry's attention on digital (computer) games with objectives beyond pure entertainment – including the use of digital games for health care, business, politics, and education (Joseph, 2010). Sometimes, educators may use different terms to describe serious games, these include: digital game based learning (DGBL), instructional video games, etc.

In this paper, serious games are defined as computer games with entertainment characteristics, but are designed for serious purposes: to achieve corporate training, education, health, public policy, and strategic communication objectives (see Zyda, 2005 and Loh, 2009). As such, serious games may include a wide range of digital games that are playable from personal computers (PC), to portable handled devices. They may be playable by one single player, or by multiple players. In the case of the massive multiplayer online games (also called MMOG or simply MMO), groups of players might even communicate with one another prior to game sessions, in order to coordinate their "work" (i.e., serious playing). Some of these games attract players from all over the world who are connected to the game server via internet. In order for them to communicate with one another effectively during game play sessions, MMOG players make use of e-mail and voice chat to communicate and coordinate their play (Joseph, 2010, Dickey, 2007).

Although educators believe that digital games contain "elements … that can be activated within an instructional context that may enhance the learning process" (Prensky, 2001), most educational games (available prior to 2005) were not designed for instruction or teaching per se but were part of a larger training (software) program (Prensky, 2001). Educators tend to regard digital educational games of the time as a "marriage" between digital games and educational content. Unfortunately, this approach to creating educational games (or, edutainment) did not serve the games or the educators well, because they did poorly in both aspects (van Eck, 2006).

To explain how video games/serious games work to engage players and keep them involved in the game play, Prensky (2001), Gunter, Kenny, & Vick (2008), Garris, Ahlers, & Driskell, (2002), describe a cycle of "user judgment>user behavior>system feedback". When a player begin playing a digital game, he/she first forms an initial subjective judgment about the game: whether the game is fun, interesting, or enjoyable. This initial judgment then directs the quality and the intensity of his/her behavior. For example, a game perceived to be interesting might lead to a greater intensity of involvement during play. The level of involvement (user behavior) in the game play could then be seen as system feedback or reaction within a game context.

Taking Advantage of Game Characteristics for Learning

Digital games (serious or not), share a minimum number of traits that make them successful and engaging as learning activities. These traits include (Prensky, 2001; Garris, Ahlers, & Driskell, 2002; Dickey, 2007):

- Back-story and story line – every video game has a back-story, the player achieves the game goal by moving through this story line to it is end, the story line services as a rationale for the game play.
- Game mechanics – it controls the functions within the game and makes the game physical world behave in a certain way. Video game mechanics allow designers to build unique imaginary environments that users can't find in other media.
- Fantasy – video games involve imaginary worlds with no connection to real life consequences. This fantasy makes players explore new situations not part of their real life activities.
- Rules/goals – video games have space and time governed by rules. These rules allow players to apply a wide range of actions within the game context. Serious games have clear sequenced goals that lead to active learning.
- Sensory stimuli (immersive graphical environment) – video/serious games allow designers to apply sound effects and dynamic graphics to grab players' attention and motivate them to play and learn.
- Challenge – video/serious games have clear playing goals with uncertain possibilities for achieving them. Video/serious games usually apply progressive difficulty and provide feedback and score keeping. Educators can use these challenges in the serious game context to improve learning.
- Mystery – in most adventure and role playing video games, players explore unknown environments, and encounter imaginary situations. This mystery increases their curiosity for playing and drives their learning.

- Control – in video games players control, direct, and command their play. This control increases their motivation to play and learn. Thus, control allows educators to design interactive learning activities in the video game context.

These characteristics allow educators to build authentic learning situations and contexts that emphasize concept building and higher level thinking skills into serious games, instead of drill-and-practice activities – found in many Flash-based quizzes and games – for memorization and rote learning. In fact, there are several approaches by which educators could integrate serious (digital video) games into their classrooms:

1. Collaborating – Educators work with developers to create new educational games for teaching (i.e., new curriculum and instruction).
2. Adopting – Teachers integrate games activities from commercial off-the-shelf (COTS) games into classroom activities (see Squire and CIV). COTS games have been seen to cross multiple disciplines (art, English, mathematics, psychology),
3. Writing – Have students create/write new adventures/stories using video game toolsets using a creative story writing "process".
4. Creating – Have students learn to write (or program) a new game from scratch as a learning activity
5. Adapting – Teachers modify (mod) commercial games for educational purposes (van Eck, 2006).

Adapt and Modify Game for Educational Purposes

Serious game integration can take place within the classroom as in-class learning or instructional activitie; or outside the classroom as extra-curricular projects or student assignments. The modification (or, modding) of COTS games, in particular, has seen a number of variations within the classroom as learning activity, for example:

- for experiential learning (or learning by doing) – NIU-Torcs, a game designed to teach mechanical engineering by Coller and Scott (2009);
- for the teaching of computer programming, logical thinking skills, and script writing (Carr, Bossomaier, & Lodge, 2007, Hanson, 2005); and
- as a technical platform to introduce children to information technology and story-writing skills (Robertson & Good, 2005).

Game Modding

Because creating a digital game (from scratch) is not an easy process for game designers (more so, for educators), adapt an existing COTS game through modification, or modding, this has became a highly attractive means of amateur game creation activity. Modders, or people who engage in game modification, make use of game development kits (GDKs) that are often included in the games to create new game play experiences (like creating new weapons, characters, enemies, models, textures, levels, story lines, music, etc.) for other players. The game modding process not only saves time and cost (as it is included in the game), but also reduces the requirement for programming knowledge for players who are non-programmers. The lack of programming knowledge, especially, has been a huge obstacle that prevents non-programmers from making their own games from scratch. Game modding finally opens up game creation as a plausible educational activity for teachers and school children.

As a game design activity, modding is useful for the teaching and learning of instructional content, thinking skills, and learning strategies. The design process allows the game modders (in this case, teachers and students) to explore concepts, apply skills, and test them within a virtual environment that mimics the real world. The modding process not only provides a meaningful and engaging context for the modders to learn, but also allows them to create new knowledge structures and mental models. As such, it is a constructivist activity because the modders are engaged in constructing products that are personally meaningful. A modder must: undergo the constructivist process of creating, evaluating, and revising the artifact over time; work independently or as a group to create prototypes, implement them, and test the prototypes with real users; observe the consequences of their game design decisions, receive feedback from game testers; and

even express notions of cultural identity within the game (see Seif El-Nasr, & Smith, 2006). Therefore, game modding can also be regarded as a social environment in which learners and mentors interact within a learning context in order to solve a realistic problem through "learning by doing."
Moreover, visual literacy is frequently more important than that for written literacy in today's modern culture (Gros, 2007). Learners who are using serious games have the additional advantage of interaction with virtual (and often, highly graphical) environments filled with diagrams, pictures, symbols, and 3-dimensional objects. Such visual literacy not only affects the student players, but also, the teacher designers.
Teacher designers who used GDK to create immersive game environments to facilitate learning need to apply the concept of "engagement" with a game context in order to build engaging activities for the students. As learning is mostly problem-based and driven by meaningful scenarios, teachers must construct problems that will take into consideration, prior game experience, besides presenting knowledge and facts (Squire, 2006). The ability to construct meaningful and engaging problems for learning is an important skill for teachers in the creation of effective learning environments within the classrooms. As more GDKs become increasingly available with today's COTS games, more researchers and educators are learning to create new instructional contents through game modification. Examples of serious games modified by researchers and educators include a game about Einstein's theory of relativity by Carr, Bossomaier, and Lodge (2007), a game about the American civil war by Squire (2004), and a game for teaching High School Health and Science Education by Loh, Byun, Anantachai and Lennox (2008). Other serious games include learning content such as: science, history, languages, health skills, etc.

Adapting COTS Games

Some COTS games, such as Civilization and SimCity, include educational contents that may be adapted for the instruction of life-skills, such as management, languages, economics, etc. For example, SimCity 4 has been successfully adapted to help teachers in the instruction of geometry and civil engineering concepts (Bleah, 2005). Computer Science educators have also reported using the game modding process to teach information technology (Werner, Campe, & Denner, 2005). Seif El-Nasr and Smith (2006) reported two studies in which game modding was used successfully for instruction at high school and college levels. Instead of passively learning about modding, El-Nasr and Smith found these students actively applied what they learned to create new knowledge, and to adapt an existing complex system to fit their needs. Robertson and Good (2005) also reported that secondary school students gained more self-esteem and worked better in teams after attending a course in narrative writing through digital game modification.

Teachers' Perception in Using Digital Games

Teachers will respond differently to the term, "serious games," depending on their exposure to and experience with digital game playing. Before they could successfully integrate serious games into educational settings, it is necessary for both the teachers and the students to become proficient with playing digital games. After studying about the factors that inhibiting teachers' from using video games effectively in the classrooms settings, Baek (2008) reported the following factors:

(a) experienced (older) teachers and parents often worry about students become addicted to gaming,
(b) lack of supporting materials to help teachers integrate serious games into classrooms,
(c) rigid curriculum and fixed class schedules are major obstacles in the adoption of serious games by teachers, and
(d) more experienced (older) teachers are more resistant to the use of serious games in the classrooms than their less experience (younger) colleagues.

Digital Native Teachers

It is clear that those younger teachers – i.e., "digital natives" (Prensky, 2001), who grew up using digital technologies (e.g., computers, videogames, and digital music players) are more likely to accept and respond positively to the use of serious games in the classroom. On the other hand, more experienced teachers (who

are "Digital Immigrants") are more conservative and reserved in their willingness to use serious games. Like teachers in other part of the world, Palestinian teachers may also be separated into digital native and digital immigrants, in terms of their attitudes and comfort levels in using new technologies, including serious games, for instruction within classroom settings. A second factor that might influence Palestinian teachers' perceptions and attitudes is their past experience in playing video games. It is expected that teachers who are familiar with video game playing will be more ready to adopt serious games than the teachers who are not game players.

A third factor that might affect how teachers adopt serious games might be their educational level and the curricular subject area they teach. Teachers who are teaching in information technology and computer science subject areas are likely to be more receptive to serious games than other teachers. In order for new technology to be successfully adopted into the classroom, it is imperative to change teachers' and administrators' attitudes towards the technology and to provide sufficient administrative and technology management supports in helping them facilitate learning for their students.

New Instructional Design Models

The success of new instructional technology is usually accompanied by effective instructional design models. Instructional designers need to refine and enhance their instructional design models to take into account the use of serious games. Good instructional design is rarely easy. Designing serious games (from scratch or by modification) will likely require even higher level skills in "instructional design, game design, high-end production and software programming" (Kirkley, Tomblin, & Kirkley, 2005). Most commercial games designers have few instructional design skills. The reverse is also true, in that most educators and instructional designers have little game design skills. To reduce the complexity of designing a serious game (from scratch), educators would do well to make use of game modding to create small-scale serious games using GDKs provided by COTS games.

There is also a need for a new instructional design model to be crafted to guide teacher-designers and serious game designers to achieve a good balance between entertainment and learning in serious games. Such an effort is already underway, as researchers, educators, and instructional designers become familiar with the game making or modification processes in creating these game-based virtual environments for instruction.

A 10-step model for serious game design was presented by Loh (2009), as follows:

1) Determining target audience and learning content: Fully analyzing the characteristics of the target audience and to determine the learning objectives we are going to attain.
2) Determining the amount of funding and time available: Designing a serious game from scratch needs a long time period. Modding a game to build a serious game is less time and funds consuming.
3) Writing game narratives: Listing all the props and characters needed to stage the game story.
4) Selecting the GDK/Game Bundle: Selecting the best development platform that fits effectively with the target audience, content, and story narratives. When modding a game, designers need to pay attention and work with "finite resources provide by the GDK/game bundle."
5) Video game design and game mechanics: Early prototyping to test the game design. During this step, the game world is designed as well as the player and non-player characters.
6) Interactive learning instruction design: Designing and implementing learning activities with suitable assessment process. It is important to apply clear teaching strategies and sequence the difficulty of the learning activities.
7) Integrated assessment framework: Some video game engines allow for collection of data during game play. This performance data can be used as an assessment tool and provide a clear idea about this performance.
8) The game development cycle: During this step, programmers will be working on software functions and voice artists and musicians will be recording voiceover for NPCs and background music, etc.
9) Beta testing and usability testing: It is necessary to insure product quality by testing the game, players may be used to test-play the game and test the usability of the game.
10) Public release: The development project ends with the pressing of the master/gold CD of the finished game. Most companies do not pay attention to improving their commercial video games after sales.

However, in serious games it is necessary to receive feedback from customers and to improve the product.

Because serious games are new instructional media, Loh (2009) believes that "efficacy assessment"– collecting empirical data for the evaluation of the cost-benefit ratio of serious games – is an important aspect of serious game design. It is clear that the Loh model originated from the general instructional design model; i.e., Analysis > Design > Development > Implementation > Evaluation (ADDIE).
Kirkley, Tomblin, and Kirkley, (2005) adapted the Systems Approach to Training (SAT) Process, which is a spiral approach to making self-development training decisions, to develop Simulation-Games Instructional Systems Design Model (SG-ISD). This model is suitable for educators modifying commercial video games for educational purposes because it has a modding process. Therefore, this model is useful for designing the entire serious game as well as modding an existing game by changing its scenario, learning objectives, and evaluation.
This model will have the following steps if a small group of educators or a teacher were to adapt it for modding or designing a video game.

Analysis:
- Needs analysis: present a clear justification of why you need to design a video game.
- Target audience analysis: analyze and document target audience characteristics that have an influence on design decisions like: gender, age, experience in playing video games, etc.
- Instructional theory: analyze the learning theories and decide which one to follow in the design process. Are you going to use and implement constructive, cognitive, or behavioral learning theory in your design process and why.
- External data: analyze external constraints that might influence your design decisions like budget, time, technical support, or the number of computers available in the school.

Concept:
- Learning methodology: there are different learning methodologies that have been applied effectively in serious game design like: drill and practice or practice and feedback, learning by doing; learning from mistakes; goal oriented learning; situated learning; discovery learning, etc. Decide which learning methodology to adapt and apply.
- Games features: depending on the data revealed from the analysis phase and the learning methodologies, decide what game features are relevant and suitable for your game. When modding an existing game it is very important to understand the game features or the toolset first before making any decisions.

Design:
- Storyboard script: this part is very similar to that of a movie script. The game designer progresses through each scene of the story and details all the necessary information. The storyboard has the following parts: (1) game story: the game story works as a skeleton that carries all other scripts. The game writer should write a complete story line, from the opening scene of the game through the major steps all the way to the completion of the game. Therefore, the players achieve the goals of the game by moving through this story line to its end. It is important to write a game story that fits with the educational objectives and gamers'/learners' characteristics. (2) Describe your game world: as game writer you should describe your game history and explain what the world is like, and what kind of history it has. These descriptions are guidelines for designing this world and writing other scripts. (3) Write sub-quests and pose an overview for each sub-quest: it is better to write a learning hierarchy map that analyzes the story line of the game interaction to its components or sub-stories (Loh, 2009). In each sub-story we can implement game sub-quests. Game sub-quests can be simple or complex but each one is a story in itself. The game writer must tell these stories. (4) Write interactions with non-player characters: your game will probably involve interaction with non-player characters (NPC's). You should write out the dialogue and flowchart the choices the game player can make. These interactions are often critical to the story and they can take the player on very different paths toward the conclusion of the game. Remember that this interaction is part of the sub-quests you are designing in the game. (5) Write cut scenes: cut scenes are short animations or

movies that come before or after major plot points in your story. A cut scene should always be written to enhance or describe the story. A cut scene is also a reward given to the player for achieving a major milestone in game play.

- Lessons Plans/Educational quests: some game sub-quests include learning contexts in which the player learns an educational objective in the game environment by executing these quests. Writing a hierarchy map will help the writer build clear gaming and learning sub-quests and relate them effectively to the game story line. Prensky (2001) summarized the learning techniques that are used in digital game based learning: (1) Drill and practice or practice and feedback: the video game presents a series of problems and tracks how people answer them. It is better to use this technique when learning requires repetitive practice. For example, Slam Dunk Typing uses this strategy to teach the players typing skills. (2) Learning by doing: the game allows the user to interact with its environment by exploring, discovering, and problem solving. Drill and practice is one form of learning by doing. (3) Learning from mistakes or trial and error: the game motivates the player to continue trying until succeeding in achieving its goal or sub-goal and provides the player with action feedback. In most cases, something happens to the player while trying; he loses or dies. (4) Goal oriented learning: achieving a game goal is what motivates the player to keep trying. This happens by informing the player right at the beginning of each quest, of what he should do to accomplish it. (5) Discovery learning: it is solving a given problem by searching data, structures, or clues. A game can structured this discovery by providing the players with a clear idea of what the problem is, and what they need to solve it, at any time. (6) Situated learning: This is designing the game environment to be similar to where the learning material will be used and applied in the future. This includes designing the physical, cultural, and social learning environments. (7) Task based learning: in task based learning, the learner goes directly to solve a problem without starting with conceptual explanation and demonstration. The game provides the gamer with required information directly when using it. It is possible to increase the difficulty of these tasks by gradually sequencing them. (8) Questions-based learning: forcing a player to answer a question in a game environment will force him to think about the question and the required information to answer it. (9) Role playing: in role playing games, the gamer plays the role of a given character. The game uses role playing as learning a strategy through designing the interaction of this character with other elements in the game environment. (10) Coaching: the game uses practice missions in the game environment to coach players in their way to complete a complicated task. (11) Multisensory learning: in this case a game has a multisensory game environment that supports the player with multisensory experiences to interact with and learn from.
- Character: create character descriptions and bios for all of major characters in the game. Many of the non-player characters you create will pop up time and time again and their story is woven deeply into the fabric of your world. You need to describe this relationship in detail and how it appears in each sub-quest.
- Assessment: as designer you should explain what assessment components are included in the game and how to present them.

Technical Design and Prototype Implementation:
Once the game designer has finished writing all of the game scripts it is time to construct the media, implement the prototypes, and produce the lessons. Prototype implementation will help the designers test out the look (design) and the feel (mechanics) of the proposed game (Loh, 2009). It is good to do this as early as possible to take time to balance all the game objects.
Finally, the designer needs to pilot the game and receive feedback from users before its final use. This testing includes: bug testing, usability testing, play/fun testing, and learning testing.

Conclusion
Serious games are e-learning tools that have unique educational characteristics. These characteristics allow educators to build authentic learning situations and contexts which emphasize concept building and higher level thinking skills. To integrate serious games effectively in classroom activities, teachers need to adopt new roles as game designers and game modders and educators should build new instructional design models that fit with the new technology.

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Braekout Session (1)

West Bank Academic Colloquium 2010
Seminar for Excellence in Teaching (SET)

Building Partnerships in Teaching Excellence
Our Need for Competency Based Learning....
Hope for Change???

Prepared by: Dr. Mu'men Al-Badarin
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Changing roles in our life can be life itself. We need to look into how we can change our way in teaching, our role as well as our attitude .Competency Based Learning is a new methodology which is relatively absent in Palestinian Universities, especially in the field of humanities ..

This paper attempts to identify what Competency-Based Learning means, in terms of concept , implementation, benefits , pitfalls, and evaluation...

Consequently, we address the following parts:

* Introduction to use of competency through early history.
*Identification of the educational concept of Competency Based Learning.
*Comparison with traditional education in terms of attendance, benefits, implementation, pitfalls and evaluation system .
* Principles of this new methodology, and its phases.
*Conclusions and references.

.Introduction

The concept of competence dated back to ancient era from Persian (in the code of Hamurabbi), until present time. This concept has been used in Europe for education and training (competence-based education) since the seventies of the last century (Mulder, 2007).

The debate about the concept started in the 1950s of the last century, when White (1959) wrote a piece in which he defined competence as a basic motive for the acquisition of knowledge, mastery of skills, need for exploration, or competence as exploratory learning for "effectance". McClelland (1973) stated more than a decade later that traditional testing needed to be changed, as the prognostic validity of IQ testing and of traditional assessments in education, training, and selection of professionals was limited. Gilbert (1978) made a link between competence and effective performance improvement. Boyatzis (1982) did large-scale studies on competence of managers, asking top performing managers to define their competencies. Zemke (1982) expanded the application of the concept of competence to all aspects of training and development.

By this time professional associations began to use competency profiles for professional licensure and registration practices. McLagan (1989) developed competence profiles for self-assessment and development. The competency framework for managers of Quinn et al (1996) showed that it is important to think in terms of collective competence of teams, and that team members can, or even should, have different competencies. Prahalad and Hamel (1990) applied the concept of core competence at the organizational level. They contended that organizations that identified and employed their core competence in strategic development showed better performance.

In the 1990s, the concept of competence also became popular in European education (European Commission, 2005, 2006; European Social Partners, 2006). Studies of Biemans et al (2004) and Mulder et al (2006) showed the various difficulties regarding the implementation of competence-based education in various countries. (Martin Mulder et al 2009)

1. Defining the concept of competence:

As mentioned above, the concept of competence has a fairly long history in education and training research and practice. Nowadays, the notion of competencies as integrated capabilities has become very popular. Reviewing the many studies on competence development, however, it is possible to conclude that the concepts of competence and competence-based education are still very diffuse and require clear definition and conceptualization. When we want to see an accurate definition of CBL as found in the literature, we will find various perspectives as follows: . (Biemans et al 2004)

- Competency-based education is an outcome performance approach to curriculum design.
- Competencies are measurable practice behaviors that are comprised of knowledge, values, and skills. (Geriatric Social Work Initiative, Roberta Greene, 2009)
- Competence is: the integrated set of capabilities (or competencies); consisting of clusters of knowledge, skills, and attitudes; necessarily conditional for task performance and problem solving; and for being able to function effectively (according to certain expectations or standards); and in a certain profession, organization, job, role, and situation. (Mulder et al 2009)
- The ability to apply knowledge, understanding, practical, and thinking skills to achieve effective performance to the standards required in employment. This includes solving problems and being sufficiently flexible to meet changing demands (NCVQ, 1997).
- The skills, knowledge and understanding, qualities and attributes, sets of values, beliefs, and attitudes which lead to effective managerial performance in a given context, situation, or role (Woodall and Winstanley, 1998).

Literature study and expert consultation, indicates that many conceptions of competence exist, both in theory and in educational practice. Competence as a concept turned out to be (too) elastic. This raised the following question: what are the commonalties with respect to the concept of competence in various sectors and contexts? Biemans et al (2004) derived six common characteristics of competencies, as defined by relevant authors in the field: 1) competencies are context-bound; 2) they are indivisible (knowledge, skills and attitudes are integrated); 3) they are subject to change; 4) they are connected to activities and tasks; 5) competencies require learning and development processes; and 6) they are interrelated. Therefore, in their opinion, the concept of competence is valid, although the relationships with other concepts such as key qualifications and expertise can be quite strong.

2. "What Things Can CBL Offer??"

There are a lot of crucial needs that CBL presents, which make us thinking seriously to shift our traditional teaching to competency based teaching:

- Alignment with needs in society, a sector, a region, a community, or a company, because:
  - The nature of society is changing rapidly
  - The complexity is increasing
- Fewer transfer problems from school to work for starters in the labour market, because:
  - It gives students access to the world of work
  - There is opportunity to have added value for the economy
- Motivated students because they know they are working on relevant subjects
- To ensure a good livelihood for the graduates (in terms of being an independent entrepreneur, working in a company, Ministry etc.)
- To demonstrate the integration and application of the competencies in practice with individuals, families, groups, organizations, and communities (Biemans et al 2004).

3. Conventional vs. Competence-Based Education (Renate Wesselink pp 2009)

When we make a comparison between traditional teaching which we already use in our universities, and competency based learning to which we hope to shift, we will find these crucial differences as follows:

	Conventional Teaching	Competence-Based Teaching
1	Main core is education	Main core is learning
2	Teacher has the active role	Student has the active role
3	Small and fragmented tasks	Authentic, real life tasks
4	Behaviouristic look at learning	Constructivistic look at learning
5	Discipline-oriented programme	Competence and practice-oriented programme.

4. Essential Elements of Competency Based Education (CBE): (Bogo et al, 2004)

This methodology consists of essential elements comprising a framework.However, If any of these elements was missing or was not linked with others ,the whole process would break down.. These elements are:

1. Adoption of a defined set of specific skills (competencies) as a framework for education in a field of practice.
2. Establishment of individual student learning goals based on the competencies.
3. Assessment of student skill level, at the beginning of and upon completion of learning, using the identified set of competencies.
4. Integration of class and field work learning through a competency- based curriculum.
5. The collaboration between stake holders, including policy makers, ministry principals, universities, community, teachers, and students in a positive way.(Bogo et al. 2004)

5. Pitfalls in competence-based Learning

At the start we have to say that any methodology has its advantages and disadvantages, so this section discusses several possible pitfalls in applying competence-based education (Biemans et al 2004):

5.1 The concept of competence

There are many conceptual definitions of competence and competency as we mention before. There is little consensus on the meaning of these concepts amongst many researchers and authors. Also in practice, institutional actors and colleges use different descriptions. This sometimes serves as an excuse for defining competencies as one likes, decreasing the trustworthiness of the concept (Mulder, 2000, 2003). According to Nijhof (2003), designing competence-based curriculum, learning processes, and assessment procedures can only be done fruitfully, when competence is operationalised as unambiguously as possible. On the other hand, it is important to avoid competence jargon while actually designing and implementing competence-based education and to choose a more practical approach (Mulder, 2003). In this respect, a common vision of the desired competencies should be reconstructed in interaction with all actors involved (students, teachers, social partners, government; Simons, 2003).

5.2 Standardization

A second pitfall is an over-reliance on standardization of competencies, whereas the power of competence-based education lies in its context- embeddedness. Usually, the reality of work is quite different from job descriptions and organizational regulations on paper (Klarus, 2003). Using overly standardized competencies is really missing the point, since every abstraction from actual practice makes them less applicable. Related to

the problem of standardization is the belief in forecasting techniques: competence standards should describe jobs in the future, for which students are educated, but they can only describe jobs from the past (cf. Den Boer and Nieuwenhuis, 2002). Too strict a use of competence standards leads to conservative training, instead of preparing students for innovative developments.

5.3 Determining learning activities

Specifying the competencies to be acquired by students does not automatically result in the design of effective learning activities. Planning, designing, and implementing effective ways of learning require specific attention. Many authors in this field argue that learning arrangements and pathways should be based on principles of social, and constructivist learning (cf. Van der Sanden et al., 2003; Simons, 2003, Mulder 2003). Teachers should work in multi-disciplinary teams to design new competence-oriented learning activities, using existing practical periods and on-the-job training. Translating competence-oriented goals into actual learning activities is crucial in the implementation of competence-based education. If the implementation gets stuck at the preparation phase and/or does not get carried into the execution phase, true innovation will fail. In this respect, students should not only develop work-related competencies, but also learning competence if they are to be equipped for lifelong learning (Mulder, 2003; Van der Sanden et al., 2003).

5.4 Assessment of competencies

A fourth pitfall is assessment of competencies, especially in work situations. It is hard to standardize and often involves structured observation rather than classroom examination. Developing and using valid and reliable assessment tools is a crucial but very difficult task. Moreover, the criteria for the quality of assessment become stricter as its importance increases (cf. Nieuwenhuis, Van Berkel, Jellema and Mulder, 2001). Since traditional assessment methods are ill-suited to a competence-based, curriculum, schools, enterprises, and institutional actors have to find new ways to develop appropriate assessment tools (cf. McClelland, 1973).

5.5 Changing teacher roles / identity

The fifth pitfall is distribution of roles in the teaching process, however, teacher and student roles should be exchanged if we want to implement competency based teaching. In other words the teacher is supposed to switch from the role of an expert, transferring knowledge to a coaching role, guiding students' learning processes. Students are supposed to take responsibility for their own learning, whereas the teacher used to be in charge. This requires a totally different attitude from both parties, perhaps even a paradigm shift. Achieving this challenge is all too easily forgotten by policy-makers ,when we are talking about implementing of competence-based education.

5.6 Competence-based Management

In developing competence-based education, it is essential that structural attention is paid to competence development of teachers and school managers. According to Mulder (2000), competence-based management implies an open culture and co-operation. If these conditions are not met, competence-based management will be a failure. Management itself has to "walk the talk"; otherwise people at lower levels in schools will perceive it as an ordinary management tool, instead of appreciating it as a supporting strategy to develop both the school organization and the individual.

5.7 Other pitfalls: (Mulder et al 2009)

- Competence-assessment can take a lot of time.
- Competence-assessment comes with high costs.
- The development of competencies takes long time, because of which it is difficult to test them during the educational program.
- Competencies are being formulated in general terms, so that they do not have any discriminating power in assessments.
- The assessment of performance of persons. frequently takes place in simulated professional contexts, by which there is no guarantee that the same person will also act competently in a real professional context;
- Analyses of competency profiles do not always have the availability of sufficient capability and

trustworthiness to judge whether certain persons are competent or not.

6. principles of comprehensive CBE: (Biemans et al 2009)

Based on various theories of education and empirical research, eight principles of comprehensive competence-based (vocational) education were developed for the empowerment of local education teams to facilitate interactive processes of curriculum deliberation (Wesselink et al, 2007a, b). Applying these principles will result in a comprehensive approach to competence-based education. These principles are created for vocational teaching, but we can implement them in academic teaching by specifying them to be linked to our teaching.
These principles can identify the 'what' (content of the curriculum) and 'how' (instruction) of comprehensive CBE. These principles follow hereby:

a. The competencies that are the basis for the study program are defined.
b. Professional core problems are the organizing unit for (re)designing the curriculum (learning and assessment).
c. Competence development of students is assessed before, during, and after the learning process.
d. Learning activities take place in various authentic situations.
e. In learning and assessment processes, knowledge, skills, and attitudes are integrated.
f. Self-responsibility and (self-) reflection of students are stimulated.
g. Teachers, both in school and practice, balance their roles as coaches and experts.
h. A basis is established for a lifelong learning attitude among students (Wesselink et al. 2007).

7. Phases of realization of CBE (Biemans et al 2009)

It is clear that shifting teaching goals to competencies can not all happen in one time. However, phases may describe the existance of each goal "principle" in the curriculum. Each principle can be strengthened through describing four phases of realization of CBE (not, starting to be, partially and completely competence-based) leading to a framework of eight by four cells, the so-called 'Matrix for competence-based vocational education' which are utilized in academic teaching.
The matrix can be used by teacher teams to determine the extent to which the principles have been realized in their educational programs: with the help of the matrix, teachers can reflect on their educational program, position their program in the matrix and define priorities and educational innovation goals for the future.

8. CBL should be involved in all Educational Programs?
The implementation of CBL in the field of vocational teaching is easier in general, than in other educational programs. Although it is too hard, it is still possible and and indeed fruitful if we specify learning outcomes that are linked to academic competencies like communication, working in a team, and doing research. This change in learning outcomes should also influence the assessment process (Mulder et al 2009).

9. Competence and curriculum: Can the curriculum remain the same ?
CBL means changing goals and outcomes. However, this means the importance of changing curriculum which requires changing traditional assessment to a competence-based assessment, because a misalignment of these two is detrimental for learning (Gulikers et al., 2008).
To translate the competence oriented education philosophy to the curriculum, competence profiles are composed. These profiles describe competencies that are often supplemented with different levels of mastery (e.g. Bsc, MSc, PhD level).
A way to get to a competence profile is to start with job roles and to define outputs and consequently competencies for those roles. An occupation for which a student is being prepared often consists of more roles (such as research, design, and consultancy).
These roles are described and their requirements are formulated. These requirements are delivering services and products such as analytical reports, research instruments, test results, articles, presentations, and instructions. Finally, based on this, competencies can be defined. These are capabilities that role holders need

to be able to deliver relevant services and products.
Several professors in different trajectories agreed that also university programs need to comply with the needs of society, however, these programs should be made more transparent and explicit in accreditation processes. These changes include learning outcomes need to be integrated in the curriculum.

10.Competence and Instruction

Competence-based education often goes together with the implementation of principles of activating student learning. According to those principles students are expected to collect information by themselves and to solve problems in groups. This changes the role of the teacher and that of the student. Competence-based education is more student-centered and less teacher-directed (Wesselink et al., 2007a, b). The experience is that teachers give less and less information and instruction to students. In line with previous sections, many fear that the level of mastery of basic skills and knowledge is decreasing as a result of this approach.
Biemans et al. (2004) describe the experiences in vocational education and show that the changing role of teachers and students can easily be overlooked. It is therefore seen as important that structural attention is paid to the competence development of teachers and education managers.
Learning in practice is formulated as a condition for competence-based education (Wesselink et al., 2007a, b), but in reality it appears to be problematic to combine learning with practice. For example, problem-based education (PBE) is an instructional method used in higher education to initiate learning through practical problem cases that students have to solve in groups. A remark frequently made about PBE as educational method is that the group work is not always appreciated. Students currently also want to perform and excel individually, and they do not always divide the work in a fair way. Many times there are students who try to take a free ride, consequently the total quality of the group work decreases.

11.Competence and Assessment

In the literature and by the respondents various critical remarks are made while using competence assessments. Biemans et al. (2004) and Mulder et al. (2006) stated the following in this respect: competence-assessment costs much time; competence-assessment goes with high costs; the development of competencies takes a long time, because of which it is difficult to test them during the educational program; competencies are being formulated in general terms, so that they do not have any discriminating power in assessments; the assessment of performance of persons frequently takes place in simulated professional contexts, by which there is no guarantee that the same person will also act competently in a real professional context; and analysts of profiles of competencies do not always have the availability of sufficient capability and trustworthiness to judge whether certain persons are competent or not (Mulder et al 2009).

A Comparison between Assessment in CBL and Conventional Teaching .

When we make a comparison between the traditional assessment which we already use in our universities, and competency based assessment which we hope to shift , we find these crucial differences in terms of aims and methods (Judite 2009) :

	Conventional assessment	Competence-Based assessment
1	Traditionally, tests are characterized as: knowledge based / basic skills, lower-level learning: drill-and-practice, reproduction	New assessments are characterized by integration of knowledge, skills and attitudes, higher-level learning: understanding, applying, adapting, creating new knowledge, Focus on professional, competent behavior.
2	Goal is to certify: fail or succeed	Goal is to diagnose level of competency development in order to improve

3	Teacher is responsible for the assessment	Shared responsibility (teacher, students, profession)
4	Assessment is "done to the student"	Shared responsibility (teacher, students, profession)
5	Standardized "objective" tests	Not standardized, but adaptive, individualized assessments
6	Tests have no relation to profession	Authentic: show a link with profession
7	Assessment of end products	Assessment of products and processes
8	One test, one assessor, one moment in time	Multiple methods, multiple assessors, multiple moments
9	= Assessment of learning (summative)	= Asessment for learning (formative)
10	= Assessment only at the end of learning	= Assessment before, during, and after learning.

Conclusion

CBL is a methodology with several advantages that we largely need. Despite a few disadvantages, the main advantages outweigh the former ones.

There are series of serious obstacles in shifting our traditional teaching to CBL . Nevertheless, gradual implementation is highly recommended. This is the one thousand mile journey, but the first step starts with the small changes implemented through the role of the individual teacher.

This can be done by shifting towards highlighting the analytic, synthesis, and evaluation skills of the student rather than assessing cognitive learning outcomes. For a total shift, several stake holders like policy makers, Ministry of Education, academic institutions, and the community should be involved in one way or another.

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Braekout Session (2)

Using E- Assessement Structured Communication Grid Test (SCGT) to Assess High Levels of Thinking Skills

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Abstract
Technology plays an important part in the assessment delivery system as it is quicker, cheaper, and more efficient. The learner can take an online test and be objectively marked instantaneously.
Objective e-assessments (True - false and multiple choice) tests are widely used. However, they are not adequate to provide a correct picture of students' performance or the effectiveness of the teaching process. Another major disadvantage of these tests is the inability to measure the learners' levels of theory knowledge and understanding.

In this paper the researchers tried to overcome such difficulties by using the Structured Communication Grid Test SCGT, in which the data is presented in the form of a numbered grid and learners were asked to select the appropriate boxes from the grids for each question (Bahar and Hansell: 2000). The grid questions can assess higher thinking processes, and easily be converted to electronic testing providing instant grading.
Two achievement tests with different forms, the True-False Test TFT, and Structured Communication Grid Test SCGT have been developed, where 121 learners at Alquds Open University (QOU) participated in this study.
The results of TFT revealed the following:

1. There is no statistically significant difference between TFT and SCGT when lower levels of Bloom's Taxonomy knowledge and comprehension- were measured.
2. There is a statistically significant difference between TFT and SCGT when higher levels of Bloom's Taxonomy -synthesis and evaluation- were measured.

Findings also revealed that SCGT technique enhances and facilitates knowledge, meaningful learning, and increases motivation. Moreover, it can easily be converted to an electronic exam.

Keywords: Structured Communication Grid Test SCGT, E-Assessment, Thinking Skills.

Background:

E-assessments are an important feature of online education. They have many advantages over traditional (paper-based) assessments, as they broaden the range of skills assessed and can provide students with more timely and informative feedback on their progress. Classical electronic assessments such as multiple choice tests, true and false tests are widely used. These tests are mostly used to determine lower order thinking skills in Bloom's Taxonomy, mainly "knowledge and comprehension" (Karakirik: 2005), and are rarely used to assess higher order thinking skills "synthesis and evaluations"(Thomas: 2002; Abramovitz and Berezina: 2004). In addition, they are limited primarily to testing knowledge of information, easy to cheat, answers are easily guessed correctly, even if material has not been mastered. Guessing the answers rather than knowing them, contradicts the basic aims of the assessments.

SCGT is an alternative assessment approach. It reveals learners' ideas and reasoning by forcing them to organize an interrelated set of givens rather than focusing on the correct answer (Durum and Karakirik: 2005). In addition, measuring meaningful learning and diagnosing misconceptions and erroneous information of learners could be possible using this method (Baher et.al.: 2009).

In SCGT, a set of boxes may contain symbols, numbers, graphes, equations, illustrations, or descriptions randomly arranged. Learners are asked questions related to the contents of the boxes. In order for learners to get a full score, they need to choose the boxes that contain the correct answer, and to select these boxes in logical or functional order if required. The grid size for a SCGT could be 3x3, 3x4 or 4x4. The technique provides a medium in which learners communicate with teachers and reveal their cognitive structure, this is why the technique is called "Structural Communication Grid Test" SCGT (Johnstone et al,.: 2000). SCGT almost eliminates the problems of guessing, because the learner does not know in advance how many boxes contain a correct answer (Hassan et. al.: 2004).
Durmus and Karakik introduced two different grading mechanisms for two different question types employed in SCGT. The first method is for regular questions, in which the order of the selecting the correct boxes is not important. The second method is for ordered questions, in which the order of selecting the correct boxes is important. SCGT assesses learners' performances by checking the order of each correct box into consideration.
SCGT was proposed by Egan (1972), and was developed as an alternative assessment technique by Johnstone and Duncan between 1974 and 1979. Since then it's been used by many researchers, such as: Johnstone et al.: 2000; Bahar and Hansell: 2000; Bahar: 2001; Özatlı: 2006, Özdener :2006, Najdi: 2007; Bahar:2009. These studies reveale that SCGT can diagnose misconceptions and erroneous information of learners and measures meaningful learning. They also show that SCGT positively affects the achievement of learners and increases their working memory capacity. However, its effect on the higher levels of thinking skills has not been examined.

Significance of the study
The recent mission of Al Quds Open University (QOU) is to implement technology in its teaching and learning system. There is also a great interest in how technology can be implemented in assessments, ensuring that assessment methods adopted reflect both the aims and the objectives of the course. SCGT can be used to fulfill QOU aims by testing a range of skills, knowledge, understanding and by promoting deeper and more effective learning. Using computers in assessment does not have to mean more true or false or multiple choice testing.

Aims of the Study
To examine the correlation between TFT and SCGT.
2- To eliminate TFT drawbacks by using SCGT to assess higher levels of thinking skills.
3- To demonstrate a computer evaluating SCGT technique.

Quistions of the study:
1- What is the correlation between TFT and SCGT?
2- Can SCGT assess higher levels of thinking skills?
3- Is it possible to demonstrate a computer-based SCGT technique?

Method
Two research instruments are utilized to collect data in order to answer the first and second questions. SCGT was developed using techniques described in Baher et.al.: 2009. TFT was prepared as illustrated in Appendix A and Appendix B. Both tests consisted of two sections:
Section 1: required learners to recognize and identify knowledge.
Section 2: required deep understanding of the concept involved and ability to interpret and judge the presented information.
In both tests, the same content areas were tested, and validity and reliability tests were conducted (Cronbach=0.83, 0.81).
Descriptive statistics for each test and correlations between the different formats of questions were calculated. Spearman's rho correlation between the formats of questions was calculated.

Data collection and Analysis

A random Sample of 121 QOU math learners completed both SCGT and TFT.

To answer the first question of the study

Descriptive statistics and Spearman's rho correlation of section 1 and section 2 for each test were calculated, as shown in table 1, table 2.

Table1: Descriptive statistics for TFT and SCGT of Section 1

Test	N	Min	Max	Mean	S.D	St.Err
TFT	112	40	100	71.25	18.3	1.71
SCGT	112	35	100	71.56	18.0	1.7

Spearman's rho between TFT and SCGT =0.903 (significant at 0.05 level)

Table2: Descriptive statistics of TFT and SCGT of section 2

Test	N	Min	Max	Mean	S.D	St Error	Cronbach α
TFT	121	40	100	63.83	21.21	2.0	0.83
SCGT	121	35	100	66.25	20.57	1.94	0.84

Spearman's rho between TFT and SCGT =0.87 (significant at 0.05 level)

Tables 1 and 2 show that the means of TFT and SCGT in the first section are almost similar (71.25 and 71.56 respectively), where as in the second section the mean of SCGT is higer than the mean of TFT (66.25 and 63.83 respectively).

The tables also showed that the results of the correlation between TFT and SCGT in both sections (0.903 and 0.87 respectively) are positively high-as expected- because both assessments are objective and were testing the same narrow area of understanding.

To answer the second question of the study

T-test for dependent samples was conducted on the data to determine if there was a statistically significant difference between the means of Section 1 and Section 2 of TFT and SCGT, as shown in Table 3 and Table 4.

[redacted]

These results indicate that there is no significant difference between the mean of TFT and SCGT where (t =0.356, p = 0.722).

[redacted]

P=0.05

These results indicate that the mean of (SCGT) is significantly higher than the mean of TFT (66.25 and 63.83

respectively) where (t =2.7, p = 0.006).

Qualitative Results.

Fifty learners were interviewed in order to probe their views about the SCGT technique

An open-ended question was addressed to the learners: "Give your opinion of SCGT techniques?"

Learners' opinions related to the effect of SCGT technique are :

-The technique made them contemplate, analyze, originate, integrate, and combine information into full answers which in turn enhanced and facilitated knowledge and meaningful learning.

- Test fear and anxiety decreased, they felt like playing in the exam not taking a test.
- Improved critical thinking by forcing logical and reasoning choosing of the correct boxes and eliminating the incorrect.
- Gave an advantage to correct mistakes; ordering helped to complete their missing knowledge, and strengthen their correct understandings, judgements and decisions.
- Some learners stated that SCGT requires too much time for thinking .

To answer the third qeistion of the study

A computer program that facilitates evaluating a SCGT technique has been developed.

The design based mainly on the Durmus and Karakik formula constructed for both regular questions and order questions.

Separate scoring mechanisms are used for each type of the question. For regular questions, in which the order of boxes is not important, learners get 50 points out of 100 for the correct boxes they have chosen and 50 points for the incorrect boxes they have chosen, the raw score will be calculated as followes:

$$\text{Raw Score} = \frac{\text{the number of correct boxes chosen}}{\text{Total number of correct boxes}} - \frac{\text{the number of incorrect boxes chosen}}{\text{Total number of incorrect boxes}} \longrightarrow eq(1)$$

The raw score of a learner could range from -1 to +1. The total score of the learner is then calculated as follows:

$$\text{Total Score} = (\text{Row Score} + 1) \times 50 \longrightarrow eq(2)$$

The total score then ranges from 0 to 100.

For **ordered questions**, in which the order of the selected boxes is important, SCGT assesses learners' performance by taking the order of each correct box into consideration. To be able to evaluate an order question, one has to check the correct order of each box in the answer by asking two simple questions:

1- Does the nth correct box come before the n+1th box?

2- Is the nth correct box immediately before the n+1st correct box?

For a question having n boxes in the answer, one has to ask these two questions n-1 times. For each correct response learners get a point .

Then the raw score of the learner is calculated as:

$$\text{Raw Score} = \frac{\text{the number of points get}}{\text{Maximum point one could get}} \longrightarrow eq(3)$$

The raw score of a learner could range from 0 to +1. The total score of the learner is then calculated as follows:

$$\text{Total Score} = (\text{Row Score}) \times 100 \longrightarrow eq(4)$$

The learners' total score for a test having both regular, and ordered questions, is calculated by averaging the total scores taken from each part (Durmus, Karakik: 2005). An example of the SCGT scoring mechanism can be seen in (Appendix C), which clearly illustrates that computerized SCGT can easily be developed and used.

Conclusion

The high correlations between TFT and SCGT in Section 1, which required learners to recognize and identify knowledge, indicated that both formats have the same impact on the learner's outcomes, and assess the same skills and cognition. The decrease of the correlation in Section 2, which required deep understanding of the concept involved and ability to interpret and judge the presented information, implies that relations of the two formats decrease as we approach higher levels of Bloom's Taxonomy, synthesis and evaluation. The results of t-tests revealed that using either TFT or SCGT in testing the lower levels of Bloom's Taxonomy, knowledge and comprehension, dosen't make any difference, while it is preferable to use SCGT if the higher levels in the taxonomy are tested. The interest in SCGT assessment was first motivated by Johnstone's (1987, 1979) work with paper-and-pencil grids in university chemistry courses. What we have added is an on-line implementation in assessment. The results provide a clear evidence that using SCGT for on-line alternative assessments should be considered when higher levels of cognition are to be tested.
Findings also revealed that SCGT technique enhances and facilitates knowledge, meaningful learning and increases motivation.

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Appendix A

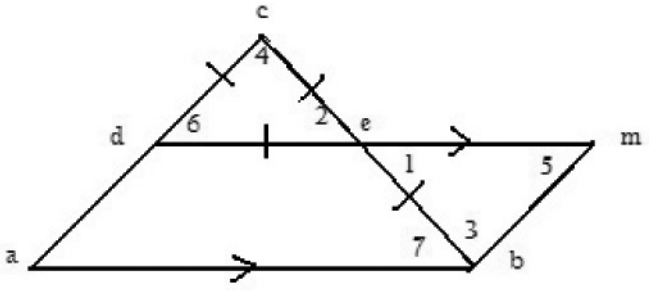
SCGT

القسم الأول Section 1 :

أمامك 9 صناديق، يحتوي كل واحد منها على معلومة رياضية. قد يكون واحد منها أو أكثر ، جوابا لسؤال من الأسئلة التي تليها. أكتب رقم الصندوق أو الصناديق التي تحمل إجابة السؤال في الفراغ المخصص لذلك

في الجدول رقم 1

1 تطابق	2 تسامت		3 تناظر	
4 تشابه	5 تبادل		6 تناسب	
7 تكامل زوايا	8 تساوي		9 توازي مستقيمات	



شكل(1)

1- **في الشكل** (1) **قياس** 4 > = 3> **حسب الحقيقة او الحقائق الموجودة في في الصندوق او الصناديق التالية** ----------

2- **في الشكل** (1) **قياس قياس** 2> = 1> **حسب الحقيقة او الحقائق الموجودة في الصندوق او الصناديق التالية** ----------

3 - **في الشكل** (1) **قياس العلاقة بين** 4 >2, < **هي العلاقة الموجودة في الصندوق او الصناديق التالية** ----------

4 - **في الشكل** (1) **قياس العلاقة بين** d m a b, **هي العلاقة الموجودة في الصندوق او الصناديق التالية** ---------

5 - **في الشكل** (1) **العلاقات التي احتجناها لبيان ان المثلث** dce **يشابه المثلث** acb
هي العلاقة/ العلاقات الموجودة في الصندوق او الصناديق التالية ----------

6 - **العلاقة بين الزاويتان** 2 و7 **هي هي العلاقة/ العلاقات الموجودة في الصندوق او الصناديق التالية** ----------

7 - **العلاقة بين القطع المستقيمة** AD CD & BM **هي العلاقة الموجودة داخل الصندوق او الصناديق** ---------

8 - **اختر رمز الصناديق التي تختص بعلاقات مثلثية** ----------

9 - **لكي نبين أن مجموع زوايا** ΔABC **في الشكل** (3) **تساوي** 180° **فاننا نحتاج الى المعلومة الموجودة داخل الصندوق او الصناديق رقم** ----------

10 - **العلاقة بين زاوية** 1 **ومجموع الزاويتان** 4و6 **هي العلاقة/ العلاقات الموجودة في الصندوق او الصناديق التالية** ---------

جدول 1

رقم السؤال	1	2	3	4	5	6	7	8	9	10
الاجابة	1,3	1,5	8	8	9 , 8 ,3,5	,8, 3	9 8,	1.4	2,7	7

القسم الثاني Section 2 :

1	متجه باتجاه النقطة (-1,-1,5) والنقطة (-2,3,7)	2	$\frac{1}{z}$	3	متجه الوحدة باتجاه $\overrightarrow{pp}_0$
4	$\vec{u} = \frac{\overrightarrow{pp}_0}{\left\|\overrightarrow{pp}_0\right\|}$	5	$\left\|\vec{\nabla} f(p_0)\right\|$	6	$\frac{-2y}{z}$
7	$\vec{\nabla} f(p_0)$	8	$\frac{-x+y^2}{z^2}$	9	$D_{\vec{u}} f(p_0)$

1-
المشتقات الجزئية للاقتران $\frac{x-y^2}{z}$ هي الموجودة في الصناديق (-------)

2- المعادلة $3i + 4j + 2k$ تمثل ما جاء في الصندوق(------)

3- هناك جملتان رياضيتان تتساويتان لو ضربت احداها بـ $\frac{\overrightarrow{p}_0}{\left|\overrightarrow{p}_0\right|}$ هما الجمل التي توجد في الصناديق(------)

4- رتب المعلومات الموجودة في الصناديق المناسبة لتكون حلا لايجاد قيمة المشتقة المتجهة للاقتران $\frac{x-y^2}{z^2}$ عند النقطة P0 (-1,-1,5) باتجاه p0 الى النقطة (-2,3,7).

5- لكي نجد القيمة العظمى عند p0 نحتاج الى المعلومات الموجودة في الصناديق (----)

6- لكي نجد قيمة الاقتران نحتاج الى المعلومات الموجودة في الصناديق (----)

7- لايجاد المشتقة المتجه للاقتران $\frac{x-y^2}{z^2}$ نحتاج الى المعلومات الموجودة داخل الصناديق (----)

8- مشتقة dx,dy للاقتران $f(x,y,z)=\frac{x}{y}-\frac{-y^2}{z}+3z^4$ هي الاقترانات الموجودة داخل الصناديق(---)

9- اذكر ارقام الصناديق التي تحتوى على قيم ثابتة عند النقطة (p0=(-1,-1,5 (-----)

10- رتب ارقام الصناديق بحيث تعطى القيم التي حصلنا عليها في السؤال التاسع تصاعديا (-----)

جدول 2

رقم السؤال	1	2	3	4	5	6	7	8	9	10
الاجابة	2,6,8	3	7,9	3,4,9	7,5	7	2,6,8	1,6	2,5,6,8,9	9,5,8,6,2

Appendix B

TFT

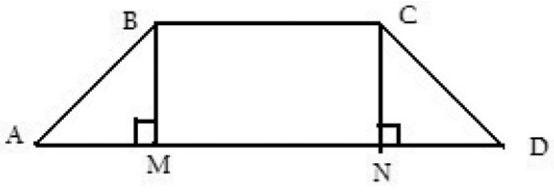
القسم الأول Section 1 :

اجب بنعم او لا ثم انقل الاجابة الى جدول رقم 1 في الاسفل

-1 اذا كان طول ضلع متساوي الساقين 6 فان ارتفاعة يساوي $\sqrt{3}$ 3

-2 المعين الذي قطراة متعامدان يكون مربع.

-3 المستقيمات المتوسطة في المثلث تتقاطع لتقسم المستقيم النازل من الراس الى القاعدة الى ثلاثة اجزاء متساوية.



شكل(1)

-4 من الشكل (1) نجد ان BC+CD=2BP

-5 نقصد بالقطعة المستقيمة AB المسافة بين AB

-6 اخطأ اقليدس حين عرف النقطة بأنها الشئ الذي لا جزء له

-7 المسلمات الأربعة الاولى في نظام فانو تشكل نظاما تاما

-8 اذا تطابق المثلثان فهما متشابهان

-9 اذ ا تناظرت زاويتان في مستطيل فهما متكاملتان

10 قياس زاوية الشكل الثماني يساوي 135°

جدول 1

الرقم	1	2	3	4	5	6	7	8	9	10
الاجابة	لا	نعم	لا	لا	لا	نعم	لا	نعم	نعم	نعم

القسم الثاني: Section 2

اجب بنعم او لا ثم انقل الاجابة الى جدول رقم 2 في الاسفل

* ABCD مربع مر بالرأس B أي مستقيم خارج المربع , ثم انزل علية من A,C العمودان AE,CF

اجب بنعم أو لا عن الاسئلة 1و2

.1 EF=AE+CF

.2 ينطبق المثلثان AEB,BFC

*رسم من منتصف احد اضلاع مثلث قطعة مستقيمة توازي ضلعا آخر. اجب بنعم أو لا عن الاسئلة من 3 إلى 6

-3 الموازي ينصف الضلع الثالث.

-4 المثلث متساوي الأضلاع

-5 طول القطعة المستقيمة يساوي نصف طول الضلع الذي وازتة.

-6 زوايا المثلث متساوية

*لديك نظام مسلمات بحيث ان العناصر غير المعرفة هي : نقطة ، وخط وكل خط يتكون من نقاط . العلاقة هي يقع على. والمسلمات هي

- يقع على كل خط نقطتان
- يوجد في النظام اربع نقاط فقط.
- يقع على أي نقطتبن خط واحد

اجب بنعم أو لا عن الاسئلة من 7 إلى 9

-7 عدد خطوط النظام هي 12

8- المسلمة 2 مستقلة
9- لاي نقطة يوجد خط لا يقع عليها
10- نهاية أي الاقتران f(x,y) في R2 لا يمكن ان نتأكد من وجودها

جدول 2

الرقم	1	2	3	4	5	6	7	8	9	10
الاجابة	نعم	نعم	نعم	لا	نعم	لا	لا	نعم	نعم	نعم

انتهى

Appendix C

Answer

☐ Order Question

Max Points Allowed

Raw Score: 0

Correct: 0
Incorrect 0

أحداث مرت على فلسطين في القرن الماضي

1- معركة القادسية	2- معركة مرج دابق	3- الاضراب العام
4- معركة حطين	5- الثورة الكبرى	6- عين جالوت
7- معركة اجنادين	8- معركة الزلاقة	9- انتفاضة اطفال

Start

السؤال الأول:(الاسئلة التي لا تحتاج الى ترتيب Regular Question)
اعط ارقام الصناديق التي تحتوى على احداث مرت على فلسطين في القرن العشرين.
الجواب الصحيح 3و9و5

The learners may select the boxes numbered 3,4,5,6 the question is a regular question and could be evaluated as follows:
Correct Boxes: 3,5,9
Student Response: 3,4,5,6
The number of correct boxes chosen :2
Total number of correct boxes :3
The number of incorrect boxes chosen :2
Total number of incorrect boxes : 6

$$\text{Raw Score} = \frac{\text{The number of correct boxes chosen}}{\text{Total number of correct boxes}} - \frac{\text{The number of incorrect boxes chosen}}{\text{Total number of incorrect boxes}}$$

$$\text{Raw Score} = \frac{2}{3} - \frac{2}{6} = \frac{4-2}{6} = \frac{1}{3}$$

Then the total score of the student could be calculated as follows:

$$\text{Total Score} = (\frac{1}{3}+1)\times 50 = \frac{4}{3}\times 50 = \frac{200}{3} \approx 66,6$$

السؤال الثاني: (الاسئلة الترتيبية Ordered Question)
رتب الاحداث التي مرت على فلسطين في القرن العشرين حسب تسلسلها التاريخي
الجواب: 3,5,9

The second question is an order question and could be evaluated as follows:
Correct Boxes: 3,5,9
Student Response: 3,6,5,4
Does the 3rd box come before the 5th box? (Yes) (1 point)
Is the 3rd box immediately before the 5th box? (No) (0 point)
Does the 5th box come before the 9th box? (No) (0 point)
Is the 5th box immediately before the 9th box? (No) (0 point)
The number of points taken :1
Maximum points one could get :4
Row score =0.25
Total score =0.25×100 =25
The student's total score for both questions
(25+66.6)/2=45.8 out of 100.

Joint Presentation (3)

University of Texas at Dallas

Bridging the Gap between Academics and Practitioners: Graduate Certificate Programs

PFDP ACADEMIC COLLOQUIUM – JULY 31 – August 1st , 2010

Mohammad Awad, PhD
Kimberly A. Aaron, PhD

I. Introduction

Local governments, businesses, and nonprofit organizations need talented, well-educated managers and staff to lead their organizations. However, many employees find it challenging to pursue graduate degrees because of financial restrictions and time constraints. Others may have concerns or fears regarding a return to school when a number of years have passed since receiving an undergraduate degree. This paper discusses the use of graduate certificate programs, which require fewer hours than a full graduate degree, as an alternative approach in addressing the educational needs of professionals who would benefit from an advanced education. Specifically, we will discuss programs that allow practitioners to take graduate classes in particular disciplines (local government management, nonprofit management, marketing, etc.) leading to academic certificates in that discipline. These certificates allow practitioners to gain valuable exposure to concepts that will help their organizations and will facilitate their own professional advancement without the time or financial requirements of a full graduate degree. They also provide students/practitioners with a springboard for continuing their graduate education through to a degree if so desired. This paper provides an overview of various certificate programs in the United States (U.S). and discusses the application of the academic certificate to higher education programming in Palestine.

II. Academic Certificate Programs in the United States

Background

Cohen, Eimicke and Ukeles (1995), in writing on education in the field of public management, observe that the challenge of training students to be prepared in their jobs is determining how to provide relevant and practical concepts and approaches to their work. The United States Bureau of Labor Statistics (BLS) has 23 major Standard Occupation Classification groups, with three additional sub-groupings for each major category. The BLS estimates that there are millions of jobs and tens of thousands of job titles in the U.S. economy. With the diversity of occupations within the U.S., developing meaningful graduate degree programs with a practitioner orientation can be a challenge for U.S. colleges and universities. Academic certificate programs provide institutions of higher education with an alternative approach to meeting the demand for specific programs, while providing potential students with choices in pursuing graduate-level education.

The Range of Academic Certificates in U.S. Universities

A multitude of academic programs exists across the U.S. and they are as diverse and varied as the regional economies in which they are found. Most reflect both local industry and local demand. Examples are identified and described below.

University of Southern Maine

Literacy

The certificate of graduate studies in literacy is offered to accommodate teachers and special education teachers, educational technicians, and other holders of baccalaureate degrees who do not want to complete all of the requirements for a master's degree, but who wish to obtain a basic background in literacy. Students who complete program requirements receive official transcript recognition of their work and a certificate from the literacy education program attesting to their completion of coursework in reading and writing instruction.

Holders of the certificate have the competencies and proficiency levels needed to plan effective literacy instruction for their students. Although credits from the certificate program may be transferable to a master's program, students who wish to matriculate into a master's program must apply separately for admission.

Mental Health Rehabilitation Technician (MHRT)/Community
The MHRT/community certificate program is especially suited for practitioners who work in the mental health system and desire training in psychosocial rehabilitation, and persons with prior graduate training who need flexible coursework to update their skills and knowledge in the psychosocial rehabilitation approach. Persons with a bachelor's degree and one year of direct experience in the mental health field may apply for the five-course sequence. The program can also lead to the new state employment specialist certificate.

Middle Level Education
The middle level education certificate program is designed to meet the professional knowledge certificate requirements for the middle level teacher endorsement in Maine and to provide a foundation for graduate work in middle level education. Students seeking middle-level endorsement are also required to meet the academic content area requirements as established by the State.

Performance Management Certificate
The certificate in performance management and measurement is designed to equip managers with the knowledge and skills needed to monitor and report on organizational performance, to present results-oriented information in alternative formats to diverse, nontechnical audiences, and to contribute to improving performance in public organizations. The certificate is a collaborative effort of the Muskie School's accredited public policy and management master's degree program and a research center known nationally for leading edge evaluation and technical assistance, the Institute of Public Sector Innovation. Students select four courses, 12 credit hours, including one required course and three courses from a listing of approved courses.

Community Planning and Development
The certificate in community planning and development has two major objectives: to provide students with a grounding in land use and environmental planning, economic development, law and policy analysis, infrastructure programming, and growth management; and to develop an understanding of economic, social, legal, ethical, and political contexts within which decisions about land use, economic growth, and environmental protection are made. These objectives are met through course readings, class lectures and discussions, case analyses, and problem-solving exercises in various community-based settings. Persons contemplating a career in local or state government or nonprofit organizations, and who are particularly interested in the fields of land use, economic development, and environmental planning are invited to discuss their goals with the coordinator of the certificate in community planning and development. Those who already practice in the field and wish to enhance their skills and understanding of the issues are also welcome in the program. The certificate requires the completion of 12 credit hours of coursework.

Seton Hall University
Graduate Communication Professional Certificate Program
The Department of Communications offers six professional certificates either as part of the Masters degree or on a standalone basis. Each certificate is comprised of four courses or 12 credits. If students choose to pursue a certificate and successfully complete it, they will be awarded a professional certificate. Graduate communication professional certificates allow students to pursue specialized graduate education in pertinent communication areas of interest. Students are able to study communication skills that will enhance their professional capabilities and expand their knowledge and experiences. Students are able to apply the skills and knowledge they develop through the program courses both during and immediately after completion. Students will earn a professional certificate upon completion and, if they choose, apply the 12 credits earned in the program towards the full master's degree in strategic communication. Students who are enrolled in the full master's degree program have the option of pursuing a professional certificate as part of their electives. Upon graduation, master's students who pursue a certificate will be awarded their master's degree

and the professional certificate. The six professional certificates offered include: 1) Strategic Communication and Leadership, 2) Intercultural Communication, 3) Organizational Communication, 4) International Communication, 5) Strategic Communication Planning, and 6) Public Relations.

The University of Texas at Dallas (UTD)

Graduate Certificate in Evaluation Research

A graduate-level certificate program in evaluation research is offered jointly by the Schools of Economic, Political and Policy Sciences and Behavioral and Brain Sciences. Students who complete this program will have an opportunity to gain competencies in the design and implementation of program evaluations in fields such as education, health care, human services, criminal justice, and economic development. The certificate in evaluation research program may be incorporated into graduate degree programs in either school, or may be taken on its own by non-degree seeking students. Students in the evaluation research certificate program are normally expected to have completed undergraduate courses in social statistics and research design; students lacking appropriate preparation may be asked to take needed courses prior to admission to the program. In order to receive the certificate, students must successfully complete three required courses and a two-semester long evaluation research project that culminates in a final report.

Graduate Certificate in Non-profit Management

The certificate in non-profit management is designed to provide an overview of the nature and context of non-profit organizations combined with skill-based courses to develop the competencies needed by non-profit managers. The certificate is intended for professionals already working in the non-profit sector, those working in private for-profit or governmental settings who would like to work or volunteer in the non-profit sector, and students without professional experience who seek to prepare themselves for non-profit careers. Completion of fifteen (15) semester credit hours are required to attain the certificate in non-profit management. Students may petition the program coordinator to include other graduate courses offered by the School of Economic, Political and Policy Sciences as guided electives. Courses from other institutions may not be applied to the required fifteen semester credit hours.

Graduate Certificate in Local Government Management

The School of Economic, Political and Policy Sciences offers a graduate certificate in local government management for local government professionals and for master's students who desire to broaden their knowledge of important issues and approaches employed by professional local public administrators. Local governments in the U.S. play an important role in our democratic system. They are the place in our democratic system where citizens have the most direct contact with elected and appointed officials on numerous issues. Requirements for admission to the certificate program are the same as for non-degree seeking graduate students. Completion of 15 semester credit hours is required to attain the graduate certificate in local government management and those hours may count toward a degree if the student completes all requirements for full admission as a graduate student

Graduate Certificate in City Planning

The graduate certificate in city planning is a 15 credit hour master's level certificate. The 15 hours earned in the Certificate program will count toward the Master of Public Affairs degree if students decide to continue their education. The academic focus of the proposed certificate is the basic elements of the body of knowledge of the field of city planning. These elements include the theory and legal elements of planning, developing and implementing plans, land use management, land use law and regulation, and functional topics such as transportation and housing. The certificate is intended for professionals already working in city planning in the public sector, those employed in private for-profit or governmental settings who work with planning and development projects, and students without professional experience who seek to prepare themselves for careers in city planning or local government. The 15 hours of course offerings incorporate the essential knowledge base of city planning. Students may petition the program coordinator to include other graduate courses offered by the school as guided electives; however, courses from other institutions may not be applied to the required 15 semester credit hours.

University of North Texas

Graduate Certificate in Human Resource Management (HRM)

The certificate in human resource management is designed to provide knowledge and skills related to a career in the field of human resource management. In addition, it will assist in updating the knowledge and skills of human resource professionals. Students pursuing certification in human resource management, take courses in such areas as organizational behavior, recruitment, selection and placement, labor relations, compensation, and leadership. The graduate certificate in HRM consists of 12 credit hours, chosen from the following courses: Managing Organizational Design and Change, Organizational Behavior and Analysis, Human Resource Management Seminar, Employment, Placement and Personnel Planning, Seminar in Labor Relations, Management Strategies for Public Issues, and Seminar in Compensation and Motivation Theory.

California State University, East Bay

Graduate Certificate in Project Management

The California State University, East Bay certificate in project management offers project managers a Project Management Institute (PMI)-approved way to complete the educational hours necessary to qualify for the Project Management Professional (PMP®) exam.

The Project Management Certificate is equally valuable to project managers who have not had the benefit of formal training or the benefit of a certification that recognizes their expertise and experience. Those professionals seeking to make a career change into project management or to advance into general management positions also will find the certificate appealing. The certificate aims:

- To give graduates a way to complete the educational requirement necessary to qualify for the PMP® exam
- To provide graduates a formal project management education that will increase their expertise and help them advance in their careers
- To provide graduates a distinction that recognizes their competency in the project management field

Drexel University

Graduate Certificate in Engineering Management

The Certificate in Engineering Management - an optional professional credential - is awarded to students who successfully complete four graduate-level courses from the M.S. in Engineering Management curriculum: Engineering Management I, Communications, Economics for Engineering Management, and Financial Management. This certificate program is a valuable professional resource for engineers and scientists who want in-depth exposure to skills and knowledge needed for management roles without having to commit to the entire program. The graduate certificate in engineering management provides:

- A solid introduction into Engineering Management through graduate courses in management, finance and economics.
- Courses that can be applied towards earning a full M.S. in Engineering Management
- Highly interactive, e-Learning method designed to challenge and engages students, while remaining convenient for the working professional.

Southern Methodist University

Graduate Marketing Certificate Program

The goal of the Graduate Marketing Certificate Program is to help expand the marketing experience of students, increase marketing skills, and expose students to new marketing perspectives and ideas. The program is differentiated by its integration of academic and hands-on learning. Classes are taught through a combination of methods, including the use of an MBA-level marketing textbook, case studies, team projects, and classroom discussions. During this uniquely designed program, students will:

- Network with executives, professionals, and entrepreneurs from a diverse group of industries and backgrounds
- Gain insight on the latest marketing trends and techniques
- Enhance student's marketing knowledge "today" instead of "someday"
- Learn from professionals with real-world business experience in marketing management
- Apply enhanced knowledge in a realistic, team-based marketing simulation

III. Opportunities for Certificate Programs in Palestine

Why This Topic Now?

There are many reasons for institutions of higher education in Palestine to consider graduate certificate programs. First, there are a limited number of graduate programs at Palestinian universities, and some universities do not yet have graduate programs. Consequently, the academic certificates could be a starting point in establishing new programs, and expanding the already existing programs. Second, the opportunity exists to leverage successful experiences in the U.S. with graduate certificate programs at Palestinian universities. Third, the graduate certificate program provides the opportunity to both academics and practitioners to exchange information for mutual benefit. Fourth, the expansion in the size of both public and nonprofit sectors in Palestine makes it necessary to prepare professionals with skills to run both sectors effectively. Finally, the opportunity exists to explore possible areas of cooperation between Palestinian universities and U.S. universities.

According to Jamal (2007, 28), the West Bank has the "richest associational landscape," and has the most diverse civic associations in the Arab world, where in 1999, "20% of its population was involved in associational life." The Palestinian NGOs play "an essential part in delivering economic and social services in the West Bank and Gaza [Strip] and in developing democratic institutions in Palestinian society (World Bank 1997, I-1). The manager of the nongovernmental organizations directorate at the World Bank emphasizes the important role of Palestinian nongovernmental organizations in the development process where the Palestinian NGOs in West Bank and Gaza form a major component of the civil society institutions and NGOs are considered the engine of development in the society (World Bank 1999, 44).

The number of NGOs in Palestine was estimated to be 926 in 2000. The size of the sector increased by 61.4% by 2007 with the number of NGOs then at 1,495 (Al Malki, Hasan, and Yasser 2008, 13). As of summer 2009, the records of the Palestinian Ministry of Interior indicate that 1,950 NGOs are registered in the West Bank. Communities in the Arab world suffer from poverty, lack of resources, and governments that are unable to meet the needs of their citizens. In addition, the non-governmental organizations (NGOs) in the Arab world face many problems compared to nonprofits in the U.S., Israel, and other developed countries, including a shortage of resources, lack of governmental funding and support, rough organizational structures, absence of rules and regulations, and lack of professionalism (Sullivan 2000). In contrast, the education rate in Palestine is considered the highest compared with other countries in the region. The statistics of the Palestinian Ministry of Education and Higher Education in 2005-2006 regarding general education in Palestine show that there are 1,078,488 students and 48,674 school teachers (http://www.mohe.gov.ps/ downloads/pdffiles/statisticE.pdf. Accessed February 3, 2010), which demonstrates the high value placed on education. Unfortunately, existing educational programs may not be sufficient in scope to meet future needs. Because of the conditions in and challenges for Palestinian communities, the continued development of highly educated managers, supervisors, and staff is essential to the successful growth and development of these communities. Therefore, it is worth investigating the opportunities that may be offered to individuals and organizations in specific disciplines through graduate certificates.

Certificates of Particular Importance to Palestinian Universities

A plethora of opportunities exists when considering options for graduate certificates. However, because resources are limited, the areas to which serious consideration is given should include those disciplines that provide the greatest benefit in the near term to Palestinian universities. Graduate certificates in local government, city planning, and nonprofit management could be of particular interest for two critical reasons. First, Palestinians are in the process of building their state, and developing talented public servants will be essential to the successful development of local governments. Second, the size of the nonprofit sector is increasing as it steps in to meet the needs of Palestinian society as it grows and changes. The Palestinian Bauru of Statistics in its census to the Palestinian communities in 2008 announced that there are 517 local governments in the Palestinian Territories, which are distributed as follows: 121 municipal councils, 12 local councils, 355 village councils or project committees, and 29 camp managers (Alquds Newspaper November 14, 2008).

Scientific research in the Arab world faces many challenges and difficulties, where the Arab countries spend less than 1% from their general budget on research or 0.3% of their GDP (http://www.wac.org.ps/images/

stories/pub/research/paper/paper2.pdf. Accessed June 11, 2010). Weaknesses exist in scientific research in Palestine. As in the other Arab countries, academics in Palestine see that academic certificates are more important than research, and diplomas are the top of academic achievements (http://www.wac.org.ps/images/stories/pub/research/paper/paper2.pdf. Accessed June 11, 2010).
International statistics shows that the amount of research that is published internationally in 2007 is 1,148,612, where the total of research papers in the Arab world is 15,000 (http://scholar.najah.edu/sites/scholar.najah.edu/files/conference-paper. Accessed June 10, 2010). The number of papers published in Palestine in 2007 was 212, compared to 89,013 papers published in Israel, and 1,345 in Jordan (http://scholar.najah.edu/sites/scholar.najah.edu /files/conference-paper. Accessed June 10, 2010).
Due to the facts mentioned above, we recommend the following graduate certificates to be considered by the Palestinian universities:

Graduate Certificate in Evaluation Research
As discussed earlier, the graduate certificate in evaluation research provides skills in the design and implementation of program evaluation. In order to receive the certificate, students must successfully complete three required courses and a two-semester long evaluation research project that culminates in a final report. The courses leading to the certificate in evaluation research are:

- Descriptive and Inferential Statistics for the Economic, Political, and Policy Sciences
- Evaluation Research Methods in the Economic, Political, and Policy Sciences
- An elective course approved by the certificate coordinator
- Evaluation Research, which is six credit hours.

Total requirements are 15 semester credit hours.

Graduate Certificate in Non-profit Management
The certificate in non-profit management is designed to provide an overview of the nature and context of non-profit organizations combined with skill-based courses to develop the competencies needed by non-profit managers. Completion of 15 semester credit hours is required to attain the certificate, including three core courses and two guided electives from the list below:
Core Courses – Nine hours

- Leadership in Public and Non-profit Organizations
- Non-profit Organization
- Non-profit Management

Guided Electives – Six hours from the following:

- Public Management
- Financial Management of Nonprofit Organizations
- Marketing and Communications for Non-profit Organizations
- Human Resource Management
- Organizational Theory
- Domestic Social Policy
- Policy Research Workshop

Graduate Certificate in Local Government Management
The graduate certificate in local government management is offered to local government managers who operate in a complex legal and political environment. They are responsible for the provision of varied services directly to citizens, such as land use planning, law enforcement, water and sewer services, and recreation. How the professional staff delivers services to the public within the political environment in which it works is the topic of many of the courses in this program. Requirements for admission to the certificate program are the same as for a non-degree seeking graduate student. Completion of 15 semester credit hours is required to attain the graduate certificate in local government management and those hours may count toward a degree if the student completes all requirements for full admission as a graduate student. Required courses in the certificate program are:

- Human Resource Management
- Government Financial Management and Budgeting
- Local Government Management.

Elective courses may be selected from among graduate courses that pertain to local government management, including"

- Local Economic Development
- Quality and Productivity in Government
- Information Systems in Policy Environments
- Community Planning

Graduate Certificate in City Planning

The Graduate Certificate in City Planning is a 15 credit hour Master's level certificate. The academic focus of the certificate is the basic elements of the body of knowledge of the field of city planning. These elements include the theory and legal elements of planning, developing and implementing plans, land use management, land use law and regulation, and functional topics such as transportation and housing.
The Certificate is intended for professionals already working in city planning in the public sector, those employed in private for-profit or governmental settings who work with planning and development projects, and students without professional experience who seek to prepare themselves for careers in city planning or local government. The following courses are required for obtaining the certificate:

- Community Planning
- Basics of Development
- Land Use Law and Development Regulation

Two electives are chosen from among the following:

- Transportation Planning
- Geographic Information Systems Fundamentals
- Urban Development
- Local Economic Development
- Neighborhood and Housing Conservation

IV. Summary and Conclusions

This paper introduces the concept and the idea of the graduate certificates as they are applied in U.S. universities. Our objective in this paper is to introduce possible graduate certificates that could be applied in the Palestinian Universities. In the Palestinian context, and from a public policy/public affairs point of view, we believe that graduate certificates in: evaluation research, non-profit management, local government management, and city planning are the best fit at Palestinian universities. These are not the only program areas in which certificates may be desirable, but are the ones for which immediate value could be identified. It is crucial for the Palestinian private, public, and non-profit sectors to work hand- in-hand with Palestinian universities to prepare professionals in all fields to be able to support the Palestinian State, and enhance the level of skills for their staff, in order to deliver the most effective quality of services to their communities, and citizens. This may not happen without providing adequate training through the graduate certificates mentioned earlier.

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Joint Presentation (4)

Teacher Professional Development Programs in Palestine: Changing Beliefs and Practices

Abstract

This paper explores the process of planning, implementing, and following-up teacher professional development programs (TPDPs) in Palestine focusing on the programs that are directed to mathematics teachers. It also describes teachers', supervisors, principals', and policy makers' beliefs about mathematics and mathematics teaching and learning, and the beliefs that TPDPs have about mathematics teaching and learning.

The study used qualitative methods, including interviews and document analysis, to collect data. The participants were chosen from two district areas in West Bank and included five policy makers, eight supervisors and training developers, four principals, and six teachers. In addition to interviews, training materials and policy documents related to teacher training and supervision were studied for the purpose of this study. The data obtained from these documents integrated and validated the data which were collected through the interviews.

The findings of the study suggest the necessity to improve the methods used in teacher training in a way that activates the role of the trainee teachers and reflects the content of the training in the process of teacher training. In addition, there is a need to provide teachers with better follow-up methods through and after their participation in TPDPs. Most importantly, TPDPs should be based on a clear vision of their objectives that is based on understanding the problems in student learning and current teaching practices as well as the desired behaviors and actions that help to mitigate problems.

The findings also indicated that most of the participants hold the instrumental view of mathematics where mathematics is viewed as a body of facts and procedures. Furthermore, their views about mathematics teaching and learning and the curriculum correspond with the instrumental view or with the content-focused approach in teaching mathematics.

The researcher concluded that there should be more emphasis on TPDPs that are planned on the district and schools level or what is called job-embedded professional programs. In parallel, trainers' competences should be upgraded so that they are more able to respond to teachers' needs in their contexts. Improving the way in which TPDPs is planned and implemented will have a greater influence on teachers' beliefs and practices.

Objectives or purpose of the study

The purpose of this study is to examine the process of in-service mathematics teacher training in Palestine. It explores, describes, and analyzes the process of planning, implementing, and following-up in-service teacher training programs.

Furthermore, the study explores the beliefs that teachers, supervisors, principals, and policymakers hold about mathematics and mathematics teaching and learning. It attempts also to see what beliefs about mathematics teaching and learning are advocated in TPDPs by studying training materials used in teacher training.

Thesis statement

The teacher education strategy asserts that qualified teachers are those who have a university degree in their subject area in addition to a degree in education. The strategy document indicates that 80% of the Palestinian teachers, by this definition, are unqualified (MOEHE, 2008), because most of these unqualified teachers do not have a degree in education. However, even for those who are qualified, the practical experiences offered by their pre-service training programs may not be adequate. For instance, prospective teachers do not spend adequate time practice teaching in schools, and the kind of feedback and support provided to them by their college educators is questionable (MOEHE, 2008).

As a result, the Ministry has been focused on developing professional development programs to compensate for teachers' lack of educational knowledge. TPDPs include developing the capacities of teachers, headmasters, supervisors, and administrators in areas such as student assessment, teaching methods, and instructional materials development. However, in spite of the efforts made by MOEHE to provide in-service training, there is a need to improve it, as demonstrated by a 2005 Ministry of Education evaluation of the in-

service teacher training programs in cooperation with the British Council (MOEHE, 2005).
Most of the initiatives that aim to improve teaching and teacher practices in the classrooms in Palestine focus on the knowledge aspect of teaching mathematics, which includes teachers' knowledge of mathematics, mathematics pedagogy, and mathematics curriculum. These initiatives neglect teachers' beliefs about the nature of mathematics and mathematics teaching and learning, which have a great influence on teachers' practices (Pajares, 1992). Considering teachers' beliefs about mathematics and mathematics teaching and learning while designing and implementing professional development programs is important to ensure the success of these programs. Meanwhile, the assumptions that policymakers and teacher trainers hold about mathematics and about mathematics teaching and learning influence how they define objectives for and design TPDPs.
In addition, the process of planning, implementing, and following-up effective TPDPs should follow specific steps and criteria. Thus, improving the effectiveness of TPDPs requires reviewing the process of developing these programs and exploring the beliefs that underlie these programs and the assumptions on which they are based. However, this study does not evaluate TPDPs. Instead, it explores the reality of these programs as perceived by teachers, supervisors, principals, and policy makers after five years of implementing the evaluation study by the Ministry and the British Council.

Conceptual framework

The importance of teachers' beliefs about the nature of mathematics is seen in the influence of these beliefs on teachers' teaching methods and the expected role they hold of the students as learners. Ernest (1994) asserts that teachers may share the same knowledge regarding mathematics and its teaching but their teaching practices differ because they do not hold the same beliefs about the nature of mathematics and its teaching and learning. Teachers' beliefs about mathematics can be held either implicitly or consciously, based on teachers' awareness of their beliefs.
Teachers may believe that mathematics is a discipline that has accurate results and procedures. Others believe that mathematics is a social construction activity where results are subject to change and whose validity must be judged in relation to social and cultural settings (Thompson, 1992, p. 127). Teachers' patterns or methods in teaching mathematics are influenced by their knowledge and beliefs about the nature of mathematics. Given that, beliefs are strong predictors about behavior and represent indicators about decisions that take place throughout life (Pajares, 1992, p. 307). Kuhs and Ball (1986) identify four views of how mathematics is taught. However, each of the four views reflects a position or belief about the nature of mathematics and its structure, and about how students should learn it. Table 1 summarizes the four views of mathematics as suggested by Kuhs and Ball (1986).
Table 1. Mathematics Teaching Approaches

Approaches	Role of learner	Role of teacher	curriculum
Learner focused	-Active participant in the exploration of ideas - Learner's needs and interests define the curricula and the instructional activities.	-Aids the students by questioning, challenging, and offering learning experiences. -Facilitate student learning by responding to what they do and say.	-The curriculum and the content of instruction are driven by the individual learner's interests and needs.

Content focused with emphasis on conceptual nderstanding	-For meaningful learning, students should construct their own understanding of mathematical ideas.	-Teacher identifies the scope and sequence of content to be learned but they remain flexible about the sequence in which topics are presented. -Teachers decide each class the best ways to use in teaching based on the content and kind of support students need to understand the new concepts.	-Record mathematical knowledge (facts, concepts, rules,..) is needed to determine the curriculum. -Students' ideas and interests are not primary in identifying the curriculum. -The priorities of learning are derived from the structure of mathematics.
Content focused with emphasis on performance	-Students listen to teachers and respond to their questions. -Students follow teachers' procedures in solving problems. -Students are not actively involved in exploring the content.	-Teachers are authoritative. They are responsible of helping students to master the curriculum. -Teachers are more likely looking for answers than the earlier two approaches.	-The curriculum is organized based on the hierarchy of the mathematical skills and concepts.
Classroom focused	-Students follow teachers' directions and complete assigned tasks.	-The teacher is an active instructor, and presents explanations of content clearly. -Teachers must monitor students' behavior	-School curriculum determines the instructional content.

(Kuhs & Ball, 1986)

However, there are different perspectives on how beliefs influence teaching practices. Researchers like Ernest (1989), Nespor (1987) and Lerman (2003) argue that it is important to identify teachers' beliefs to understand their teaching practices. Other researchers like Thompson (1984), Sztajin (2003), and Raymond (1997) have identified other factors that determine teachers' practices besides beliefs. The third group of researchers, like Roehler et al (1988), argues that teachers' practices are determined by their knowledge structures rather than their beliefs.

Raymond (1997) agrees with Ernest (1989) in the role that context plays in determining teaching practices, which may or may not be consistent with teachers' beliefs. However, Ernest (1989) identifies three causes for the mismatch between beliefs and practices (p. 27):

- The depth of the adopted beliefs and the extent to which they are integrated with other beliefs and knowledge, like pedagogical knowledge. When a belief is not integrated with other beliefs and knowledge, there is a high chance to observe inconsistency between the belief and actions.
- The teacher's level of consciousness of his or her own beliefs, and the extent to which the teacher reflects on his or her practices of teaching mathematics. Practicing reflection leads to a greater integration between beliefs and practices.
- Influence of the social context which includes, for example, teachers, supervisors, curriculum, and assessment procedures.

To summarize, beliefs play an essential role in defining teaching tasks and the knowledge needed to deal with these tasks. However, there are various factors, in addition to beliefs, that contribute to shape teachers' practices and can make them inconsistent with teachers' beliefs. These factors include teachers' level of awareness of their beliefs, teachers' tendency to reflect on their actions, classroom context, social norms and

school environment, educational priorities as viewed by teachers, students' needs as viewed by teachers, and school mathematics tradition.

Teacher Professional Development Programs

Teacher professional development programs (TPDPs) include all the efforts that aim to change teachers' knowledge, beliefs, teaching practices, and student learning outcomes by training teachers to teach competently in their classrooms (Clarke, 1994; Guskey, 2002; Lynd, 2005). TPDPs offer teachers opportunities for growth, learning, and development. It is a lifelong process rather than a particular event that starts with teacher preparation and ends with their retirement (Villegas-Reimers, 2003).

TPDPs have an important role in shaping teacher beliefs about teaching and students during the first years of their teaching experiences. In general, new teachers enter the profession with a great deal of enthusiasm to teach and to make a difference in students' learning. Teachers' experiences during their first years of teaching provoke them to reexamine their beliefs about teaching and about their role as teachers and the difference they can realistically make in students' learning. At this stage, teacher professional development programs have an important role in helping new teachers to maintain the enthusiasm and commitment toward teaching and their students' learning.

Smith and Gillespie (2007) classify teacher professional development programs into traditional professional development programs and job-embedded professional development programs. The traditional approaches include workshops or seminars that introduce new methods in teaching and attempt to increase teachers' knowledge and skills. The job-embedded approach is a longer-term process where teachers work together to study students' learning and experiment with new teaching methods to deal with teaching problems and students' learning difficulties.

Research suggests that the effect of traditional programs in teacher training is limited and brings little change to teaching practices (Dalgarno & Calgon, 2007). However, the ultimate impact of teachers' professional development programs is affected by many factors, including the methods used to deliver the content of these programs, the level and the type of follow up, as well as the characteristics of the professional development program itself which include the organization of the program and the methods used in the training (Clarke, 1994; Weissglas, 1994; Garet, Desimone, Birman, & Suk Yoon, 2001; Smith & Gillespie, 2007). Alternative programs, like job-embedded professional programs, have been found to have a greater impact on teaching practices and may well be more effective than traditional programs in supporting teachers' needs (Smith & Gillespie, 2007). In these alternative programs, training takes place in the school itself where teachers work together as a community of practice to identify students' learning problems and suggest possible solutions. Such training requires a particular learning environment, where the learning process happens through teachers' interaction. In this learning environment, teachers learn more from the knowledge they develop through activity, discourse, reflection, inquiry, and application (Jenlink & Kinnucan-Welsch, 1999).

Guskey (1986, 2002) believes that in order for teacher development programs to be effective, these programs should consider what motivates teachers to participate in them, and the process by which teacher change takes place. Guskey (1986) argues that TPDPs that encourage and maintain change are usually presented in a clear, concrete way and focus on a specific teaching skill. They must include practical ideas that teachers could use to promote student learning and outcomes. Those that are most successful approach change as gradual and consider the processes through which teachers change their practices and beliefs. Implementing the required change or the new desired practices should not demand a lot of extra work but needs "noticeable, sustained effort" (Guskey, 1995, p. 120). Most importantly, these professional programs should address teacher concerns and how any new practices will affect teachers' work. Teacher trainers should emphasize the importance of the new practices and what difference they can make. This addresses the importance of teachers' beliefs in influencing the process of change, since teacher beliefs affect how they internalize the content of their training programs (Mahlios, Engstrom, Soroka, & Shaw, 2007, p. 66).

Changing Beliefs and Practices through TPDPs

Teachers' beliefs that they bring with them to their professional development programs work as filters for their training experiences, so that teachers tend to adopt the practices and knowledge that are consistent with their current beliefs and ignore the others (Kagan, 1992; Stipe et al, 2001).

Borasi, et al. (1999) summarize the practices that have been known in mathematics education to be effective in challenging teachers to rethink their mathematical beliefs and practices. These practices include:

- engaging mathematics teachers as learners in learning experiences that model the content and pedagogy promoted by the program so they can experience and value the power of these activities on their students' learning;
- including field experiences in the program to provide teachers with the needed support and skills that help them apply the new practices in their teaching;
- providing teachers with opportunities and adequate time to reflect on their experiences as teachers and learners. The reflection practice will help teachers express their understanding for these experiences and their implications for their beliefs and practices;
- encouraging teachers to work in teams in their schools so they can form a community of practice that supports the individual teachers (Borasi, et al., 1999, p. 50-51).

Richardson (1996) argues that changing teacher beliefs can happen by helping teachers to identify and assess their beliefs in relation to their classroom actions, then transferring their unproved beliefs into reasonable or evidentially beliefs. Richardson (1996) suggested two sources for changing beliefs.

1. Through socialization and gained experiences within the context of schools.
2. Through pre-service and in-service teacher education programs.

However, the impact of in-service teacher training programs is stronger than the pre-service training programs in changing teachers' beliefs. Richardson (1996) argues that staff development programs that focus on teachers' beliefs will most probably lead to change in teaching practices. Additionally, staff development programs that approach learning to teach in a constructivist way are successful in engaging teachers in reexamining their beliefs and changing them.

Richardson (1992) identifies two conceptual frameworks for changing teachers' practices. The first approach deals with teachers as individuals, who need to be instructed to change their practices or be encouraged to implement new initiatives. Here, the desired reform or change is suggested by an external educator or policy maker who holds the assumption that teachers do not change by themselves. Those educators or policy makers suggest new initiatives and ask teachers to apply them in their teaching after training them to deal with these initiatives. The success is measured by the extent in which teachers implement the new initiative. The second approach deals with schools as organizations in which teachers work together to identify their problems and to suggest proper solutions under the supervision of an external consultant. This approach encourages teachers to explore their beliefs and knowledge and their relation to their classroom teaching practices. Here teachers assume responsibility for their learning process, and success is measured by teachers themselves. However, this approach in staff development is not easily implemented, because some teachers assume that the consultant has to identify relevant and practical solutions for their teaching difficulties or problems.

Fenstermacher and Richardson (1993) identify two processes to change teachers' beliefs and practices: elicitation and reconstruction. Elicitation refers to teachers' attempts to describe their actions and provide an explanation or rationale for them. It aims to support teachers as they set out an explanation or rationale for doing what they did. Reconstruction includes assessing the thought process that led to a specific action and judging the adequacy of its logical, moral, and empirical basis. It refers to reconstructing the premises based on their rationale. However, these two processes require teachers to think about and reflect on their teaching.

Similarly, Kagan (1992) argues that changing teachers' beliefs requires a conceptual change process, which happens through:

- helping teachers make their implicit beliefs explicit, since in most cases teachers are not aware of their own beliefs and they do not often describe or talk about them;
- confronting teachers with the inadequacy or inconsistency of those beliefs by showing that they are not able to explain some events or phenomena;
- providing teachers with opportunities to integrate and differentiate old and new knowledge by providing them with opportunities to examine, elaborate, and integrate new information into their existing belief system (p. 76-77).

This process of concept change can happen through self-reflection so that teachers can expose and confront their beliefs. Video-taping teachers' classes or having a critical friend are methods that encourage teachers to reflect on their practices and expose the underlying beliefs behind these practices.

Summary

Many factors interrelate to determine teacher teaching practices. These factors include their beliefs about the nature of their subject matter, the nature of learning, and their ability to perform specific tasks and affect student learning. There are many perspectives that describe the relation between beliefs and behavior. One of these perspectives argues that beliefs are good indicators for behavior and they work as filters for their experiences, so that teachers tend to adopt the beliefs that are consistent with their current practices and ignore the others (Kagan, 1992; Stipek et.al, 2001).

Teacher beliefs about the nature of mathematics and mathematics teaching and learning range from the instrumental view of mathematics to the problem solving view. The importance of these views lies in their impact on identifying the kind of mathematics that will be presented in the classrooms and how it will be taught. For instance, in the instrumental view of mathematics, teachers act as instructors who focus on teaching the mathematical skills or what is known the procedural knowledge. Consequently, students' role is to master these skills with minimum errors without exploring the interrelations between the mathematical concepts. Teachers who hold the problem solving view act as facilitators whose work is to pose problems and encourage students to explore these problems by applying their mathematical knowledge.

Efforts that aim to improve student learning must deal with teacher beliefs. Teacher professional development programs (TPDPs) have two forms: traditional and job-embedded professional programs. Traditional TPDPs are characterized by a hierarchical structure in training teachers, where teachers have little control over the content of the training. It is believed that the effect of traditional teacher professional programs is limited and brings few changes, if any, to teaching practices (Dalgarno & Calgon, 2007). On the contrary, job-embedded professional programs have been found to have a greater impact on teacher practices (Smith & Gillespie, 2007). However, the effectiveness of TPDPs, whether they are traditional or job-embedded, could be increased if they satisfy certain conditions and characteristics.

Modes of inquiry, methods of data source

Two methods were used to collect the data: interviews and document analysis. For the interviews, 6 teachers, 4 principals, 8 supervisors and teacher trainers, and 4 policy makers were interviewed. A list of questions was prepared. These questions covered the issues that should be explored. However, I did not limit or restrict myself to these questions. Instead, the interviewees' responses affected the flow of the questions.

Some documents were collected and analyzed as another resource of data. These documents include training materials that are used while training teachers, the teacher education strategy which the Ministry adopts and was declared on 2008, and others. Studying and analyzing these documents focused on identifying the characteristics of an effective teacher and her or his role as presented in these documents, and finding the desired teaching practices as advocated in these documents.

Data analysis

Data analysis was an ongoing process that began with developing the conceptual and analytic frameworks which guided data collection. After data collection was completed, focused analysis began with highlighting the preliminary insights and interesting observations that would create interpretive meaning of the data. However, analyzing qualitative data requires making sense of text so that these analyses provide answers to research questions (Creswell, 2008). Therefore, the research questions guided the process of exploring the collected data and capturing the critical findings.

To create meaning for the collected data, beliefs about mathematics and mathematics teaching as well as the characteristics of effective teacher professional programs, as were discussed earlier, provided the framework to analyze the collected data. That is, the participants' responses were studied and classified in terms of how researchers classify beliefs about mathematics and the relationship between beliefs about mathematics and the beliefs about what teaching should look like. Likewise, the collected data from the participants and the documents portray the process of developing, implementing, and following-up TPDPs. In the meantime, the

characteristics of effective TPDPs, as discussed in Chapter Two, provided insights about how these programs could be developed in the Palestinian context in the light of the shortages that these programs have.
In addition, the process of data analysis considered the repeated thoughts that were addressed by the participants which were not highlighted in the theoretical framework but arose as issues may influence teaching practices. This occurred by using the inductive approach to analyze the collected data from the interviews and the related documents. The inductive approach is used to analyze qualitative data and is based mainly on classifying the raw data into main categories, then identifying the emerging themes and concepts into these categories (Thomas, 2006). The main findings were identified from the emerging themes and are supported by excerpts of the data. Providing supportive data for the suggested themes adds validity and credibility to the research findings. For example, the participants talked about the assessment policy as a factor determine their teaching practices but this factor was not discussed in the theoretical framework.
Similarly, the collected policy documents and training manuals were studied in the light of the objectives of the study. For example, the mathematical content domains which are addressed in the training materials and the used training strategies guided the process of studying the training manuals. Likewise, the characteristics of good teachers and the advocated teaching practices as illustrated in the policy documents directed the process of studying these documents.

Key findings and conclusions

A high proportion of TPDPs are planned in the Ministry level without involving the interested teachers or teacher trainers in this process. The policy makers believe that teachers will not talk about their training needs and thus the principals, supervisors, and policy makers are more able to identify these needs. However, most of TPDPs that are planned in the Ministry level are donor-driven in the sense that the topic and the content of these programs are suggested from donors. This means that planning TPDPs in this level is not done based on a clear plan for teacher development, which also means that there is no coherent plan that links different TPDPs together.
While the policy makers indicated that teachers' needs and the appropriateness of the training to their classrooms and contexts are the main issues that they consider while planning TPDPs, the data shows that the teachers and the supervisors in this study feel that the content of TPDPs sometimes does not meet teachers' needs. However, this information should not be read separately from what was discussed earlier about TPDPs. TPDPs are planned based on what donors, policy makers, supervisors, and principals believe that teachers need rather than on their actual needs as they identify them.
The trainers in TPDPs are either supervisors or teachers. There are multiple perspectives about who should be teacher trainers. On the one hand, some believe that supervisors know best teachers' needs and the curriculum to consider while training them. Others consider that the dual role that supervisors have as supervisors and trainers limit supervisors' opportunity to follow-up and measure the impact of the training. On the other hand, teachers as trainers know the realities of the classrooms and the curriculum so they are able to touch their peers' real needs. In turn, others believe that teachers as trainers do not have adequate knowledge to be trainers. However, regardless of whether trainers are supervisors or teachers, they both follow similar methods in training teachers. The training manuals include instructions for trainers to follow in order to limit their personal effect. The teachers in the study consider that the training methods used do not engage them in the training, limiting their role as active learners, which influence the impact of TPDPs. Furthermore, the lack of systematic procedures to follow-up with teachers after their training in TPDPs and the limited professional support that are provided to them while teaching minimize the impact of TPDPs and limit their effect in changing teachers' practices.

The data revealed the participants' beliefs about mathematics, mathematics teaching and learning, and the curriculum. These beliefs were consistent with each other in the sense that a specific belief about mathematics creates specific and consistent beliefs towards mathematics teaching and learning, and towards the curriculum and the way in which it is implemented. The data did not reveal a huge variation among the participants regarding their beliefs. All the participants emphasized teachers' role as explainer of mathematical content while students mainly act as recipients for what teachers have to offer. However, the policy makers believe that students should have a greater role in constructing learning by posing questions and looking for

information while supervisors, principals, and teachers identified students' role in terms of students' responses to teachers' instructions.
The majority of the participants hold the instrumental view of mathematics where it is viewed as a body of facts, procedures, and skills. Similarly, most feel that teachers' role is to simplify the mathematical content, present it step by step without confusion, and monitor students' progress. In correspondence with this role for teachers, students have to listen to their teachers, follow their instructions, and respond to their questions. The participants see teachers' role as instructors or explainers rather than facilitators who design learning experiences and environments that enable students to construct new knowledge as active learners.
The reviewed training materials reflect similar beliefs about mathematics. Mathematics has three main areas or domains of knowledge: Conceptual knowledge, procedural knowledge, and problem solving. The focus in these materials is on the procedural aspect of mathematics rather than on the conceptual one or problem solving. In addition, the assessment system emphasizes tests as a method to measure student learning.
For policy makers, these tests should provoke teachers to plan in a better way for their teaching given the available time. In turn, teachers and supervisors, these tests force teachers to deliver all that is mentioned in the textbooks because it might be assessed in the standardized tests. Thus, the affect that the assessment system has on teachers' practices does not meet the assumptions beyond it as attributed by policy makers.
Reflective practice is not a component that is addressed in TPDPs. Moreover, there is an understanding about teaching that is incompatible with the essence of reflective practice. In turn, the policy documents address reflective practice as a characteristic that teachers should have to facilitate their professional growth and improve their teaching practices.

Teacher Change

As noted above, participants do not believe that TPDPs, as currently implemented, have brought changes to teachers' teaching practices. TPDPs might increase teachers' pedagogical knowledge but this knowledge has not been transferred to their teaching practices. Chapter Two discussed two models for teacher change as suggested in the literature. The first model - "practice first" - implies that teachers do not change their beliefs about best teaching practices unless they have evidence that the new practices affect students' learning positively. In turn, the second model - "belief first" - argues that changing beliefs precedes changing practices, so the desired practices should meet teachers' current beliefs in order for teachers to adopt the new practices. However, the data presented in Chapters Five and Six suggest that teacher change is not a simple linear process. That is, teacher change could not be simplified to one of these two arguments.
There are many factors that shape how teachers teach and determine whether training experiences will be transferred into classroom contexts. Transparency, accountability, active training experiences, follow-up, reward systems, supporting environment, supporting beliefs, and commitment toward student learning are examples of the issues that were raised by the participants and should be satisfied to support and accelerate the process of teacher change. Additionally, the existence of a clear strategy for in-service training programs will produce stability and reliability in the programs offered which will concentrate teachers' and trainers' efforts toward similar objectives. Such a strategy should address the following questions: What are the objectives of teaching mathematics? How far are we from achieving these objectives? What problems impede achieving these objectives? What resources can we provide to overcome these problems and what resources should be provided? What measures should be used to measure the differences on the short and long term? Satisfying most of these issues will require developing policies and strategies in the MOEHE in order to change teachers' perspectives toward TPDPs and about teaching as a profession.
I recommend that the Ministry establish a system and state policies that support and push the process of teacher change. This would include policies regarding accountability, teacher support and follow-up, and some sort of administrative or financial incentives for teachers to participate actively in TPDPs. Some may argue that putting administrative or financial incentives for teachers to participate in TPDPs will not necessarily impact their teaching practices. But I argue that if the Ministry adopts such incentives and, at the same time, identifies procedures to follow up teachers in their schools and provide them with the professional support that they need, teachers will be more accountable to implement what they have been trained on and towards their students' learning in their schools and communities. This also suggests that those incentives procedures could be linked, in some way, with the accountability system.

Currently and for many reasons, teachers do not trust the Ministry and consequently do not appreciate initiatives suggested by the Ministry to improve the process of teaching and learning. This suggests that the Ministry has to take initiatives and strategies that form a basis to build and increase the confidence and trust between teachers and the system or the Ministry. For instance, addressing and discussing teachers' concerns on the Ministry level regarding some of the Ministry's inputs which teachers have to deal with, such as the curriculum and the assessment system, is an example of such initiatives. In addition, the Ministry should inform the teachers clearly about the assumptions and the objectives that its initiatives have. For example, the current assessment policy which emphasizes student testing aims to encourage teachers to deal with the curriculum in an efficient and creative way. But teachers as well as supervisors understand it differently. They believe that in order to prepare their students for these tests, they have to address all that is presented in the textbooks and solve every single problem. It is clear that these two understanding are incompatible. Solving such conflicts demands more effort from the Ministry to communicate its policies with teachers.
To conclude, teacher change is a long process that needs both time and effort to occur. It should not be expected that teachers will change their teaching practices from their experiences in a single or few separate TPDPs. Apparently, change requires joint efforts from all parties who are involved and interested in the education sector: ministry, teachers, community, and families.

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Braekout Session (3)

Abstract
This paper focuses on Native Arabic Speakers (NAS) use of English modal verbs of obligation and necessity. The main questions that the research paper intends to answer are: Do NAS use the English modals in different contexts from those of Native English Speakers (NES)? Do NAS in using English modals, rely on Arabic presuppositions or English presuppositions? Does NAS' usage of the English modals reflect the pragmatic frameworks and norms specific to the English or Arabic environment? To answer the above three questions, the author spent 12 months as a participant observer of an Arab community composed of graduate students, university professors, medical doctors, and business people. Data analysis revealed that NAS use the English modals in contexts where NES do not. Second, in using English modals, most of the participants in the study used them according to the Arabic culture presuppositions regardless of the time spent in the United States. Third, it has been also found that NAS usage of English modals reflects the pragmatic frameworks and the social norms of their mother tongue environment. Thus, the results of the study indicate that the use of the English modals in spoken discourse is culture and context dependent.

Building Cultural Awareness through English Grammar Teaching: The Case of the English Modals

English is the only foreign language being taught in most of the Arab countries. In most of these countries learners begin learning English at the fifth grade level (approximately at age 11). Some of the Arab countries like Jordan begin teaching English at grade one and others such as Egypt starts at the fourth grade level. They continue learning English for at least an hour a day until they graduate from high school. Thereafter, learning English becomes a personal interest or a means for studying at the university level, particularly for science, engineering, and medical majors at some of the universities in the Arab world or as the main communication and learning tool for those who pursue their education in an English speaking country. Spending seven years (fifth to the twelfth grade) learning English is supposed to produce learners with an acceptable level of linguistic and communicative competence. Unfortunately, most students including those who continue learning English after high school graduation have a very poor level of communicative performance and only a very small number have a good level of linguistic competence, particularly in grammar and lexicon. Moreover, most Arabic native speakers who continue learning English at the university level, either undergraduate or graduate, including those who specialize in the English language or linguistics, continue to have a poor level of communicative competence at the sociolinguistic level. The reasons behind such results are beyond the scope of this article.

This study will focus on the usage of English modals by Native Arabic Speakers (NAS). In particular, it will try to provide accurate and provisional answers to the following three questions: Do NAS use English modals in different contexts from those of Native English Speakers (NES)? Does NAS in using the English modals rely on Arabic presuppositions or English presuppositions? Does NAS' usage of the English modals reflect the pragmatic frameworks and norms specific to the English or Arabic social environment?

Literature Review

English modal meanings and contextual implications are very complicated. The different meanings of obligation and necessity conveyed through English modals are not always clear and straightforward even for Native English Speakers (NES). For Native Arabic Speakers (NAS), whose native language expresses English modals through regular words, using English modals correctly, meaningfully, and appropriately when communicating with English native speakers, may prove very difficult. This might also be complicated by some cultural norms and notions such as subjectivity, assertion, explicitness, the degree of obligation and imposition, authority, and the formality of the situation that impacts greatly on (as will be explained below) the use of English modals by NAS. Thus, as Levinson (1983) states, there is some confusion about the pragmatics of obligation and necessity expressed through English modals and other languages (in this case Arabic) and these modals have different meanings and contextual implications in different conceptual frame works.

Some researchers have investigated the use of English modals in the written and spoken discourse

of nonnative speakers. For instance, Kasper (1979) concluded that native German speakers learning English as a foreign language are not always aware of the pragmatic usage of English modals and, in most cases, they translate English modals to German without taking into account their contextual implications. Moreover, it has been found that nonnative speakers use English modals in contexts where English native speakers would not. Thus, English modals constitute a problem for foreigners because of their "underlying meanings" and contextual implications (Cook, 1978).

To discover the reasons behind this misuse and faulty translation of English modals by non-native speakers (NNS) will require more studies on learners who have different mother tongues. However, there are some studies that have tried to investigate such phenomena. For instance, in their analysis of the written discourse of NNS, Basham and Kwachka (1989) and Kwachka and Basham (1990) found that NNS interpret the meanings of English modals within the domain of their cultural values, norms, and traditions. Altman (1990) attributed the inappropriate use of English modals by NNS to their misunderstandings of the sociocultural and pragmatic implications of modal verbs.

Methodology

The author collected data as a participant in and as an observer of real-life situations (celebrations, congregations, meetings, social visits at homes, informal gatherings) involving native Arabic speakers. Every effort was made to collect data from as broad a range of occupational and educational backgrounds as possible. However, most of the data were collected from graduate students and professional people, e.g., university and college instructors, medical doctors, and business people. The reader should note that the analyses presented here is taken only from spoken discourse. Thus, the work reported here is the result of a naturalistic inquiry approach to data collection and analysis.

The Study

The subjects of the study have varying levels of English linguistic proficiency. Their levels range from low to advanced. Further, their sociolinguistic competencies also vary from poor to very good. What gave rise to this study was the author's observation that even those NAS who scored between 500 - 600 in the TOEFL and have a high level of linguistic proficiency, who are currently pursuing graduate studies at American universities, or working as university professors, medical doctors, and business people, use the English modals of obligation and necessity inappropriately in some social situations. I suggest that the reasons behind such inappropriate use of English modals are that NAS use these modals in different contexts from those of Native English Speakers (NES) and according to pragmatic frameworks, norms, and presuppositions known and accepted only in Arabic speaking communities.

Results:

The Meaning of the Modals in English and Arabic

English modals have no equivalent in Standard Arabic grammar. When translating from English to Arabic, both root and epistemic meaning of modals are translated into Arabic using regular verbs, particles, or phrases. Notice the following English modals and their meanings in Arabic.

English Modal	Arabic Gloss	Part of Speech in Arabic
can	yastati^{c}, yaqdir	verb
will	sawfa	particle
must	yajibu 'an	verb + particle
should, ought to	yajibu 'an	verb + particle
would (past habit)	'i^{c}tada ^{c}ala	verb + preposition

When speaking English, NAS may have in mind not only the Arabic meaning of these English modals, but also Arabic cultural presuppositions, norms and traditions that in most situations differ from English ones. Both factors result in inappropriate use of the above English modals. In the following sections, a discussion of English modals as used by NAS, including some examples, will be presented.

WILL

In social situations native English speakers use "will" for making a request as in

1. Will you teach me how to drive?

It has been noticed, however, that none of the native Arabic speakers who were observed used will to make any request. In most cases they used will to indicate something that will occur in the future as the following examples illustrate:

2. On Saturday in sha'a Allah (by God's permission), June 24 we will have a party. Can you come?
3. Mu'nis will go to Spain next month in sha'a Allah (by God's permission).
4. In sha'a Allah (by God's permission) I will graduate next May.

Notice in examples #2, #3 & #4 will is used as a future tense with the Arabic phrase in sha'a Allah (by God's Permission). The reason behind the use of this phrase in statements that indicate something will happen in the future is that Muslims have been commanded in the Holy Quran to say this phrase whenever they plan to do something in the future "Nor say of anything I shall be sure to do so and so tomorrow without adding so please Allah" (The Holy Quran, Chapter 18, Verses 23-24). This phrase is misused and misunderstood by some native Arabic speakers. Some of them use the phrase at the end of a statement in order to find an excuse or mean maybe if the speaker could not fulfill his/her promise. The person who has received the invitation in example #2 above said to his invitee:

5. I will come to the party in sha' Allah.

But, he failed to show up. When his friend met him next time, he asked him why didn't he come? You promised to. He replied, I did not promise, I meant I will come if I can or if God permits. In such social situations, particularly in socializing with English native speakers, it is inappropriate to use will because according to the English native speakers' social rules such usage indicates that the speaker will attend the party definitely. Definitely, such misuse of this English modal (will) will result in miscommunication and portray the speaker as a person who does not keep his word.

MUST

Another faulty use of the English modal will that has been observed in some social interactions is in giving advice. NES use English modals in a specific order according to the speaker's degree of authority, and / or conviction, or the urgency of the advice. They use the following English modals in the following order: might/could, should, had better, must, and will. Might/could is used when the urgency of the advice is not serious while will is used when it is very serious. NAS have been observed using must where English native speakers use will. The root modal must carries the meaning of obligation, necessity and requirement imposed by a figure of authority (Lyons, 1977). But, will as used in social interactions, indicates certainty and urgency of the advice. In the example below a native Arabic speaker addressing his close friend who has been suffering from depression for a while and the situation is very serious.

6. You must see a doctor.

In Example #6 native English speaker would only use must to indicate necessity. He/she would use will as part of a question (e.g. will you see a doctor?) or as a command (e.g. You will see a doctor, won't you?) to show the urgency of the advice. But, I believe that NAS use must only and I never heard a NAS use will in such situations. This is because in teaching English, the pragmatic use of English modals is overlooked and not emphasized. Rather, the form and the meaning receive a lot of emphasis at the expense of the pragmatic aspect. In case of the modal will, it is always being taught as an auxiliary verb that must be used for expressing a future tense only. A second reason might be L1 (Arabic) interference. Must in Arabic means yajibu 'an while will means sawafa which is a particle used before the Arabic simple present verb to indicate a future action. Thus, from a native Arabic speakers' perspective, using will does not make any sense unless they are taught explicitly that will or must could be used in such situations to convey certainty and urgency.

In addition, some participants use the modal must according to Arabic cultural norms and presuppositions. Their perception of what is necessary and obligatory is implicit in the meaning of must and have to (Palmer, 1990). For instance, a close friend of a family whose teenage son was giving them a hard time said to him:

7. You must obey your parents. God will not be pleased with you and will put you in hell fire if you keep annoying them. We are Muslims. Do you understand what that means? We have a different religion and a different culture. You must work hard to please your parents and your God. Even you must sacrifice your life to please your parents and your God. Do you know that one of the most beloved deeds to God is one's obedience to his/her parents. Allah will not be pleased with you until you please your parents, our prophet said. You must promise me now that you will stop disobeying your parents. O.K?

The use of must in the social situation above reflects the social and cultural norms in the Muslim and Arabic culture. Such use of must, among Arabic native speakers is mandatory. For English native speakers, this sounds very natural even in this context. Thus the use of must in such situations does not constitute a problem.

HAVE TO

According to Gerhard (1991, p. 539) the periphrastic modal have to indicates "the existence of certain norm-based procedures that compel one to carry out a particular activity in a particular way." Moreover, the meaning of this modal (have to) is indeterminate, subjectively gradient, and often culturally stereotyped. Its usage, as a modal of obligation and necessity differs across the dialects of English and societal structures (Collins, 1991). Thus cultural norms and traditions specify how a certain group of people do things according to their cultural values. Notice the following example where a husband is talking to his wife about an invitation he received from an acquaintance with whom he did not like to socialize:

8. "If you receive an invitation from someone, you **have to** go. He [his friend] invited me. I have to go. I have no choice. Our prophet encouraged us to do so".

From an American cultural perspective the use of have to in this context is appropriate because the speaker might feel an obligation to go. Also, from an Arabic cultural perspective, the invitee must go unless he/she has a very strong and valid excuse. This is because Muslims like NES are encouraged strongly to accept invitations from their friends and relatives.

CAN

In social interactions the English modals can / could are also used to ask for general or specific permission. Native English speakers in most cases use the historical past tense forms of the modal can to soften their requests. Arabic native speakers have been observed in most instances employing the historical present tense in their requests as in the following examples.

9. Can you help me next Saturday in my move?
10. My wife took the car can you give me a ride to the airport?
11. The teacher for the senior boys' class is absent can you go instead of him?

In response to questions #9, #10, & #11 above, all replied with "Yes, I can". Thus, since ENS also use can in such social situations, the use of can instead of could in asking for help or permission by NAS is not a problem. However, usage of can instead of could might make the native Arabic speakers be perceived as being aggressive in their requests particularly when communicating with native English speakers.

SHALL

The problem with the modal shall that has been observed is that it is used in contexts where it is more appropriate to use should. It is used in two ways. First, it is used for giving an invitation as in

12. Shall we go to the mosque? (An invitation)
13. Shall we eat?(As in let us eat.)

In this context it does not pose a problem because native English speakers in such contexts alternate shall and should. But, the problem is in using shall for giving advice. For instance, in a gathering at a friend's house for dinner, one evening, the time for the fourth prayer came. One of the invitees said

14. Shall we pray? (An invitation)

Using shall in this context is inappropriate because the prayer is an obligatory thing for Muslims and they are encouraged strongly to perform their prayers on time particularly the fourth prayer. Interestingly enough a native English speaker was present who said to the speaker who called for the prayer:

15. Should we pray? (That is, it is advisable that we pray now.)

Discussion:
Arabic Pragmatic Presuppositions and Sociocultural Values

A presupposition is a "proposition whose truth is taken for granted . . . without which the utterance cannot be evaluated" (Green, 1989, p. 71). The world of any specific community is presumed to be mutually known among its members. These mutual, agreed upon and shared values, beliefs, and pragmatic assumptions that determine what is appropriate, required, or necessary, profoundly affect the process of communication and may cause cross-cultural misunderstanding (Stalnaker, 1991; Ney, 1993). Such presuppositions, values, and beliefs are found to be transferable from students' native language to the target language (Gonzalez, 1987; Schachter, 1983; Strevens, 1987; Schmidt, 1993).

The target language beliefs and presuppositions are sometimes rejected by foreign language learners consciously. Several individuals have been observed dealing with their native English speaker close friends and acquaintances according to the Arabic cultural values and beliefs although they were aware of the target language cultural norms. Such sociolinguistic behavior poses severe problems and serious miscommunication among the interlocutors. An interesting example is using linguistic formulas such as "would you please bring more bread", "Could you stop on your way and pick up Omar (their child) from school " even when requesting things from close family members. NAS in such situations drop the modals would and could from their requests. Thus, for NAS requests such as "Stop on your way and pick up Omar," "Bring more bread" are appropriate and acceptable but for NES they sound impolite, cause irritation, and even lead to the non execution of the requests.

On the other hand, some Native Arabic Speakers who have been in the US for almost twenty years deal with their NAS friends according to the American cultural norms pertaining to perception of time and punctuality, money, telephone etiquette, and family relationships, to mention only few. This has caused them a lot of problems in the community to the extent that many individuals boycott them and their family. "They are westernized" is the term that people in the community use when talking about them and how they deal with their friends. Such individuals have a very high linguistic and sociocultural proficiency. But they are very conscious and very selective when it comes to cultural values. In the following case, when a NAS went to shop at his acquaintance's grocery store, he entered, greeted the owner and said" Can I buy this." The owner reacted angrily and irritated. This is because such polite linguistic formulas are not necessary in the Arabic culture in such situations and even sound superficial and silly.

Participants such as the grocery owner's understanding of the presuppositions and beliefs of western culture are very limited and their use of English is based on the Arabic language world and its sociocultural frameworks. Some of these participants' poor sociolinguistic proficiency is attributed to a conscious choice that they make not to adopt the western cultural values and traditions in dealing with westerners and foreigners. Also it might be ascribed to their limited understanding of western culture even though some of them have been in the west for more than ten years. This confirms the argument that some researchers make that there may be a very weak connection between linguistic proficiency and exposure to the target language's social norms on one hand and the willingness or ability to assume the foreign/second language culture (Adamson and Regan, 1991; Schmidt, 1983; Schumann, 1978).

Rather than adopting the English cultural values in communicating in English, most of the participants in the study referred to their Arabic cultural values and traditions when communicating with native and nonnative speakers. These traditions are not shared by members of the Anglo-American culture. Some of the values that are fundamental to the Islamic culture are: obedience to and respect for parents and older siblings; respect and appreciation for teachers; supreme value of education for the well being of the individual and the society; dealing nicely with ones neighbors and helping them; visiting and taking care of one's sisters when they are in need; group solidarity and harmony; respecting and taking care of the elderly; helping poor people and taking care of orphans; and visiting the people. These cultural values and traditions are reflected in the Arabic sociocultural framework, thought processes, and personal views. For instance one of the participants commenting on the characteristics of the good son states that

> In my opinion he [the good son] **must** bring happiness to
> his parent's life and try to help them by anyway even

> though by making simple things like washing dishes
> and cleaning floor and other things that reduce tiredness
> of his mother, and also by adopting some of his father
> duties, another thing he may please them by obeying his
> parents and doing everything they want . . . .

Although many of the aforementioned values do exist in Anglo-American culture, English native speakers might find it strange when these values and traditions are expressed through the subjective root modals such as must.

Summary, Conclusions and Implications for Foreign Language Teaching

The observations documented in this study indicate that the use of the English modals by NAS in spoken and written discourse is determined by Arabic cultural presuppositions and cultural values. NAS who conduct their lives according to the principles of the Islamic religion, sociocultural constructs, and presupposed values use English modals differently from native English speakers on topics such as family relationships, duties towards others, and traditions. Such usage might be attributed to the fundamental differences in obligation, necessity, and adherence to sociocultural norms and codes between the western and the Islamic cultures. Living in the target language culture for a long period of time (2 -10 years) does not necessarily mean that the person has adopted the beliefs and presuppositions of the target culture even though he/she has achieved a high level of linguistic proficiency.

Teaching English modals should not be limited to the explanation of their forms and structures. Foreign language teachers should present the semantic and pragmatic aspects of the modals as well. Contrasting the cultural norms, traditions, and sociocultural presuppositions of the western culture and those of the Islamic culture might be an effective way to increase learners' awareness of the fundamental notions and values accepted in each culture. Analyzing the use of the English modals in native speakers' spoken and written discourse might be an effective way of teaching them provided that the teachers explain the cultural norms and traditions that underlie their use. Documentary films and movies are rich sources of spoken discourse that can be observed and discussed. Magazines and newspapers and other written documents may serve as real-life situations from which many excerpts can be taken for analysis and discussion. Analyzing nonnative speakers' anonymously recorded spoken and written discourse can also provide very effective ways for teaching the correct use of the English modals by highlighting how the native speakers use them in similar situations. Finally, contrasting the modals in the target language and those in the students' mother tongue might also be an effective way of preventing negative transfer where the modals in L1 and L2 are very different such as is the case in English and Arabic.

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Braekout Session (4)

Factors Affecting Adoption of E-learning Paradigm: Perceptions of Higher Education Instructors in Palestine.

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Abstract

E-learning paradigm has grown significantly in the tertiary education sector in Palestine. For Palestinian education, e-learning has become a necessity rather than a luxury to mitigate the negative effects of the ongoing Palestinian-Israeli conflict on the access to quality education. Substantial investment has been made in developing the e-learning approach since 2002. However, the use of e-learning by higher education instructors is still underutilized and considerable efforts should be made to enable them to take full advantage of the potential of e-learning. Thus, the purpose of the research reported in this paper is to investigate the factors that affect the attitude of higher education instructors towards the adoption of e-learning through a proposed Technology Acceptance Model (TAM) with multidimensional; socio-technical and organizational factors. Semi-structured interviews with different teaching staff at Birzeit University from a cross section of different academic programs were conducted to identify patterns and variations in their experiences, perspectives, and interpretations about the adoption of e-learning. The preliminary study findings show that instructors have positive attitudes to embark on e-learning initiatives. This research further demonstrates that individual characteristics and technological factors have a significant influence on instructors to adopt e-learning. However, organizational factors were found to be the most significant determinant for adopting e-learning. Political will and the capacity of the university to respond quickly and appropriately to the transition change is crucial to facilitate wider adoption. In practice, this requires decision makers to take an active interest in and provide visible support for the e-learning approach in order to 'bridge the chasm' between early adopters and the early majority and promote the rate of diffusion of the e-learning approach.

Keywords: E-learning paradigm, TAM, adopters, bridge the chasm, Palestine.

1. Introduction

The swiftness of ICT developments opens up the possibility for a new paradigm of teaching and learning process. E-learning has been internationally recognized as a significant approach for improving the quality of learning for all by facilitating 24/7 access to education and by supporting a collaborative learning process (Watson et. al, 2004; Cruthers, 2008). The effectiveness of such approach, however, is constrained by fundamental issues such as acceptance, which impact teachers and learners' abilities and willingness to utilize this style properly. Thus, there is a need to acknowledge the importance of assessing readiness of organizations, teachers, and learners to adapt this learning approach (So and Swatman, 2006). According to Thowfeek and Hussin (2008), special attention should be paid to teaching staff in the implementation process of an e-learning system, as they play a central role in the effectiveness of online delivery learning

Educational development in Palestine is described as a challenging experience due to the ongoing Palestinian-Israeli conflict and repeated emergencies. For many years the educational services have been deeply affected by the frequent closure and mobility restrictions particularly since the Al-Aqsa Intifada (meaning "uprising" in Arabic) in September 2000. This has been exacerbated by the Wall which the Israelis began to construct in June 2002, which cuts through a number of cities and villages and which has created barriers to movement, separating teachers and students from their education institutions (PMEHE, 2004). These politically-driven demands clearly demonstrate the need for cutting-edge technology to enhance access to quality education for all students. Therefore, e-learning has become a necessity rather than a luxury (British Council, 2006) in a country where even ambulances and pregnant women can be delayed at roadblocks for hours and suspects are detained (Guest, 2004). With the cooperation of many international organizations, substantial investment and considerable efforts have been made in developing the e-learning approach since 2002. However, the use

of e-learning by higher education instructors is still underutilized. Since e-learning is a new approach in the context of Palestine, its early acceptance is important for its effective introduction.

The research literature on adopting e-learning has grown significantly. Much of the literature in developed countries examines the characteristics of individuals while in developing countries most studies focus specifically on access to technology and contextual factors (Andersson and Grönlund, 2009). In the context of Palestine, university staff capability and inclination to adopt e-learning is rarely considered. Therefore, the main purpose of this study is to investigate the factors that affect the attitude of academic staff at Birzeit University towards the adoption of an e-learning approach through a proposed Technology Acceptance Model (TAM). As there is no standard set for TAM, the proposed adoption model is a holistic approach using multi-dimensional, socio-technical, and organizational factors (Nanayakkara and Whiddett, 2005) to provide a more comprehensive understanding of the considerations for successful implementation of e-learning. This can help an organization to identify the most important strategic issues it will face when transitioning to e-learning.

The remainder of the paper is organized as follows. Section 2 covers the literature review from recent studies of the context of e-learning implementation and adoption. Section 3 looks at the e-learning initiative in Palestine. Section 4 presents the methodology applied for this research while Section 5 presents the overall findings and discussion of the results of the proposed acceptance model of e-learning based on the Palestinian context. The paper closes with the conclusion and suggestions for future research.

2. E-learning Adoption

In contemporary information system research, a number of studies have investigated how and why individuals adopt new information technologies based on well-known theories (Venkatesh et al., 2003). One approach has been to consider individual acceptance of new technologies according to behaviour and intention (Davis, 1989; Taylor and Todd, 1995) based on the Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975). According to TRA, attitudes towards behaviour and subjective norms are the core constructs of behavioural intention. One method that is widely applied and based on TRA is the TAM developed by Davis (1989). Davis posits that an individual's intention to use a system is determined by two primary belief factors: perceived usefulness and perceived ease of use. Other researchers have studied the adoption of new systems according to the characteristics of the new technologies based on the perspective of Diffusion of Innovation Theory (DIT) (Rogers, 1983; 2003). DIT posits characteristics of users and tools that influence the early adoption of new technologies (Rogers,1983; 2003). These characteristics include the relative advantage, compatibility, complexity, trialability and observability. Based on these theories, several technology acceptance models (TAM) have been formulated, incorporating different constructs of determinants of users' intention to accept new technologies (Venkatesh et al., 2003). Thus, there is no standard set of TAM.

In the field of e-learning, several studies reveal different factors that have significant effects on the academic staff adoption to e-learning (Thowfeek and Hussin, 2008). Schifter (2000) among others, investigated the factors that support or inhibit intention to adopt e-learning. He found that motivation factors were personal motivation to use technology in teaching, opportunity to improve teaching or develop new ideas, opportunity to diversify program offering and greater flexibility for students while factors that inhibit the academic staff include lack of technical support provided by the institutions, lack of release time, concern about the faculty workload, lack of grants for materials/expenses, and concern about the quality of courses. McNaught et al. (2000) added that issues related to policy change and funding are other factors that have influenced the adoption and use of an e-learning approach. A study was conducted by Nanayakkara and Whiddette (2005) who investigated the intention of academic staff in a polytechnic in New Zealand to use e-learning. They emphasized that the intention to use e-learning is significantly related to three key categories: individual characteristics and individual perceptions, e-learning system characteristics and external system characteristics, and organizational support and organizational characteristics. Agboola (2006) also evaluated the awareness and perceptions of academic staff in using e-learning tools at the International Islamic University Malaysia. He found that e-learning training

and e-learning confidence were of practical importance in predicting both e-learning adoption and e-learning readiness. Thowfeek and Hussin (2008) also revealed several factors that potentially influence e-learning acceptance by the Sri Lankan higher education instructors: students and instructors' readiness, which includes awareness, training and confidence; the need for e-learning, i.e., the type of program or courses suitable for this mode; infrastructure; institutional support; motivation and incentives; and the e-learning system itself.

Attitude towards e- learning initiatives also have an influence on teaching staff involvement (Breen, 2001). According to Rogers (2003), adoption of a new innovation technology among the members of a social system takes time. There is what is called an adoption curve for innovation that illustrates the rate new ideas and technology spread through cultures. This model classifies adopters into five categories; innovators, early adopters, early majority, late majority, and laggards. According to Moore (1999), it is more likely to cross the 'chasm' between early adopters and the early majority, increasing the rate of diffusion. To do so successfully, methods and procedures to facilitate wider adoption are required. In this issue, Shannon and Doube (2003) highlighted that, in the change process, there are challenges for universities to: further develop and disseminate a culture, policies and strategies that value web-supported teaching, provide support to alleviate time and workload pressures, provide adequate staff development, and training and provide infrastructure and tools to meet the needs of teaching staff and students.
In the same vein, Andersson and Grönlund (2009) propose a conceptual framework for the challenges for e-learning with a particular focus on developing countries. They group the challenges into four major strands: characteristics of individual teachers and students, course content design and delivery, technological challenges, and contextual challenges. They point out that teachers generally are more motivated and committed when they feel supported by their schools. The schools can support the teachers by providing technical support, training, assistance, or just showing the commitment of the institutional leaders. Andersson and Grönlund (ibid) further indicat that several papers address how beliefs and attitudes of decision-makers in a political system will affect the growth of both technology and e-learning in a country. Political support from policy makers will ensure that appropriate policies are made and also encourage schools to adopt e-learning.

To sum up, the value of e-learning to the education process will rise with the increasing number of adopters who may use the innovation to its fullest potential. Therefore, the effectiveness of introducing e-learning requires early acceptance by academic staff who play an important role in the implementation process.

3. E-learning in Palestine

Educational institutions in Palestine are consistently endeavoring to provide quality education for all in situations of emergency and crisis. The increased demand for education and the limited resources available for traditional learning coupled with physical and security obstacles makes the proposed e-learning innovation a viable program (EL-Harazin, et al., 2007).

One of the most significant implications of the ongoing conflict in Palestine is ICT proliferation. Palestinians consider ICT an indispensable tool for their survival and life continuity and to facilitate the emergence of more connected societies whose fabric becomes consolidated through access to the Internet and information (Saidam, 2007). As a consequence, for Palestinians, using ICT became a staple feature of policy recommendations from the international community such as the World Bank, the United Nations Development Programme (UNDP), the European Union and others (Zuriek et al., 2006). Access to the Internet started as early as the beginning of the 1990s. Palestine, and in particular Birzeit University, was the first in the region to connect to the Internet (Rabayah et al., 2008).

Recently, there was rapid growth of e-learning across the higher education sector in Palestine. Almost all universities in Palestine are offering some type of online education. Birzeit University is considered one of the pioneering institutions in Palestine in an introducing e-learning initiative. In March 2002, Birzeit University developed a portal called Ritaj (meaning "the great portal" in Arabic) which allows on-line access to course materials and some administrative services. Students can register for their classes, exchange information, receive

course messages from their instructors, search the library for books, access course materials, look up their grades, and stay updated on their academic and financial records. On the other hand, instructors post lecture notes and communicate with students via bulletin boards. In 2002, over 2000 academic staff and students utilized Ritaj. This was fundamental to enable the University to complete the academic semester in August 2002 despite closures, curfews, and other disruptions. Students who had limited access to the classrooms could still participate and learn using the Ritaj portal.

Since 2005, many e-learning donor-funded projects started. Among them, the Mediterranean Virtual University (MVU) is a two-year EU-initiative which was launched in 2005 by the Danish Aalborg University. The project is a collaborative effort of eleven Mediterranean and northern European universities aiming to design online engineering and information technology degree courses, pilot them locally and internationally, and then enable learners globally to study online. The Unit for Learning Innovation (ULI) team at Birzeit University developed four courses: Introduction to the World Wide Web; Software Development and System Programming; Programming for the World Wide Web, and Coding and Information Theory. BIZREH is another example in which the ULI team developed a number of e-enabled courses such as: chemistry and Math for 9th grade; two undergraduate courses, English for Journalists and English Communications; and one post graduate course on Computer Modeling of Water Distribution Systems. MedForist (EUMEDIS Program) was also a donor-based project to develop e-business programs including e-Commerce, Enterprise Resource Planning, Customer Relations Management, and Supply Chain Management. Another unit at Birzeit University involved in developing online courses is the Ibn Rushd Unit. This unit has also developed many courses including: Psychological Foundations of Education; Introduction to University Teaching; Palestinian Labor Law; the Political System in Palestine; Principles of Palestinian Commercial Law; and Coronary Heart Disease. The learning management system, MOODLE is now a widely adopted technology at Birzeit University and all courses are delivered face to face and online.

For public schools, Palestine is still in the process of planning for the e-learning approach. For example, the Palestinian Educational Initiative (PEI) was launched in 2005. The overall objective of the PEI is to assist the Palestinian people in fulfilling their commitment towards integrating ICT in the education system within a model of public/private partnership. The Ministry of Education and higher Education, government and non-government stakeholders and local and international organizations such as the Massachusetts Institute of Technology (MIT), Birzeit University, the World Economic Forum, UNDP, and other business firms are encouraged to be involved in the implementation of ICT related initiatives (PEI, 2005). However, PEI was halted due to political considerations. A new cooperation programme "e-Learning Curriculum in Primary and Secondary Education- 2008-2011" with Belgian support is under way to help develop a national e-learning strategy for the Palestinian education system.

4. Methodology

Qualitative research interviews are widely used where exploratory work is required, such as introducing new technology (Bryman, 2005). Since qualitative data allows for value-driven interpretation and better understanding of the real situation (ibid), semi-structured interviews were conducted with 12 teaching staff at Birzeit University, from a cross section of different academic departments (Education, Psychology, Nursing, Biology, and Accounting). Each interview lasted approximately 40 minutes.

The type of questions include both opened and closed ones that were derived from the literature review. The main questions asked during the interviews were: What are factors that motivate or hinder teaching staff to adopt e-learning approach? What changes are required to foster a collaborative e-learning environment?

The analysis of the participants' perspectives were structured into three major themes which represented the key elements of the proposed TAM: social/individual characteristics and technological factors, and organizational/ contextual factors. The following section presents the results of the study.

5. Findings and Discussion

5.1 Social/ Individual Factors

There was a consensus among participants that e-learning is an appropriate delivery tool for providing all students the opportunity to access course materials even though not all students have access to the Internet. Access 24/7 allows students to learn at their own pace anytime and from anywhere. A further advantage of e-learning indicated by many participants was online collaboration which involves communication and interaction between faculty members and learners and among learners. The flexibility of e-learning has the potential to overcome communication problems and restrictions on teachers and students movement and this is a significant benefit to Palestinian students and lecturers. Some participants, however, expressed their concerns about the difficulty to establish a social context in the online environment. Online communication "is not simply a process of shifting from speaking and listening to reading and writing" (Mann, 2003 p. 119). Therefore, it is important for both students and instructors to be prepared for meaningful communication and interaction with each others.

The majority of the participants also indicated that e-learning enhanced the quality of learning in different ways by making it possible to use a wider range of resources that may otherwise be too difficult or expensive to use and by accommodating multiple learning styles using a variety of delivery methods geared to different learners and providing interactive instruction in a wide-range of text, diagrams, and images with video and sound which makes learning effective and more interesting than traditional methods of learning. Another important benefit of the e-learning process as highlighted by many participants was professional development. They would like to keep up with the new learning paradigm which requires new pedagogical skills for developing online course delivery to meet the 21st century students' learning needs.

Although all participants perceived the usefulness of e-learning initiatives, many participants indicated that not all staff have been able to embrace the e-learning initiative immediately. Resistance to change by a segment of instructors requires the development of new skills and attitudes. Therefore, a programme designed to raise awareness will help to change teachers' opinions about adopting e-learning and encourage them to use it effectively as one interviewee remarked: "e-learning implementation is not something spontaneous or impulsive … empowering the instructors is the starting step to create widespread interest...". Another issue indicated by the participants was the importance of peer influence as a factor in their use of e-learning. The participants thought that they would be more likely to use the new learning approach if their friends encouraged them and if they were persuaded by others of the potential of this e-learning to improve education "It is expected that many teachers don't like change .. unless they are leading it!". At the same time, they pointed to the significant role of the university to mandate them to engage in e-learning implementation in the early stages" . This supports the view of Thowfeek and Hussin (2008), who suggested that mandatory use e-learning applications have a significant influence on promoting e-learning.

Another concern raised by many participants was students' readiness towards e-learning. Since Palestinian students come from secondary schools with traditional teaching/learning methods where the teacher is always in control, perhaps not all students are able to learn independently and take the responsibility for their own learning. This finding indicates that appropriate support from the instructors are needed to enhance learners' autonomy and active learning through keeping track of students' progress and motivating and stimulating them to participate regularly in the different learning activities. Some participants also indicated that the content of various courses such as cost accounting requires a blended approach that utilize both e-learning and face to face methods. Therefore, an effective process may be neither entirely e-learning nor face to face. A combination approach seems to be more appropriate.

The success of e-learning will also depend on teachers becoming confident and capable to deliver online courses (Hadad, 2007). This study also indicated that lecturers who have more experience in using the Internet and attending training programs in e-learning are more likely to have a positive attitude and a stronger

intention to use newly introduced e-learning. This finding is consistent with prior studies such as Thowfeek and Hussin, 2008; Nanayakkara and Whiddette, 2005. However, these skills are insufficient to use e-learning elements effectively. The majority of participants expressed their needs for training because they were unfamiliar with the technology associated with the use of e-learning tools such as multimedia, chat-room, wikis, and blogs. They also repeatedly commented that they need other specific training in technology-enhanced instructional design, pedagogical strategies and quality assurance in order to develop their skills and competences needed to effectively design and deliver online courses. They emphasized that the one-shot training given to them is not sufficient. Continuous training is essential to keep them up to date with the new system. Further, most respondents were not completely confident about their ability to use e-training and online tutorials. They prefer personal coaching to become familiar with the new e-learning technologies, particularly in the early stage.

5.2 Technological Factors

The main technological factors that have influenced the use of e-learning as identified by the respondents are: infrastructure, technical support and human-computer interaction (HCI).
For a successful transition to e-learning, both students and teachers should have access to reliable and affordable bandwidth and a robust network (Andersson and Grönlund, 2009). Not all students and teaching staff have access to robust computers and high-speed Internet connections in and out the university. This 'digital divide' issue was frequently mentioned in the interviews as one the factors that has negative influence in e-learning implementation in Palestine.

Technical support is another technical issue that was reported. Academic staff are not familiar with educational multimedia techniques. Participants are only involved in uploading the materials in Power point or Word documents. Moreover, there is a lack of instructional designers and multimedia experts to help them develop the content of e-learning courses in the form of animation and multimedia. Interviewees indicated that the lecturers did not have time to develop their skills for preparing interactive content. Several participants also acknowledged the technician support from the university IT team. However, the support is often by telephone rather than onsite and many seemed hesitate to ask for help. "I was having many technical problems… I would not contact the technician because I just thought I should be able to figure it out by myself". Therefore, it is crucial that communication between the academic staff and IT team be timely and ongoing.

Besides technical support, another element that may facilitate the use of e-learning is the friendliness of the educational technologies. Some participants indicated that they were unfamiliar with the Moodle environment, and they always asked for assistance such as in preparing quizes, importing multimedia presentations with audio, video and Flash movies. Other participants regarded registration to access Moodle as one of the obvious obstacles facing participants.

5.3 Organizational Factors

Transformation to e-learning can be effective if there is political will (Shannon and Doube, 2003; Andersson and Gronlund, 2009). Political advocacy was raised repeatedly by participants. One respondent said: "I think it [e-learning] is demanded , but it does not matter if the academic staff has the interest, it does not matter if the technology is in place – if there is no political will, nothing will change". Many participants were put off using their online courses because of the negative attitude and belief about the innovation of e-learning methods by top managers. E-learning is still not widely accepted by many policy makers at Bizeit University. Many participants reported that there is a growing awareness of the importance of introducing e-learning, but there was reluctance from the policy makers to allow them to exercise full online sessions. This is due to a lack of understanding of the e-learning concept and the confusion between e-learning and distance education. Participants also claimed that the policy makers thought that e-learning is simply being used by students as a replacement for face to face teaching methods and this is not in line with the educational philosophy at the Birzeit University. It is clear that it is necessary to clarify what is meant by e-learning as an ICT-based pedagogical innovation and not just a technology innovation. Political support is needed in order to provide a solid, enforceable, and accountable framework for the implementation of the e-learning approach. Hence, changes of attitude at the top management level are crucial to facilitate a high degree of academic involvement.

Institutional support is likely to be fundamental for maintaining the motivation and commitment of instructors to adopt e-learning models (ibid). Respondents reported that for effective e-learning implementation, the university should provide the required resources for creating an enabling environment by setting up clear strategy and policy, raising awareness, training, and improving infrastructure. Capital investment is anticipated to be high at the initial stage; there will need to be substantial expenditure on hardware and training programmes. This is a challenge for the future. In the meantime, forging links with international and local communities and maintaining a dialogue with multiple groups will be necessary to assure financial support for improving the ICT infrastructure and capacity building. Most participants also pointed to the importance of the systematic evaluation of the e-learning piloting. Feedback will be used to make decisions about sustaining and spreading the e-learning initiatives and to identify problems that are likely to arise so that they can be solved. Another critical issue highlighted during the interviews was the time needed for preparing the instructional materials and managing the learning process in digital format. Instructors need to be available at regularly scheduled times to encourage and motivate students in various learning activities. The new role of instructors should be supported by managers (Siragusa et al., 2007). Therefore, the need to revise current policies and regulations such as releasing workload to develop online courses has a significant influence in instructors' adoption of e-learning.

The majority of participants reported that multi-unit in the University are involved in developing online courses as donor-funded e-learning projects rather than through a planned process. This finding suggests that appropriate forms of coordination should be considered to ensure that the diverse efforts of different units are coherent and mutually support one another rather than compete. The innovation and implementation of a sustainable e-learning approach should be part of a systematic integration of technology into the learning processes of the University. This finding supports other literature such as MacDonald Thompson, 2005.

6. Conclusion

This preliminary investigation explores how academic staff come to accept and use an e-learning approach effectively through formulating a model of technology acceptance of e-learning. The proposed model is a holistic multi-dimensional approach which includes the socio-technical and political considerations that can contribute to the success of e-learning .

The initial result of the study indicates that there are several determinants that have influence in their intention to adopt e-learning including perceived usefulness to e-learning, IT skills and competencies, peer influence, reduced workload, HCI , students' readiness, accessibility and connectivity. However, the main challenge to the successful implementation of e-learning lies in the organizational aspect rather than socio-technical factors. To foster effective e-learning processes requires politicians' commitment and attitudinal change. The role of politicians to enable or constrain the process is dependent upon the efforts that will be made to initiate changes. Therefore, raising awareness among the top management to accept these initiatives is the first important prerequisite for supporting the adoption and implementation of e-learning approach.

The findings of this preliminary study will be validated in the second phase of the research through a quantitative approach. Also, future work in this area will focus on tracking learners' perspectives toward e-learning through developing a questionnaire, to address their needs in the e-learning policy framework.

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Joint Presentation (5)

2010

Integrating Multiple Epistemologies in the Teaching and Practice of Inquiry at the University Level

Paper Presented
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In the diverse and globalized world of the 21st century, accessing and understanding alternative epistemologies and their corollary research methods is critical to producing knowledge that can be useful and relevant across different groups and contexts. The purpose of this paper is to highlight the importance of incorporating multiple theories of knowledge in the teaching and practice of research at the university level. This paper also suggests some strategies and recommendations for achieving this goal.

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Introduction

What do we mean when we say we know something? That we believe it to be an immutable truth? That it is what we know at that point in time? That we have experienced it? That someone in authority has told us? The answer could be any one of these meanings or interpretations, for the answer reflects our epistemology – that is, our way of knowing: what we distinguish as knowledge from non-knowledge and what we accept as authentic sources for knowing. Recognizing one's epistemology is important because how we know not only tells us what we believe but also shapes what we perceive to be real. For example, some scholars espouse a specific epistemology when they assert that every day they generate new ideas as they learn; they may see reality as a social construct. Other scholars espouse an alternative epistemology when they claim that all knowledge already exists for them to learn; they may see reality as a set of unchangeable facts.

Epistemology is more formally defined as the theory of knowledge and justified belief. It informs the judgments we construct about the validity of different warrants for knowledge and knowing. Put simply, a researcher who asks "how do I know *that* I know?" and "what evidence should I trust in this knowing process?" is raising important philosophical questions that fall in that special sphere of philosophy that is concerned with knowledge formation and legitimization*: epistemology*. Researchers in the field of education research may ask such questions – or they may unquestioningly accept the prevailing beliefs about knowledge and its production. We argue that researchers need to ask such questions because their epistemologies or theories of knowledge determine their choices about knowledge production, method, evaluation, and dissemination of research and its outcomes. A researcher's belief system influences his or her definitions of foundational concepts such as: truth(s), objectivity, subjectivity, bias, validity, representativeness, causality, and social change.

Because the purpose of academic research is to produce knowledge, epistemology is central to

the choices a researcher makes. Thus, we argue that multiple epistemologies should be integrated in the teaching and practice of research. Researchers need to be trained and encouraged to raise and consider questions about how they know what they claim to know. Why? Because the complicated and nuanced social phenomena that are the subject of research are not amenable to understanding through a single mode of thinking, approach, method, or representation. Thus, exposure to various perspectives, approaches, and methods toward knowing and knowledge allows for different ways to explore and understand these phenomena. For example, one epistemology can tell us that a current professional development practice does not change teachers' instructional practices, or that a particular major draws the most college students – but we need to move to a more subjective epistemology to understand the reasons why.

Multiple Accounts to Knowing with Diverse Epistemic Beliefs: Do Researchers Need Such Perplexity?

Questioning the nature of knowledge and what constitutes its validity is problematic. It implies not only questioning what is being legitimized as trusted sources for knowledge, but also involves questioning what was being arrived at as reality or truth along with the approaches that led to its acquisition or formation. In other words, questioning *epistemology* entails questioning *ontology* and *methodology*. It also implies questioning the milieu where the former three concepts function and derive their meaning and representation. In their well-known work *Competing Paradigms in Qualitative Research*, Guba & Lincoln (1994) arrived at the same point as they argued that researchers' basic belief systems (paradigms) are based on a set of ontological, epistemological, and methodological assumptions that constitute inquirers' worldviews (*Weltanschauungen*). These *a priori* assumptions must be accepted at their face value, at which point they become self-evident. They argued that:

[a paradigm] *represents a worldview that defines, for its holder, the nature of the "world," the individual's place in it, and the range of possible relationships to that world and its parts, as, for example, cosmologies and theologies do. The beliefs are basic in the sense that they must be accepted simply on faith (however well argued); there is no way to establish their ultimate truthfulness* (p. 107)

Different epistemologies support different epistemic beliefs about the nature of knowledge and consequently offer varying definitions of the nature of reality and the means of approaching it. Despite having different standpoints on knowledge formation and legitimacy, these positions can be organized according to Bredo's (2006) typology (borrowed from the work of the contemporary philosopher Peter Godfrey-Smith, 1996), consisting of three accounts to legitimate knowing: the *external*, the *internal*, and the *interactive* (dialectical) accounts.

Seen as external accounts, knowledge formation and legitimacy are influenced by the surrounding environment – the external world, which determines how the mind functions, how it produces knowledge, and how it judges knowledge authenticity. Perhaps John Locke's (1690) argument in his famous work *An Essay Concerning Human Understanding* represents this position toward knowledge construction and legitimacy. In Chapter II of the first Book *Of Innate Notions* of this essay, Locke clearly argued that knowledge is not innate but on the contrary, it arises from sensory experiences of the external world. He argued

The knowledge of some truths, I confess, is very early in the mind but in a way that shows them not to be innate. For, if we will observe, we shall find it still to be about ideas, not innate, but acquired; it being about those first which are imprinted by external things (p. 30).

The external account of knowing would include the Positivist paradigm, or worldview. This theory of knowledge holds an objectivist assumption about the relationship between the knower and the world, affirming the independent existence of an enduring reality/truth that is external to or outside the knower's consciousness. A Positivist theory of knowledge suggests that the knower can accurately register or verify the existence of the real without influencing it or being influenced by it; thus, knowledge exists external to the knower.

On the other hand, the internal accounts of knowledge formation represented by the Interpretivist paradigm or school of thought posits subjective assumptions about the nature of knowledge, arguing the mind is a starting point for developing knowledge and for judging its legitimacy. Hence, no separation is acknowledged between the knower and the world, which is constructed through the knower's mind structures and constraints and which is possible to be known only through the interpreter's senses. Consequently, the external world under the doctrine of the internal account to knowledge formation could be seen as an extension of the human consciousness and to its interpretations. Instead of mind obeying the rules of the external world, the opposite happens for the Interpretivist: the external world obeys the rules of the mind. Kant (1781/1934) recognizes the role of internal account in his seminal work *Critique of Pure Reason* which was first published in 1781:

> *But, though all our knowledge begins with experience, it by no means follows that all arises out of experience. For, on the contrary, it is quite possible that our empirical knowledge is a compound of that which we receive through impressions, and that which the faculty of cognition supplies from itself* (p. 1).

In the introduction to Kant's previous work, Kitcher (1781/1996) reemphasized Kant's revolutionary idea about how our cognition influences our knowledge about our surrounding environment and its objects: he stated

> *The standard view in epistemology is that our knowledge claims can be vindicated only by showing that our thoughts about objects conform to what the objects themselves are like. Kant offered a new perspective. He urges us to consider vindicating our knowledge claims by inquiring whether the objects of which we can have knowledge must conform to our ways of knowing* (p. XXXi).

Finally, the interactive, or dialectical, accounts of knowing balances the relationship between the external and internal accounts to knowledge formation as it discards any one-sided approach involved in this process. As knowledge creation depends on the interaction between the external world that generates the knower's sensory experiences and at the same time depends on knower's internal minds structures that filter and modify such senses (or restructure them) then, reality or truth is constantly being constructed /deconstructed in the course of using informed, mindful actions that keep changing reality itself. Georg Willhelm Friedrich Hegel (1770-1831) one of the prominent founders of German Idealism adopted this interactive (dialectical) approach to knowing. As Surber (1998) pointed out

> *According to Hegel, all knowledge arises from experience, which is the process of comprehending the particular in the universal. Mere sensation yields no knowledge at all; rather, a given type of knowledge emerges only when the particulars of experience come to be characterized by a general concept… In its most basic sense, Hegel's idealism thus consists in his claim that for the experiencing and knowing subject, reality is not individual, unique, and disjointed sensations but the universal concepts by which order and intelligibility are brought into the chaos of perception. In Hegel's famous phrase [:] the real is the rational, and the rational is the real* (p. 71).

Recognizing the instability of reality/truth, knowledge, and knowing within the various accounts to knowing and within the epistemologies that originate from each account (e.g., Positivism, Postpositivism, Hermeneutic/Interpretive epistemologies, Structuralism, Poststructuralism/Postmodernism, Critical Theory, etc.), any consensus on such foundational definitions is shattered. Furthermore, what adds to such instability is the recognition that epistemology could also be defined beyond the individual level, meaning that it also has a social dimension similar to what Goldman (1999) argued

> *Traditional epistemology, especially in the Cartesian tradition, was highly individualistic, focusing on mental operations of cognitive agents in isolation or abstraction from other persons…given the deeply collaborative and interactive nature of knowledge seeking, especially in the modern world, individual epistemology needs a social counterpart: social epistemology* (p. 4).

Returning to the question addressed in the heading of this section, do researchers- especially in the field of educational research- need such confusion? And what will they gain in recognizing such complexity

i.e. such instability of meanings? The answer to these questions could be addressed by understanding the relationship between epistemology, ontology, and methodology.

Connecting What Researchers Know with How Researchers Know

This relationship could be envisioned and presumed in a linear-directional way where researchers' ontology comes first and determines their epistemology and finally the latter determines their methodology. Or in other words, ***what*** researchers perceive as real determines what they can know about it and finally, what is possible to know about this real determines ***how*** researchers would learn about it. This linear perception of such a relationship is presented in figure 1.

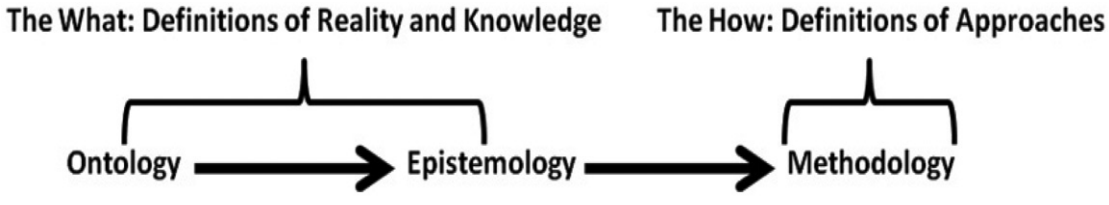

Figure 1 A linear perception of the relationship between Ontology, Epistemology, & Methodology

It is possible to argue that this linear perception of such relationship could be true only if we can make sure that the whole process starts with ontology. However, since it is also possible to argue that we need some degree or form of knowledge to first define what the real is and what meanings could be assigned and conveyed about it, and at the same time, since we also need some ways to acquire such knowledge and meanings for the purpose of producing such definitions of this reality, then this linear relationship also could be envisioned in a cyclical or recursive structure where there are no beginnings or ends as shown in figure 2.

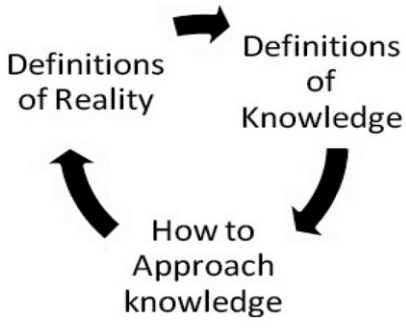

Figure 2 Epistemology, Ontology, and Methodology: a cycle of production and reproduction

In this structure, it is also possible for knowledge definitions—epistemology— to determine the approaches to knowing the real—methodology— and the latter finally determines what the real is— ontology. As well, the approach or method could determine what is considered real, which could also determine what could be known about it. In this circuit, the real, knowledge about it, and approaches to acquire this knowledge, are trapped in an ongoing iterative dialectical process where the three interacting concepts legitimate, drive, and constrain one another.

By considering the complex relationship between these foundational concepts as a cyclical relationship, researchers come to be aware of not just the transitory nature of some realities/truths, knowledge claims, and approaches but also come to question the epistemic commitments they are making when subscribing to a specific inquiry paradigm. Furthermore, they come to recognize that many of the former concepts are influenced by the power/knowledge configurations of the context(s) they are located in and/or studying; they come to recognize what Foucault (1984) nicely argued

Each society has its regime of truth, its "general politics" of truth: that is, the type of discourse which it accepts and makes function as true; the mechanism and instances which enable one to distinguish true and false statements, the means by which each is sanctioned; the techniques and procedures accorded value in the acquisition of truth; the status of those are charged with saying what counts as true (p. 73)

In addition, for teachers who aspire to educate authentically about inquiry, understanding the interconnectedness between these foundational concepts in such way calls for an alternative awareness and preparation for developing research in their contexts. The issue of developing inquiry will be more than just teaching novice researchers how to employ new approaches and methods; rather, it will be a genuine engagement in the philosophical underpinnings associated with them. In the case of educational research, teachers will faithfully come to consider what Rist (1977) argued
When we speak of 'quantitative' or 'qualitative' methodologies, we are, in the final analyses speaking of an interrelated set of assumptions about the social world which are philosophical, ideological, and epistemological. They encompass more than simply data gathering techniques (p. 43).

In the same sense, they will arrive at the conclusion parallel to what Fetterman (1988) also argued:
One need only scratch the surface of the qualitative/quantitative debate to understand that the terms "quantitative" and "qualitative" are in themselves misleading. They are commonly accepted handles for both the contrasting paradigms and the methods associated with them…Focusing on methods, however, is like focusing on the symptoms rather than on the cause of a disease (p. 18).

In light of the interrelatedness of ontology, epistemology, and methodology, and in an effort to reach a genuine integration of multiple epistemologies in the teaching and practice of inquiry at the university level, a both broader and deeper epistemological and cultural understanding of some fundamental research concepts is needed. Differently perceiving concepts such as social reality(ies), objectivity, subjectivity, generalizations, etc. is basic for a such an adoption. For example, since current practice in university research is typically limited to quantitative methods and a more postpositivist epistemology, a genuine openness to adopting qualitative research approaches and methods in the teaching and conduct of inquiry at the university level would open new vistas. Such a move requires a deep understanding of alternative theories of knowledge, such as the interpretive theory of knowledge. What Broadfoot (1997) argued conveys a similar notion: "…the adoption of qualitative methods does not, in itself, constitute qualitative research. Rather it is the commitment to the interpretative paradigm that is crucial, to a theoretical position that starts from a recognition of multiple realities" (p. xi).

Suggested Strategies

Teachers of research are encouraged to incorporate multiple ways to knowledge and knowing throughout the teaching of inquiry – whether they are teaching general research methods courses or specialized ones such as quantitative or qualitative inquiry. One strategy to start with is to establish an epistemological dialogue with students, particularly when discussing controversial concepts that are related to this topic. It is important to inform and familiarize students with the different knowledge claims inherited in each theory of knowledge principally when they encounter elementary and unsettled concepts such as *truth*, *objectivity*, *subjectivity*, *bias*, *evidence*, *causality*, *generalizations*, *knowledge*, etc. and that are considered obligatory for establishing the trustworthiness of their research. No matter how much these concepts might seem to be absolute, they must be subjected to a thorough discussion.

Next, instructors can raise the dialogue to the level of the critical debate (i.e., incorporating ideological consideration of meaning and social change) in order to enable the students to see the fluidity of the assumptions related to such concepts as listed above, as well as to see how multiple meanings could be assigned to each one of them under the differing epistemologies. In due course, students will be able to see research epistemologies in relationship with their historical roots and, at the same time, understand strengths as well as shortcomings and deficiencies of each. In this way, these students accordingly resist any representations that attempt to prioritize or legitimize specific research epistemologies over others (as in the case of positivism which gravely influenced and maybe still partially influences the conduct of research in

some academic contexts as could be seen originating from Enlightenment era). Finally, students should be encouraged to reflect on their personal epistemology(ies) and the assumptions they hold about research, its elements, and the knowledge it produces.

For example, it is important for educational research teachers to discuss with their students their inclination toward using quantitative or qualitative methods in educational inquiry and how this inclination could be seen as an indicator of some epistemological assumptions they hold concerning the basis of knowledge. Central to this notion is researchers' perception of the concept of truth similar to what to Sikes (2004) suggested

> *…truth in terms of how the data/evidence that research procedures obtain corresponds to and reflects the knowledge it is claimed that it does, and truth in terms of how the researcher communicates and represents the knowledge they get from their research* (p. 21).

Familiarizing students with the arguments of the different theories of knowledge on this matter is vital to their development as researchers in this globalized digital age. As for some epistemologies, especially the ones that hold an external account to knowledge and knowing, truth in terms of data/evidence is obtained through testing hypotheses and by using reliable instruments. Such truth is preferably to be communicated and represented in the least value-laden form: numbers. For epistemologies that hold and internal account to knowledge and knowing, truth(s) in terms of data/evidence is/are constructed through understanding the subjective experiences of the participants where the researcher herself/himself is considered as the medium for obtaining data/evidence. Such truth(s) can be best communicated and represented in the most value-dependent forms: words and pictures.

Critically discussing such contrasting assumptions with the students suggests allowing them to express and reflect on their emic (i.e., their culturally grounded or participant) perspectives. One useful way to achieve this purpose is to encourage students to think about their epistemological assumptions in terms of continua where two deeply different epistemological notions represent the polar extremes of each continuum (see Rossman & Rallis, 2003). For example, students can discuss their assumptions on the concept of truth by using the *subjectivity and objectivity continuum*. Placing themselves on this continuum allows students to decide whether they claim that only one version of reality exists and is acceptable to all (objectivity) or whether they see various context-based realities. Where the student researchers will position themselves on these continua depends on their epistemological orientation; they can position themselves at any point along any continuum. Using this strategy addresses questions such as: How do I know if something is true/real? Or what evidence would convince me? Or what approach of knowing is acceptable for me? This approach will advance students' understanding of their research. In addition, a deeper understanding of their research projects would occur if they were asked to situate those assumptions under some of the major epistemologies of research and to contrast those assumptions with the basic philosophical arguments inherent in each epistemology.

Concluding Remarks

Integrating multiple epistemologies in the teaching and practice of inquiry at the university level has the potential benefit of providing influential tools for preparing the next generation of researchers to contribute in a multidimensional world. It requires training students to critically question the nature of knowledge and what constitutes its validity. It demands open-mindedness in understanding the complex relationship between realities, knowledge, and knowing. Exposing students to the various perspectives, approaches, and methods toward knowing and knowledge can be foundational to their preparation as upcoming researchers; however, doing so is not an easy task. As Pallas (2001) argues: "*Acknowledge the inevitability of a group of doctoral students who will not be deeply engaged in thinking about epistemological perspectives*" (p. 10). Inevitably, creativity and sensitivity come to play beside science in achieving this task. We assert that researchers who mindfully draw on their epistemic beliefs when choosing questions and methods will produce knowledge that is ultimately useful in the diverse and globalized world of the 21st century.

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Joint Presentation (6)

Palestinian Faculty Development Program –
2010 Academic Colloquium

Teaching Decision Making: Providing Hands-on Geographic Information System (GIS) Education to Support Urban Planning Research.

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Palestinian Faculty Development Program –
2010 Academic Colloquium

Teaching Decision Making: Providing Hands-on Geographic Information System (GIS) Education to Support Urban Planning Research.

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Abstract:

The Department of Urban and Regional Planning in the University of Florida uses a distinct approach in teaching/ learning that involves geographic information system (GIS) spatial analysis and modeling to facilitate the decision making process of planners. GIS is a computer-based system that captures, stores, analyzes, manages, and presents data that is linked to location. The approach to teaching includes hands-on GIS courses, courses with research interaction as well as project elements taken from the current research projects conducted by faculty members. The use of this approach depends on ongoing research projects, and data, software, and hardware availability.

Research work is fundamental in the Department of Urban and Regional Planning and in the University of Florida in general. Therefore, graduate level courses in planning information systems, spatial analysis, spatial modeling and applications in land use and transportation coordination have been introduced. This paper will discuss these courses and explain how they interact with department research and enhance the capability of future planners for decision making. The paper will also identify the limitations of using these methods in Palestinian universities.

1.0 Introduction:

Teaching Geographic Information Systems (GIS) has followed many approaches. These approaches differ than teaching other computer systems because GIS is a computer-based system that captures, stores, analyzes, manages, and presents data that is linked to location. Some of these teaching approaches focus on theory leaving the practical part for the students, while other approaches focus on teaching GIS in a more practical issue-focused environment. LeGates (2005) described these methods of teaching as GIS operation models, Concept models, Teach with GIS model, and "The Issue-Based Model". These models represent different philosophies in GIS education and are applied in different institutions that have GIS education. The differences between these models are mainly on the level of teaching theory and the involvement of students in running applications, using theoretical and practical experience to solve research and real world issues.

The Department of Urban and Regional Planning at the University of Florida is one of the major institutions in the hands-on GIS approach especially in teaching and research. This basically depends on teaching GIS as a means of solving urban planning issues and depends on incorporating GIS in urban planning course curriculum as well as in-department research projects. The high level of GIS integration in education and the training make the students work as GIS professionals in the university research centers while they are still learning about GIS. A distinct example of how GIS is taught in this department can be taken from the land use modeling course which is a graduate-level course in land use modeling. In this course the student learns how to prepare future land uses by GIS using Land Use Identification Strategies (LUCIS) and at the same time learns GIS raster analysis (Carr & Zwick, 2007).

The hands-on GIS education used in planning is a resource-dependent education process that is strongly based on the availability of quality data, research projects requirements, computer facilities and funding resources. Furthermore, this approach incorporates students who are working on real world research. The results of their analysis are used for the ongoing research projects in the department or the research centers.

This paper will describe this GIS teaching approach in the department of Urban and Regional Planning at the University of Florida. The description for the teaching approach will include also a description of the resources available for faculty and students in the department. The paper will also

analyze the limitations in terms of data and resources for using this approach in data and resource poor situations.

2.0 Background:

There are different ways in teaching GIS. On one hand, educators may teach the student about the theory and sciences behind GIS. The latter includes the basic sciences such as databases, graphics, surveying, photogrammetry, principles of mapping, and modeling geographic or spatial features. This type of science education is called the Geographic Information Sciences GIS or sometimes referred as GISc. However, this should be distinguished from the geographic information systems (GIS), which is basically the computer application of geographic information sciences. On the other hand, educators may take a more practical approach and teach the students about the fundamental theories and their application in the student's areas of science and technology (Kerski, 2010). Other methods of teaching GIS are a combination of the previous pedagogies in GIS teaching.

Hands-on GIS teaching in this paper implies that the students will use the GIS software inside the class room while the instructor gives instructions about the software. The process starts with the instructor giving an example and how to solve it and hints on how to use the given instructions to solve similar problems. After that, the students will repeat the same example in class. When the students are done with the example, the instructor will ask the students to solve other problems from the real world and will be connected to students inside the classroom and virtually by video conferencing or online discussions. The instructor and assistants will finally evaluate the work of students and give their feedback and comments. However, this process is flexible and maybe slightly different depending on the instructor teaching style. In this paper hand-on GIS teaching is not limited to the in-class training experience. The hands-on GIS is blended with the issue-based teaching method suggested by LeGates (2005). LeGates' method involves real research work in the classroom. The students are not only learning GIS. They are also trained to solve real-life planning problems by GIS, complete their own research or participate in the research of faculty members in the classroom.

Because teaching Geographic Information Systems to urban planners is resource-dependent, this paper will focus on comparing the resources for hands-on GIS teaching at the University of Florida with the GIS teaching resources of the two larger universities in Palestine. There is no question that all these universities are academically distinguished universities and have strong urban planning programs. However, due to the past political situation in Palestine and the Israeli control over the Palestinian lands and resources for decades, these universities have shortages in human resources, data resources, and most importantly, financial resources. This research shortage makes them strives to offer good and competitive education. This paper investigates the different resources for these universities to investigate the possible limitations for implementing the hands-on approach in teaching decision-making for urban planners.

2.1 GIS Use in Urban and Regional Planning at the University of Florida

The University of Florida, generally, and the Department of Urban and Regional Planning, specifically, utilize state-of-the-art resources for their students. These resources are backed-up with multilevel financial and data support that range from the local to the federal level. The GIS learning and applications resources include but are not limited to the following:

1. **Availability of software:**

   The Department uses the internationally known and widely used GIS software from the Environmental Systems Research Institute (ESRI), which is called ArcGIS. This software has three levels of user license, which are Arc Info, Arc Editor and Arc View, respectively from the highest to the lowest privilege. The Department has the Arc Info license for the GIS software. This license is for installing ArcGIS in student labs, research centers and department research projects. The department also supports at least an Arc View license for the use of students on their laptops or home computers. Each student in the department can have a licensed copy of the most up-to-date ArcGIS software (GeoPlan, 2010).

2. **Availability of research projects:**

The faculty members are largely involved in many research projects that are budgeted in millions of dollars. Many of these research projects include GIS analysis. These projects can be local, state, or national levels (URP, 2010).

3. **Availability of datasets:**
   As an American institution, faculty members and students can have access to many national and local datasets more easily than institutions in other countries where some constraints may apply. However, in terms of GIS data resources, the students have access to database hosted by the GeoPlan Center, which is the home of the Florida Geographic Data Library (FGDL). The FGDL is a data repository for over 350 current and historic GIS layers, from over 35 local, state, federal, and private agencies. FGDL includes data on Land Use/ Land Cover, Hydrography, Soils, Transportation, Boundaries, Environmental Quality, Conservation, Census, and more. FGDL contains primarily vector GIS data layers (FGDL, 2010).
4. **Availability of hardware:**
   The department has a GIS lab where the students can learn and solve their GIS problems. This lab is open 24 hours. In addition to that there are many student computer labs in the college that are open 24 hours. University policy is that all students should have laptop computer and with the free supply of the GIS license from the department. They can install the ArcGIS software on home desktops or laptops (DCP, 2010a).
5. **Availability of the development funds:**
   Most of the faculty members have funded research projects and can pay students to perform certain tasks. They can also purchase hardware and software according to their research and teaching needs. The budget for research projects can range from thousands to millions of dollars. There are also a lot of funding resources that can range from local and private institutions to federal and United States Government funding sources.
6. **Teaching/ research load combination:**
   The distribution of load among faculty takes into account the research work that they are doing. Faculty teaches not more than four courses per year while using the remaining time in research and publications.

GIS in the Urban Planning Research Centers at the University of Florida:

The Department of Urban and Regional Planning URP is affiliated with many research centers that have huge research projects. These projects may involve GIS in the dataset preparation, the analysis or the applications in the decision making process for urban planners. The following are only some of these research centers that are within or affiliated with the department of Urban and Regional planning:

1. **GeoPlan Center:**

The Geo-Facilities Planning and Information Research Center, or GeoPlan Center, was established in 1984 as a response to statewide needs for teaching and research environment in GIS. The UF GeoPlan Center works to support land use, transportation, and environmental planning in the State of Florida by providing geospatial and planning expertise, data, training, and education to the stakeholders involved in the planning process. The center is directed by faculty in the Department of Urban and Regional Planning, including Dr. Paul Zwick, Professor Margaret Carr and Richard Schneider. The center also has a GIS professional team which includes many of the GIS experts and programmers.

The GeoPlan Center focuses on the research and teaching of GIS. The Center works on the development and application of GIS and supports teaching graduate level GIS courses for master and doctoral students from different disciplines who can specialize in GIS. The courses offered by the Center provide students with the principles and theories of spatial systems through lectures and projects.

The GeoPlan Center has a diverse research interests and has obtained many research and community service grants. These research grants help the Center and students to obtain work experience using state-of-the-art computer technologies. The Center utilizes many affiliated research such as the 3D

modeling for crime prevention planning, the Florida Geographic Data Library (FGDL) and land use modeling and the building of land use scenarios (DCP, 2010a).

2. Center for Health and Built Environment:

The Center for Health and the Built Environment is a research center focused on teaching and research that addresses the relationship of the built environment to health outcomes. The Center is interdisciplinary and covers nearly all the areas of research of the College of Design, Construction and Planning disciplines. The Center focuses on integrating health into the planning process and addressing health disparities through a built environment lens and will focus on the location and elements of the built environment that can shed light on factors contributing to health disparities, such as obesity, diabetes and environmental pollution, across geographic areas. Air and water quality, environment and housing quality, and food access represent issues where greater integration with the planning process is needed (DCP, 2010b). A special focus of the Center is on transportation and land use coordination research and their relation to the built environment. The center is directed by Professor Ruth Steiner and affiliated with many faculty members, GIS professionals, and many graduate students specializing in planning and engineering. Recent research projects for the Center include pedestrian safety, safe routes to school, school sitting, vehicle-miles of travel (VMT) based methodologies for traffic impact assessment, and a parking study in south Florida.

The Center is working also in a national study for child obesity in collaboration with the GeoPlan Center and the Maternal Child Health Education and Research and Data Center in the department of pediatrics at the College of Medicine. This research is funded through a grant from the Robert Wood Johnson Foundation and will plan for a national Childhood Obesity Prevention Geographic Information System. The project will have a great role in the involvement of students in the research work as well as in teaching hands-on GIS education due to the extensive use of GIS analysis and programming techniques in the models (DCP, 2010b).

3. Shimberg Center for Housing Studies

The Shimberg Center for Housing Studies is located in the Rinker School of Building Construction, which is in the same college, the College of Design, Construction and Planning (DCP) as the Department of Urban and Regional Planning. The Shimberg Center "monitors policy development, program performance, and research activity related to housing and community development conducted at universities and by government and private organizations throughout Florida, across the United States, and in other nations. The scope of this activity ranges from the design, development, and production of housing to the formulation of housing policy and the structuring and evaluation of housing finance and delivery programs" (DCP, 2010c). The Center's most important area of research is the affordable housing The Center was established at the University of Florida in 1988 and works on facilitating the allocation and preservation of affordable housing sites for Florida's communities. Since that time, their would has expanded to a national and international scale.

The center also focuses on housing policies and works to address Florida's housing needs through public housing research. Hands-on and research issue solving is implemented in the teaching of housing courses in the Department of Urban and Regional Planning associated with the Shimberg Center. One of the housing courses, offered in the Department provides an overview of public policy issues in housing (DCP, 2010c). The Center works on many funded projects that involve extensive GIS work. Graduate students, researchers, faculty members and GIS professional are working in the Center to monitor and model housing issues starting from data management to the analysis and scenario building of future housing allocations.

Geographic Information System Models:

The application of GIS to solve real world planning problems has been the focus of many large and funded research projects that led to the development of huge nationally-known GIS models in the Department of Urban and Regional Planning. In this paper, two of these models - the Land Use Conflict Identification Strategies (LUCIS) and the Florida Affordable Housing Suitability model (AHS)

– are described to show how research, teaching and hands-on GIS analysis are integrated.

1- The Land Use Conflict Identification Strategies (LUCIS)

Land Use Conflict Identification Strategies is a model created by professors Paul Zwick and Peggy Carr at GeoPlan Center. The model identifies conflict between different land uses such as agriculture, conservation, and urbanization and use that conflict to prepare future land use scenarios. The model is a goal-driven GIS model that produces spatial visions for patterns of future land use (Carr & Zwick, 2007).

The model begins by showing the existing land uses and then develops future land use scenarios that use basic assumptions about how urban land will be developed. For example, most scenarios use population projections over a specific time period and then allocate that population growth to various locations in the state based upon assumptions about the patterns of development. Using GIS facilitates the allocation process. Identifying the land and allocating land is a process that is performed according to priorities. These priorities depend on growth patterns, proposed densities, transportation masks, and other variables. Once the scenarios have been developed, the models can be used to show the locations of conflicts between land for agricultural production, land for wildlife, water quality and other environmental amenities and the land for urban development. The complexity of the procedure, the accuracy, and the time spent in the allocation process generates the need for an automated procedure that can perform the allocation in a feasible and flexible fashion. These automated procedures are introduced in a new LUCIS+ model (Arafat et al, 2010).

2- The Florida Affordable Housing Suitability Model AHS:

The Florida Affordable Housing Suitability (AHS) Model research project is intended to build a GIS system "to help Florida's communities plan for attractive, equitable, and sustainable affordable housing. (AHS Methodology, 2009, pp 3). This project uses models similar to LUCIS except that it evaluates and identifies lands in Florida's communities that are suitable for the development and/or preservation of affordable housing based on local preferences and planning expertise" (AHS Methodology, 2009, pp 3). Some of the factors included in this model include the characteristics of the land and it suitability for building housing, the neighborhood characteristics, the planning regulations, the demand for affordable housing based upon proximity to employment and the cost of transportation to both employment and activities of daily living, such as shopping, education and other activities.

Eight different course are offered by the Department of Urban and Regional Planning. These courses are briefly described below:

1. **Survey of Planning Information Systems:**
   This course includes an introduction to concepts and theory associated with desktop GIS as related to urban and regional planning. This course is an issue-based course acts like an introduction to the use of GIS to solve urban planning problems. Students are not expected to have a GIS background when they begin this course.
2. **Customizing Planning Information Systems:**
   This course contains advanced work in planning and analysis using large databases. The course has a special emphasis on the development of monitoring systems and information systems in urban and regional planning. In this course, the students usually prepare automated programs to be used in research.
3. **Advanced Planning Information Systems:**
   This course contains theoretical and practical knowledge about the structure, use, and architecture of different database systems. The course discusses spatial relationships between network and area-related systems. However, this course has a GIS and statistical analysis core that is very important for conducting urban planning research. Usually, students work on their own research questions during the course.

4. **Land Use Modeling:**
   This course is an issue-based course that focuses on suitability and population allocation using ArcGIS and Model Builder. This course aims to produce land use modeling professionals that can use GIS in land use issues. The course includes extensive automated land use modeling procedures. The students are expected to produce future land use and population allocation plans for their research areas.
5. **Spatial Modeling:**
   This course is about the three dimensional urban design and simulation using ArcGIS and other graphics software. This course is usually incorporated with the simulation research and the urban design modeling scenarios.
6. **GPS for Planners:**
   This course includes the basics of digital field collection using geographic positioning systems (GPS). The course discusses GPS applications, components, concepts, mission planning, data collection in field, navigation, real-time and post processing correction using base station data, and exporting GPS to GIS. The students learn to use GPS data collection and it is integration with GIS modeling throughout a hands-on three day intensive workshop.
7. **Spatial Database Design and Development:**
   This course includes advanced GIS data concepts and practices, techniques for data creation, quality assurance and quality control, conversion, storage, manipulation, and presentation. The course is intended for professionals who will work on maintaining GIS data.
8. **Planning Information Seminar:**
   This course is about current GIS topics. It includes discussions about technologies, and applications of GIS for particular projects. It also discusses operating systems, remote sensing, and spatial analysis applications.

The previous course description shows the dynamic relation between teaching and research. Research projects are usually integrated in the classroom teaching process. However, this process would not succeed without the financial, data and technology resources as well.

2.2 GIS use in Urban Planning and Design at Birzeit University (BZU, 2010):

Birzeit University is one of the largest and academically ranked universities in Palestine. It is university is located in the city of Ramallah where all the Palestinian ministries and top Palestinian leadership are located. The proximity of the university to the decision makers in the government gives special importance to its urban and regional planning program.

The Urban and Regional Development program is a graduate program in the College of Engineering that leads to the degree of Master of Science (M.Sc.) in Urban and Regional Development. Birzeit University and the program have important roles in the development of Palestinian communities. The program research supports the studies of employment, housing, local environment, utilities, and urban and regional renewal. The Department of Urban and Regional Development in Birzeit University focuses on the theory and practical sides of urban and regional planning. However, the program does not focus on GIS and computer applications in the teaching the planning and the decision-making process. The only GIS course that is taught for urban planners is UPLD 735 – Geographical Information systems (GIS) and is described according to the program website as:

> *Introduction to geographic information systems and sciences, development of geographic information systems, components of GIS, modeling of reality, geo-spatial data, spatial data models, attribute data, geographic (spatial) databases, quality of data, main functions of GIS, basic spatial analysis tools, using GIS as a tool for planning, introduction to spatial modeling, practical exercises using Access as DBMS & Arc View including extensions for GIS applications(BZU, 2010).*

One of the authors of this paper is a faculty member in Birzeit University that teaching GIS. The university has a shortage in faculty members that can teach GIS for geographers or urban planners. This is the main reason that the Department has limited the number of GIS courses that are taught to urban planners to only one course.

2.3 GIS Use in Urban and Regional Planning at Annajah University (Annajah, 2010):

Annajah University is the largest university in Palestine and has a well-recognized graduate program in urban and regional planning. The urban and regional planning program is an interdisciplinary and comprehensive program for the organization of the environment according to the program website. The program grants a masters degree in urban and regional planning for professionals who will be involved in urban development and planning. The program objectives are to develop the abilities of student to evaluate changes in the physical, economic and social environments; to understand the urban and regional development planning processes; and to improve urban and regional practices. The department also focuses on the theoretical and practical applications in urban planning more than focusing on using GIS hands-on techniques for urban planners.

According to the department website, only two GIS courses are taught for urban planners:

1. **Geographic Information Systems (GIS):**
   The course focuses are on understanding of information systems including the basic concepts of GIS, data conversion, technology, hardware and software. The course also introduces GIS as tool for urban and regional planners and the project design steps for data conversion, raster to vector conversion and GIS. The course also emphasizes database design, automation of data, query and analysis of spatial data and application on sample projects.
2. **Advanced GIS for Planners**:
   The course includes GIS spatial functions and the definition of the planning process from a GIS perspective. The course focuses on GIS data models for planners and accuracy issues of GIS data and operations. The course uses Arc info software and includes the application of the taught material in a major planning project.

The Center for Urban and Regional Planning (CURP) At Annajah National University

The Center was established by Annajah University to accomplish the role of Annajah National University in building Palestinian institutions and government after the delegation of authorities from the Israeli to the Palestinian side. The Center also aims to study and control the increasing size of future development due to the vast increase in population. The Center is affiliated to the master program in urban and regional planning at Annajah University and works to coordinate the students study program and research. The Center is involved in GIS application in Urban Planning and has prepared a digitized base map of the telecommunication network in Nablus, Salfit, and Tubas districts. The Center has a geographic information systems unit that works on providing technical assistance and consultation in the field of GIS in physical planning, and training the staff both in the public and private sectors. The Center also provides technical assistance the university projects (CURP, 2010).

The Center depends upon professional and experts in the different disciplines of urban planning and upon graduate students to conduct studies and surveys. The Center has a computer lab with GIS software, digitized maps and library access (CURP, 2010).

3.1 Results and Discussion:

It is difficult to obtain information about all resources for Palestinian institutions without actually visiting them or teaching there. However, from our knowledge of the University of Florida and Birzeit University, we can conclude that faculty and students at the Department of Urban and Regional Planning at the University of Florida have greater GIS resources than students and faculty in Palestinian universities. To be more scientific in our research we also gathered information from the program's websites and from the website of the Association of Collegiate Schools of Planning, which is the professional organization for urban planning faculties in the United States. For more detailed research about resources in these universities, a pilot study questionnaire has been proposed and will be conducted in all the aforementioned universities. However, this paper will focus on the information gathered from the websites. The result of the questionnaire will be included in future research.

An analysis of planning programs showed that out of the 90 US planning programs[1] listed in the *Guide to Undergraduate and Graduate Education in Urban and Regional Planning*, a total of 130 faculty members in 73 programs indicated that they specialized in one of the following areas: geographic information systems, information technology for planning, or spatial analysis. Of these 73 programs, 34 listed only one faculty member who researched or taught GIS. Among the other 39 programs, 24 programs showed two faculty in this specialization, fourteen showed three faculty and two – MIT and the University of Florida – has three faculty members who indicated they had a specialization in GIS or spatial analysis. This likely underestimates the number of faculty who work with GIS; the author is aware of many researchers who did not identify GIS as their specialization even if they routinely publish papers using spatial analysis or they teach it. As GIS analysis has become more common as a research methodology, planning faculty members are less likely to consider it to be an area of specialization unless they conduct specific research in the development of GIS analytical tools and models.
Another measure of the prominence of GIS and spatial analysis in planning programs in the United States can be found in the curriculum of planning programs. US planning programs have the option to offer specializations within their planning programs. The specializations become one way that programs highlight the research and teaching interests of their faculty and attract students to their programs. The decision to offer a specialization can be constrained by the Planning Accreditation Board (PAB) requirement that the faculty backgrounds and skills be complementary to the specializations and resources "be adequate to support the specializations advertised and offered (PAB, 2010 (Section 6.3)). A total of sixteen programs listed a specialization in GIS or spatial analysis in their Masters program. Among these sixteen programs, six of them – University of California at Berkeley, Georgia Tech, University of Florida, University of Illinois – Urbana/Champaign, Louisville, and Ohio State - also have a doctoral program. The University of Florida and the University of Cincinnati list a certificate in GIS. A certificate differs from a specialization in that the specialization requires that students complete the degree to get the credential, whereas a certificate can be completed by students outside of the program or non-degree seeking students.[2] In the case of the University of Florida, the certificate includes courses from throughout the University. The presence of a doctoral program generally means that faculty members are actively engaged in research in addition to their teaching. In addition, the University of Delaware lists a specialization in Technology, Environment and Society in their doctoral program even if they do not have a GIS or spatial analysis specialization for their masters students.

Generally, the resource analysis suggest that the resource deficiency in addition to the lack of human resources that work in GIS in Palestinian universities may imposes limitations on hands-on issue-based GIS teaching in Palestine. However, Palestinian universities expend large efforts to develop programs that are comparable to universities in developed countries. Although there are minor differences in the application of GIS in Palestinian universities, the programs suffer from the shortage in financial, data, and faculty resources in that field. This shortage imposes difficulties in teaching GIS at the university level in general and for urban planners specifically.

The available information on urban planning programs in the University of Florida and Palestinian universities shows that the urban and regional program in the University of Florida has more resources to perform the hands-on GIS teaching and the research involving graduate students. This should not be surprising because GIS and spatial analysis are strengths of the University of Florida's program. However, many of these resources are also available to students in other programs in the United States.

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[1] Because the Guide is one tool for student recruitment, most schools choose to be included in it even if they pay for that privilege; a notable exception to this is the University of Texas at Austin. Schools outside of the United States that are members of the Association of Collegiate Schools of Planning or schools that are accredited by the Planning Accreditation Board (PAB) may also be listed in this document. Six programs from Australia or Canada are listed in the Guide: McGill University, Ryerson University, University of British Columbia, University of Queensland, University of South Australia and the University of Toronto. These six programs have been removed from the analysis.

[2] The requirements for certificates vary from one university to another. At the University of Florida, a student who completes a certificate will have that achievement listed on their transcripts, whereas the specialization is not listed on the transcript.

The following points summarize the differences in resources:

1. In terms of software licenses, the available licenses in Palestinian universities are installed in computer labs and research centers and these licenses are usually at the Arc View level and are not available for installation on student computers. However, in the University of Florida all students in the planning department can install GIS on their computers and the level of the license is usually Arc info/Arc Editor.
2. The financial resources are more available for faculty in the United States, and are limited in Palestine. However, the data resources are also very limited in Palestine due to Israeli control and limited financial resources. This makes new difficulties for hands-on GIS teaching in Palestine as professors do not have research projects on which the students may work.
3. Hardware such as computer labs seems to be available in all universities. However a comparison was made by personal communication with Birzeit University shows that the lab in the University of Florida contains more up-to-date machines as well as modern audiovisual and video conferencing equipment to support the online support of the Hand-on GIS teaching.
4. The most important point is the teaching load. While professors in the United States teach two to four courses a year, the minimum load for the professor in Palestine is eight courses a year and most of the time teach more because of the shortage in human resources. This makes it very difficult for faculty members to be engaged in research and to adopt teaching methodologies like hands-on education.

The aforementioned comparison in addition to our knowledge about the program and resources in these universities suggest that there are limitations on applying the Hand-on GIS training in Palestine. However, instructors in Palestine usually enhance their teaching by practical training using international data or some of the available local data. Without the real world issues, financial and time resources for the faculty to conduct research, applying the hands-on GIS training for decision making or for urban planning professionals will be difficult. Faculty members in Palestinian Universities should seek opportunities to develop research and community projects that facilitate hands-on GIS learning.

3.2 Research Limitations:

This research is based on information posted on the university websites. The research assumed that the information posted on the web sites is current and updated. A pilot study survey was proposed but not conducted because we could not get the permission to perform it within the available research time frame. However, this survey will be conducted in all the aforementioned universities to make sure that we have updated and more comprehensive information for comparison. The result of this research should not be generalized and should be used as a vision of how to apply GIS hands-on training as used in the University of Florida and how to involve this approach and research projects in teaching decision-making using GIS in Palestinian universities. One of the authors in this paper (Abdulnaser Arafat) served as a faculty member at Birzeit University and has taught GIS. Palestinian Professors make a great effort to teach GIS. They struggle in their mission because of the lack of financial, data, and time resources. A faculty member usually takes an overtime teaching load because of the shortage in specialized human resources which mainly reduce the time available to conduct research.

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Appendix A

A Study on Providing Hands-on Geographic Information System (GIS) Education to Support Urban Planning Research.

Good Day. My name is (Abdulnaser Amin Arafat), from the Department of Urban and Regional Planning at the University of Florida. I am conducting a study of providing hands-on Geographic Information System (GIS) education to support urban planning research. This study compares GIS teaching methodologies between the University of Florida and Palestinian universities. The questions in this survey will review your method in teaching GIS, The facilities provided for the students and to what degree research projects are incorporated in classes taught by you.

The question of the survey can be answered by a personal interview, email or by phone and should take no more than 20 minutes. If at any point the questions being asked make you uncomfortable you may choose not to answer that question and pass to the next question. Your responses will be kept confidential to the extent provided by law.

If you have any questions about this research study, please contact me, Abdulnaser Arafat, at the University of Florida, Urban and Regional Planning Department, PO Box 115706, Gainesville, FL 32611-5706; phone at 352-392-0997 ext. 462, or email at naserarafat@dcp.ufl.edu.

To learn more about your rights in this study, please contact the UF Institutional Review Board Office at 352-392-0433.

Thank you.

Appendix B- Survey Form

Dear Participant:

Please provide your response by underlining your choices and typing in the given choices and Email back your response to (naserarafat@dcp.ufl.edu)

The first set of questions is designed to understand how you use Geographic Information Systems (GIS) and other software programs in your classroom?

1) What Software programs are usually used by the students in the class?
   - a- Word processing
   - b- Spread sheets
   - c- Power point
   - d- Graphic programs (AutoCAD, Photoshop, etc)
   - e- Specialized application programs
     - a. Specify name(s) of programs _____
   - f- GIS software

2) What type of GIS software are you using?
   - a- Arc Map
   - b- Open Source GIS program
     - a. Specify name(s) of program _____
   - c- Other GIS program
     - a. Specify name(s) of program _____

3) If you are using Arc Map What type of license do you have?
   - a- Arc View
   - b- Arc Editor
   - c- Arc Info
   - d- I don't know

4) Do you incorporate GIS applications in your lecture?
   - a- All of the time
   - b- Most of the time (once per week or more but not every class)
   - c- Occasionally (less than once per week)
   - d- No

Now, I am going to ask about what your students need to do to use GIS for their class work.

5) Does the student have Hands-on GIS training in your class?
   - a- Yes
   - b- No

6) Do you require the student to do assignments that needs GIS software?
   - a- Yes
   - b- No

7) Are the students required to buy GIS software?
   - a- Yes
   - b- No

8) Do you provide a license for the students to install the GIS software on their computer?
   - a- Yes
   - b- No

9) Does your college or university require students to have a laptop?
   a- Yes
   b- No

In the next section you will be asked questions about the facilities your department or university provides for students to use computers and the GIS software.

10) Does the college provide computer labs for the students?
   a- Yes
   b- No

11) Where do you offer your class?
   a- Any class room
   b- A class room with a computer an overhead projector
   c- Computer lab
   d- Computer Lab with projector

12) For how many hours per day is the computer lab open?
   a- From 18 hours to 24 hours
   b- From 12 hours to less than 18 hours
   c- From 6 hours to less than 12 hours
   d- Less than 6 hrs

In this section I will be asking questions about your research.

13) Do you have funded research?
   a- Yes
   b- No
   If yes, what are your sources of funding? _____

14) Do have student assistance for the research?
   a- Yes
   b- No

15) Does your research work require GIS analysis?
   a- Frequently (at least 75% or my research involves GIS analysis)
   b- Sometimes (at least 25% and less than 75% of my research involves GIS analysis)
   c- Rarely (less than 25% of my research involves GIS analysis
   d- Never

16) To what degree do you incorporate your research results in the class?
   a- Frequently (at least 75% of the classes)
   b- Sometimes (at least 25% and less than 75% of the classes)
   c- Rarely (less to 25% of the classes)
   d- Never

17) To what extent do you discuss your research with the students in class?
   a- Frequently (at least 75% of the class meetings)
   b- Sometimes (at least 25% and less than 75% of the classes)
   c- Rarely (less than to 25% of the classes)
   d- Never

Finally, these questions identify who you are and where you are located in the University.

18) In what department do you teach? _____

19) In what college is your department located? _____

20) How many years have you been teaching?
   a) Less than 5 years
   b) At least 5 years and less than 10 years
   c) At least 10 years and less than 15 years
   d) 15 years or more

21) What is your highest level of education?
   a) Bachelor Degree (*specify area of specialization*) _____
   b) Master Degree (*specify area of specialization*) _____
   c) Ph.D. of Doctorate (*specify are of specialization*) _____

22) From what university did you receive your highest degree? _____

23) In what year did you receive your highest degree? _____

Braekout Session (5)

بسم الله الرحمن الرحيم

مؤشرات جودة تقويم التحصيل الدراسي لدى طلبة الجامعات من وجهة نظر الأكاديميين الفلسطينيين

إعداد

د . محمد عبد الفتاح شاهين د. عادل عطية ريان

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برنامج التربية – جامعة القدس المفتوحة

منطقة الخليل التعليمية

الملخص

هدفت الدراسة الحالية إلى بناء مقياس لمؤشرات جودة تقويم التحصيل الدراسي لدى طلبة الجامعات من وجهة نظر الأكاديميين الفلسطينيين ، والتحقق من صدق وثبات المقياس باستخدام إجراءات تقنين مناسبة ، ثم اقتراح تصور لآليات تطبيق هذه المؤشرات .

ولتحقيق أهداف الدراسة تم بناء مقياس تكون بصورته النهائية من (51) مؤشراً وزعت على ثلاثة مجالات: تقويم التحصيل ، إعداد الاختبارات النظرية وتطبيقها ، وإعداد الاختبارات العملية وتطبيقها ، وذلك بالاستناد إلى الأدب التربوي واتفاق الخبراء والمحكمين .

وللتأكد من الخصائص السيكومترية للمقياس تم توزيعه على عينة تألفت من (61) أكاديمياً ممن يعملون في الجامعات الفلسطينية ، وأظهرت النتائج تمتع المقياس بدرجة عالية من الصدق والثبات ، مما يشير إلى صلاحية المقياس ومناسبته للاستخدام ، وفي ضوء ذلك يوصي الباحثان بضرورة الاستفادة من مؤشرات المقياس وتطبيقها على إجراءات تقويم التحصيل في الجامعات الفلسطينية .

Abstract

Quality Indicators to Assess Academic Achievement of University Students from the Viewpoint of Palestinian Academics

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The present study aimed to build a measure of the quality indicators to assess academic achievement of university students from the viewpoint of Palestinian academics, verify validity and reliability of the scale using the appropriate standardization procedures, and then propose a vision for implementation mechanisms of these indicators.

To achieve the objectives of the study, a scale of fifty-one indicators, in its final form, was constructed .These indicators were distributed on three domains: achievement evaluation, preparation and

application of theoretical tests, and preparation and application of practical tests. All of this was based on educational literature and agreement among experts and arbitrators.

To make sure of the psychometric properties of the scale, it was distributed to a sample consisting of (61) academics who work at Palestinian universities. Results showed that the scale had a high degree of validity and reliability indicating the appropriateness of the scale for use. In light of this, the two researchers recommend the need to utilize the indicators of this scale and to implement them on the procedures of achievement evaluation in Palestinian universities.

مقدمة الدراسة وخلفيتها:

تتطلب عمليتا التعليم والتعلم جمع البيانات والمعلومات بشكل مستمر من أجل الاعتماد عليها في اتخاذ القرارات وهذا يتطلب وجود عملية تقويم للحصول على البيانات التي يتم توظيفها بشكل فعال في اتخاذ القرارات حول تقدم الطلاب ، والمناهج ، والبرامج والسياسات التعليمية (Nitko ,1996) ، لذلك هناك توافق بين المهتمين والباحثين في التعليم العالي على أن أغراض التحسين والتطوير يجب أن تأخذ طريقها بقوة في مؤسسات التعليم العالي باعتبار أن تحقيق جودة الخدمات التي تقدمها هذه المؤسسات تمثل هدفاً نهائياً لما يدور في إطارها من عمليات ، وهذا بطبيعة الحال يتطلب وجود نظام فعال للتقويم ينصب على مجمل مدخلات وعمليات ومخرجات النظام التعليمي برمته ، خصوصاً وأن الضغوط ازدادت على مؤسسات التعليم العالي في مطلع الألفية الثالثة بشكل كبير لتبني آليات لضبط الجودة وضمانها ، بفعل عوامل عديدة أبرزها العولمة والتطور في تكنولوجيا المعلومات والاتصالات (سلامة ،2005).

ويرى (Ratheoford ,1987) أن الجامعات ستبقى واقعة تحت ضغوط مستمرة من أجل تحديد وتطوير وتطبيق مؤشرات للإنجاز في كافة أنشطتها بغية تحديد فعاليتها وتدعيم التخطيط المؤسسي فيها ، وهذا يبرز دور وأهمية التقويم في التعليم العالي ، وقد ذكر (Brown & Marshall ,2008) أن هناك أربعة أبعاد للجودة في التعليم وهي : المساءلة ، والمناهج الدراسية ، والتقويم ، ورضا المستفيدين ، ويؤكد على أن دور التقويم المنصب على تقدير مخرجات التعليم في الجامعات ، وتقديم التغذية الراجعة للطلاب بحيث أن تستخدم نتائجه من أجل التطوير وتحسين مخرجات التعلم .

فالتقويم يشكل عنصراً أساسياً في نظام الجودة ، لأنه يشكل المصدر الوحيد للحكم ومتابعة التقدم نحو الأهداف، واستشراق آفاق التحسين والتطوير في التعليم العالي ، كما أنه يمثل أحد العناصر التي تضمن مخرجات الجودة والتحسين لمخرجات التعلم والتي لا يمكن تحقيقها دون إصلاح شامل في عملية التقويم ، في ضوء ذلك شهد التقويم تحولات من حيث أغراضه ووسائله وعلاقته بالواقع ومعاييره ، فبعد أن كان التقويم مكرساً على تقويم المتعلم أو قياس ما يعرفه أصبح التركيز في جهود إصلاح التقويم على مفهوم التقويم للتعلم أو لتحسين التعلم إضافة إلى أن التحولات التي طرأت على أغراض التقويم أحدثت نقلة نوعية في فلسفة الممارسات التقويمية وأساليبها ، بحيث تم خلال السنوات الأخيرة تبني ما يعرف بالتقويم الحقيقي باعتباره تقويماً يقيس بواقعية وموضوعية المعارف والمهارات التي ينبغي أن يمتلكها المتعلم للنجاح في الحياة العملية مستقبلاً ، وبالتالي فإن نظام التقويم الجيد يجب أن يستند إلى معايير واضحة ومحددة تصف بشكل محدد ما يجب أن يتعلمه الطالب (الحكمي ،1428) .

وهناك من يرى أن تقويم تحصيل الطلبة في مؤسسات التعليم العالي تحقق ثلاثة أهداف رئيسة تتمثل في : تعزيز فعالية الطلبة للإقبال على التعلم ، وقياس مدى تحقق مخرجات التعلم المتوقعة ، كما أنه يمنح الدرجات للطلاب ويشكل حماية (ضمانة) للمعايير الأكاديمية ، فالتصميم الجيد للتقويم يساهم وبشكل مباشر في تحسين جودة تعلم الطلاب لأنه يؤثر على أنماط دراسة الطلبة بطريقة إيجابية ، كما أنه يقدم للطالب تغذية راجعة تساعده في تحسين تعلمه (Cshe ,2002) .

وقد اعتبر (Ramsden) عام 1991 أن من خصائص التدريس الجيد تقويم تحصيل الطلاب وتقديم تغذية راجعة لهم باعتبار أن التقويم يعتبر أحد المحفزات الأساسية في التعلم (Horsburgh ,1999) ، ولكي يقوم التقويم بدوره لا بد وأن ينفذ بمهنية في جميع الأوقات وينبغي أن يستند إلى المعرفة الشاملة المتعلقة ببناء الاختبارات وإجراء عملية التقويم ، لا سيما وأن تقويم تحصيل الطلاب يقدم للمؤسسة التعليمية مؤشرات حول فعالية التعلم ، لذلك سعت الرابطة الأوروبية لضمان الجودة في التعليم العالي إلى تحديد جملة من المعايير التي ينبغي أخذها بعين الاعتبار في تصميم تقويم من أبرزها أن يتم تصميم التقويم في ضوء الأهداف ،وأن يكون التقويم عادلاً وموضوعياً مع ضرورة الأخذ بعين الاعتبار الغرض الأساسي من عملية التقويم ، مع مراعاة جميع متطلبات بناء الاختبارات ، وضمان سرية التقويم في إطار الإجراءات التي تعتمدها المؤسسة (Anqa ,2009) .

وقد بذلت جهود متعددة من قبل الجامعات والمؤسسات القائمة على ضمان الجودة ، لتحديد معايير لجودة التقويم ، فقد التقى فريق عمل عالمي عام 2008 بغية التعرف على معايير تقويم تحصيل الطلاب في جامعات العديد من الدول ، من أجل استخلاص ووضع معايير عامة يمكن الاستناد إليها في عملية التقويم ، وتمت الإشارة إلى أن الممارسات التقويمية مختلفة بشكل كبير بين الدول والمناطق والمؤسسات وأيضاً وفقاً لكل موضوع ، غير أن الأهم من هذا كله هو تصميم الممارسات التقويمية تعاونياً وبنزاهة مع ضمان أن تكون الممارسات مفتوحة للتدقيق، وقد خلص فريق العمل إلى جملة من المعايير لتقويم تحصيل الطلاب من أبرزها التأكيد على ضرورة مراعاة خواص الصدق والثبات والشمول لمخرجات التعلم

مع ضرورة الربط بين التقويم في أي موضوع مع جميع مخرجات التعلم للبرنامج التعليمي ، وأن تكون الممارسات التقويمية خاضعة للمراجعة (Group Work ,2008) .

وأما في بلادنا العربية فإن تقرير التنمية الإنسانية العربية لعام 2003 قد أعطى مؤشرات غير جيدة على موضوعات تصميم المناهج والمقررات الدراسية وفاعلية أساليب التقويم ، بحيث لم تصل إلى درجة التميز حسب المقاييس الدولية ، حيث كان التقدير التي حازت عليه مقبولاً (طايع ،2006) ، وفي فلسطين لا زال نظام التقويم التقليدي هو السائد في الجامعات الفلسطينية وهو يتصف بالقصور ويعود ذلك لجملة من الأسباب أبرزها أن التقويم يلخص التحصيل في العلامة دون النظر للأهداف ، كما أنه قاصر عن إعطاء مؤشرات حقيقية عن سير العملية التعليمية إضافة لغياب الاهتمام بالتغذية الراجعة ودورها في تحسين التعلم (أبو دقة ،2004) ، لهذا فإن جامعاتنا اليوم مطالبة بالعمل على إجراء عمليات تطوير وتحسين بسبب ما تعانيه من نقاط ضعف ، وعليها أن تتبنى تطبيق الجودة الشاملة في التعليم لما تحدثه من تحسين في المجلات الإدارية ، وتطوير المناهج ، ورفع مستوى العاملين ، وتحسين مخرجات التعليم ، وتطوير أساليب القياس والتقويم ، وتحسين استخدام التقنيات التربوية (العاجز ،2005) .

ويرى الحبازي (2007) أن الكادر الأكاديمي في الجامعات العربية عموماً بحاجة ماسة إلى الإعداد التربوي المنظم لمساعدته في تحقيق الأهداف المنشودة للجامعات التي يعملون فيها ، وذلك من خلال التدريب وتبني خمس قضايا أساسية ينبغي العمل على تطويرها لعضو هيئة التدريس وهي : معرفة الأهداف ، والمناهج الدراسية ، وطرق التعليم ، وأساليب التقويم المتنوعة ، وتقويم الأداء التدريسي ذاتياً .

وفي ذات السياق أشار سعيد (2009) إلى أن هناك ضعفاً في أساليب وإجراءات تقويم تحصيل الطلبة في الجامعات ، وبين أن عدم كفاءة الامتحانات في الجامعات مرده إلى الأعداد الكبيرة من الطلاب وعدم امتلاك أعضاء الهيئات التدريسية لكفايات التقويم الفعال ، إضافة إلى أن مدرسي الجامعات يعمدون إلى التعليم والتقويم وفقاً للأساليب التي تعلموا وقوموا بها ، وطالب بضرورة وجود نظام تقويم حديث ومعاصر يصوب مسار التقويم ويساهم في التغلب على نقاط الضعف التي تعتريه .

من هنا فإن تحسين وتطوير عمليات التقويم يتطلب وجود معايير محددة خصوصاً وأن المعايير تستأثر اليوم على اهتمام العاملين في مجال القياس والتقويم ، لأنها تؤدي إلى اعتماد مرجعيات واضحة قابلة للقياس ومتفق عليها من قبل ذوي العلاقة في المؤسسات التعليمية ، ولذلك فمن الضروري وجود مؤشرات لكل معيار بحيث يمكن توظيف هذه المؤشرات في القياس والحكم على واقع الحال بموضوعية وشفافية ، وبما يمكن من استعمال النتائج لتحسين مخرجات التعليم من خلال وضع اليد على مواطن الضعف ومعالجتها (نحاس ،2008) .

ونظراً لبروز توجه عالمي لموضوع الجودة بشكل عام والتقويم بشكل خاص ، فقد ارتأى الباحثان إجراء هذه الدراسة انطلاقاً من الواقع الفلسطيني بغية تحديد جملة من المؤشرات حول موضوع تقويم تحصيل الطلبة في الجامعات الفلسطينية ، لخدمة إجراءات التحسين والتطوير لا سيما بعد صدور تقرير البنك الدولي مؤخراً والذي أعطى مؤشرات قاتمة حول واقع التعليم العالي في معظم البلدان العربية ومنها فلسطين .

مشكلة الدراسة :

تنحصر مشكلة الدراسة في بناء وتقنين مقياس لمؤشرات جودة تقويم التحصيل الدراسي لدى طلبة الجامعات من وجهة نظر الأكاديميين الفلسطينيين ، واقتراح الآليات المناسبة للتطبيق .

وبالتحديد حاولت هذه الدراسة الإجابة عن التساؤلات الآتية :

1 – ما هي مؤشرات جودة تقويم التحصيل الدراسي لدى طلبة الجامعات من وجهة نظر الأكاديميين الفلسطينيين ؟

2 – ما هي دلالات صدق مقياس جودة تقويم التحصيل الدراسي لدى طلبة الجامعات من وجهة نظر الأكاديميين الفلسطينيين ؟

3 – ما هي دلالات ثبات مقياس جودة تقويم التحصيل الدراسي لدى طلبة الجامعات من وجهة نظر الأكاديميين الفلسطينيين ؟

4 – ما هي آليات توظيف مؤشرات جودة تقويم التحصيل الدراسي في مؤسسات التعليم العالي في فلسطين ؟

أهداف الدراسة :

هدفت الدراسة الحالية إلى :

1 - بناء مقياس لمؤشرات جودة تقويم التحصيل الدراسي لدى طلبة الجامعات من وجهة نظر الأكاديميين الفلسطينيين ، كما هدفت إلى التحقق من صدق وثبات المقياس باستخدام إجراءات تقنين مناسبة .

2 – بناء تصور مقترح لآليات توظيف مؤشرات جودة تقويم التحصيل الدراسي في مؤسسات التعليم العالي في فلسطين .

أهمية الدراسة :

تكتسب هذه الدراسة أهميتها من حيث :

1 - دورها في تعزيز ثقافة الجودة لدى مؤسسات التعليم العالي في مجال تقويم التحصيل الدراسي باعتباره أحد ضوابط مخرجات هذه المنظومة .

2 – تحديد مؤشرات لضمان الجودة في تقويم التحصيل الدراسي يمكن الاستفادة منها في تحسين وتطوير آليات التقويم المتبعة في الجامعات الفلسطينية .

3 – من المتوقع أن تفتح هذه الدراسة آفاقاً أمام الباحثين للتوجه نحو إجراء المزيد من الدراسات في هذا المجال .

حدود الدراسة :

اقتصرت هذه الدراسة على الأكاديميين من حملة درجة الدكتوراه في التربية ، والعاملين في مؤسسات التعليم العالي الفلسطينية ، خلال الفصل الثاني من العام الدراسي 2010/2009 ، كما اقتصرت على المؤشرات العامة لجودة التقويم ، والاختبارات العملية والنظرية وتطبيقها دون غيرها من الأدوات الأخرى .

التعريفات الإجرائية :

منهج الدراسة :

تم اتباع المنهج الوصفي في هذه الدراسة ، باعتباره المنهج المناسب لطبيعة وأهداف هذه الدراسة .

عينة الدراسة :

تكونت عينة الدراسة من (61) أكاديمياً ممن يعملون في مؤسسات التعليم العالي الفلسطينية خلال الفصل الثاني من العام الدراسي 2010/2009 .

خطوات بناء أداة الدراسة :

تمت خطوات بناء أداة الدراسة ضمن التسلسل الآتي :

1 – استعراض الأدبيات المتعلقة بأسس ومبادئ الجودة الشاملة وتطبيقاتها في المجالات التربوية ، ثم تتبع المعايير والمؤشرات المتعلقة بجودة التقويم التربوي ، وتم في ضوئها تحديد المجالات المستهدفة وهي : جودة التقويم ، جودة إعداد الاختبارات النظرية وتطبيقها ، جودة إعداد الاختبارات العملية وتطبيقها .

2 – قام الباحثان باقتراح المؤشرات الدالة لكل مجال من المجالات السابقة بالرجوع إلى العديد من المصادر ذات العلاقة (Nitko, 1999) و(الصراف ، 2002) و(سويدان ،2010) و(Draper ,2007)، و(عودة ، 2002) و(ANQA,2009) و (International Group Work,2008) وبالاستعانة ببعض الخبراء والمختصين في مجال التقويم التربوي (8) ، حيث اتفق الخبراء على (52) مؤشراً وزعت على هذه المجالات ، ثم رتبت هذه المؤشرات في استبانة وفق سلم استجابة خماسي (بدرجة عالية جداً ، بدرجة عالية ، بدرجة متوسطة ، بدرجة منخفضة ، بدرجة منخفضة جداً) .

3 – تم عرض المقياس على (14) محكماً من أساتذة الجامعات والمختصين في مجال التقويم التربوي ، وفي ضوء ملاحظات المحكمين تم تعديل الصياغات اللفظية لبعض مؤشرات المقياس دون استبعاد أي مؤشر .

المعالجة الإحصائية :

للإجابة عن سؤال الدراسة الأول ، تم استخراج المتوسطات الحسابية والانحرافات المعيارية والنسب المئوية لتقديرات أفراد العينة لأهمية كل مؤشر من مؤشرات المقياس ، بحيث أعطيت الإجابات (بدرجة عالية جداً ، بدرجة عالية ، بدرجة متوسطة ، بدرجة منخفضة ، بدرجة منخفضة جداً) الأوزان الآتية على الترتيب (5 ، 4 ، 3 ، 2، 1) ، واعتمد مستوى 80 % فأعلى كمحك لقبول المؤشر ، وللإجابة عن سؤال الدراسة الثاني تم استخدام اختبار معاملات ارتباط بيرسون ، وللإجابة عن سؤال الدراسة الثالث تم إيجاد معامل الاتساق الداخلي باستخدام معادلة (ألفا – كرونباخ) ، وكذلك طريقة التجزئة النصفية المعدلة باستخدام معادلة سبيرمان – براون .

نتائج الدراسة :

أولاً : النتائج المتعلقة بالإجابة عن السؤال الأول

نص السؤال الأول: ما هي مؤشرات جودة تقويم التحصيل الدراسي لدى طلبة الجامعات من وجهة نظر الأكاديميين الفلسطينيين ؟

للإجابة عن هذا السؤال ، تم استخراج المتوسطات الحسابية والانحرافات المعيارية والنسب المئوية لاستجابات أفراد العينة على كل مؤشر من مؤشرات مجالات المقياس ، وكما هي موضحة في الجداول رقم (1 – 3) .

المجال الأول : المؤشرات العامة لجودة تقويم التحصيل

جدول رقم (1) : المتوسطات الحسابية والانحرافات المعيارية والنسبة المئوية لكل مؤشر من المؤشرات العامة لجودة تقويم التحصيل

رقم المؤشر	المؤشر	المتوسط الحسابي	الانحراف المعياري	النسبة المئوية
1 -	الانطلاق في عملية التقويم باعتبارها جزءاً لا يتجزأ من عمليتي التعليم والتعلم	4.36	0.80	0.87
2 -	اعتبار التقويم وسيلة لزيادة دافعية الطالب نحو التعلم والتحصيل	4.26	0.77	0.85
3 -	اعتبار التقويم وسيلة لتعديل استراتيجيات الطالب الدراسية	4.25	0.72	0.85
4 -	ضرورة مراعاة التكامل بين وسائل تقويم التحصيل الدراسي المختلفة (اختبارات ، تقارير ، أبحاث ...)	4.46	0.67	0.89
5 -	الحرص على اتباع التقويم بالتغذية الراجعة المناسبة .	4.34	0.79	0.87
6 -	ضرورة توفر الخصائص (السيكومترية) في أدوات التقويم المستخدمة	4.16	0.84	0.83
7 -	التأكيد على دور التقويم في إبراز مؤشرات على درجة نجاح سير النظام التعليمي	4.08	0.84	0.82
8 -	توظيف نتائج التقويم في تطوير عمليتي التعليم والتعلم	4.33	0.83	0.87
9 -	شمول التقويم لكافة الأنشطة والإنجازات التي يقوم بها الطالب	4.22	0.86	0.84
10 -	شمولية التقويم لأهداف التعلم بمجالاتها ومستوياتها المختلفة	4.36	0.80	0.87
11 -	اعتبار التقويم مصدراً للحصول على مؤشرات واضحة وموثوقة عن أداء الطلبة وفقاً لمعايير محددة بدقة	4.30	0.72	0.86
12 -	ضرورة توخي الدقة والموضوعية في إصدار الأحكام على ضوء نتائج التقويم	4.51	0.70	0.90
13 -	شمولية التقويم لكافة مكونات المحتوى التعليمي المستهدف.	4.38	0.76	0.88
14 -	مساهمة التقويم في تدريب الطلاب والمدرسين على آليات التقويم الذاتي للأداء	4.11	0.73	0.82
15 -	اتصاف التقويم بالاستمرارية خلال سير الفصل الدراسي	4.44	0.72	0.89
16 -	اتصاف التقويم (بالعدالة والإنسانية) في إجراءاته ومواعيده	4.44	0.65	0.89
17 -	تحديث وتطوير إجراءات التقويم في ضوء المستجدات والتطورات الحديثة في مجال التعليم الجامعي	4.41	0.69	0.88
18 -	اتصاف التقويم بالتعاونية بحيث يشترك في هذه العملية كل من له علاقة بالعملية التعليمية في الجامعة	4.15	0.73	0.83
19 -	ضرورة توفر دليل شامل لمعايير وإجراءات التقويم	4.41	0.64	0.88

يتضح من الجدول السابق (1) أن المتوسطات الحسابية لمؤشرات مجال جودة تقويم التحصيل قد تراوحت بين 4.08 إلى 4.51 ، وبنسب مئوية تجاوزت 80 % (النسبة المئوية للقبول) ، مما يعني صلاحية جميع فقرات هذا المجال كمؤشرات لمقياس جودة تقويم التحصيل لدى طلبة الجامعات .

المجال الثاني : مؤشرات جودة إعداد الاختبارات النظرية وتطبيقها

جدول رقم (2) : المتوسطات الحسابية والانحرافات المعيارية والنسبة المئوية لكل مؤشر من مؤشرات جودة إعداد الاختبارات النظرية وتطبيقها

رقم المؤشر	المؤشر	المتوسط الحسابي	الانحراف المعياري	النسبة المئوية	درجة الأهمية
1 -	أن تغطي الأسئلة أهداف المقرر الدراسي	4.62	0.55	0.92	مرتفعة جدا
2 -	أن يتم صياغة الأسئلة في ضوء الأهمية النسبية لوحدات المقرر الدراسي	4.43	0.67	0.89	مرتفعة جدا
3 -	أن تصاغ أسئلة الاختيار بدقة وبوضوح بحيث يكون المطلوب من السؤال واضحا ومحددا ودقيقا	4.56	0.67	0.91	مرتفعة جدا
4 -	أن تراعي أسئلة الاختبار التدرج في مستويات صعوبة الأسئلة	4.49	0.65	0.90	مرتفعة جدا
5 -	أن يتم تنويع أسئلة الاختبار وفقاً لأنواع الأسئلة المختلفة	4.34	0.77	0.87	مرتفعة جدا
6 -	أن يتناسب عدد أسئلة الاختبار مع الزمن المقرر للاختبار	4.49	0.74	0.90	مرتفعة جدا
7 -	أن تتمتع أسئلة الاختبار بالقدرتين التشخيصية والتمييزية	4.38	0.80	0.88	مرتفعة جدا
8 -	تجنب استخدام الأسئلة الاختيارية لأنها تضعف القدرة التمييزية للاختبار	3.69	1.03	0.74	مرتفعة

9 -	أن تشكل أسئلة الاختبار مواقف تعليمية تعلمية من خلال إتاحة فرص للمتعلم لاكتساب خبرات أو معارف جديدة	4.11	0.80	0.82	مرتفعة جدا
10 -	أن يتصف الاختبار بالثبات	4.41	0.67	0.82	مرتفعة جدا
11 -	يتم ترتيب أسئلة الاختبار وفق تتابع درجة صعوبتها مع مراعاة المحتوى والأهداف	4.26	0.68	0.85	مرتفعة جدا
12 -	ضرورة احتواء الاختبار على تعليمات واضحة ومحددة	4.56	0.62	0.91	مرتفعة جدا
13 -	ضبط إجراءات تطبيق الاختبار بشكل سليم	4.49	0.65	0.90	مرتفعة جدا
14 -	توفير مناخات فيزيقية ونفسية مناسبة لتقديم الاختبار	4.44	0.62	0.89	مرتفعة جدا
15 -	يتم تصحيح إجابات الطلاب وفقاً لإجابة نموذجية محددة	4.39	0.88	0.88	مرتفعة جدا
16 -	يتم تقديم تغذية راجعة للطلاب في ضوء أدائهم على الاختبار ضمن سقف زمني معقول	4.25	0.722	0.85	مرتفعة جدا

يظهر الجدول السابق (2) أن المتوسطات الحسابية لمؤشرات مجال إعداد الاختبارات النظرية وتطبيقها قد تراوحت بين 4.11 إلى 4.62 ، باستثناء الفقرة رقم (8) التي حصلت على متوسط أقل من المستوى المقبول (3.69 بنسبة مئوية مقدارها 74 %) ، مما يستدعي استبعاد هذه الفقرة ، وعليه فإن الفقرات المتبقية لهذا المجال تصلح كمؤشرات لمقياس جودة إعداد الاختبارات النظرية وتطبيقها .

المجال الثالث : جودة إعداد الاختبارات العملية وتطبيقها

جدول رقم (3) : المتوسطات الحسابية والانحرافات المعيارية لكل مؤشر من مؤشرات جودة إعداد الاختبارات العملية وتطبيقها

رقم المؤشر	المؤشر	المتوسط الحسابي	الانحراف المعياري	النسبة المئوية
1 -	تحديد الأهداف الرئيسة للاختبار العملي يتم في ضوئها صياغة أسئلة الاختبار	4.28	0.82	0.86
2 -	التأكد من أن المهام المطلوب تنفيذها من قبل الطلاب سبق لهم التدرب عليها	4.30	0.72	0.86
3 -	أن يتناسب نوع المهمات المطلوب تنفيذها مع الزمن المحدد للاختبار	4.38	0.71	0.88
4 -	ضرورة توظيف الأنواع المختلفة من الاختبارات العملية	4.28	0.71	0.86
5 -	يتم تحديد خطوات ومراحل الأداء مسبقاً للاستناد عليها في تقدير علامات إنجاز الطلاب	4.23	0.84	0.85
6 -	تهيئة الأماكن المناسبة (مختبرات ، مشاغل ، قاعات ...) لتنفيذ الاختبار مسبقاً من الناحيتين الفنية والإدارية	4.38	0.86	0.88
7 -	توفير أجواء فيزيقية ونفسية مريحة لإجراء الاختبار	4.34	0.87	0.87
8 -	ضمان وسائل الأمان في المختبرات والمشاغل التي يتم فيها تقديم الاختبار	3.44	0.79	0.89
9 -	وجود تعليمات واضحة ومحددة لأداء الاختبار	4.39	0.86	0.88
10 -	ضرورة توفير نموذج خاص لأداء الاختبار يوضح فيه المتعلم الإجراءات والخطوات والنتائج	4.15	0.87	0.83
11 -	ضمان الملاحظة المباشرة والمتابعة لأداء الطلبة أثناء أداء المهام من خلال قائمة رصد	4.20	0.89	0.84
12 -	أن تشكل انجازات الطلبة مؤشرات حقيقية عن مستويات أدائهم على الاختبار العملي	4.21	0.78	0.84
13 -	ضرورة وضع نماذج متكافئة من أسئلة الاختبارات العملية بحيث لا تتكرر المهام المطلوب تنفيذها من قبل الطلاب	4.23	0.76	0.85
14 -	ضرورة الأخذ بعين الاعتبار ملاحظات وتعليقات الطلبة على أسئلة الاختبار أثناء تنفيذه	4.03	0.84	0.81
15 -	أن تكون المهام المطلوب تنفيذها من الطلاب مراعية لمعايير السرعة والدقة والإتقان	4.41	0.69	0.88
16 -	أن تكون المهام والأنشطة المطلوب تنفيذها من قبل الطلاب ذات أهمية في مستقبلهم المهني	4.28	0.69	0.86
17 -	ينبغي أن يتصف تقدير علامات الطلاب على الأداء بالموضوعية والعدالة وفقاً لمعايير محددة	4.57	0.64	0.91

يتبين من الجدول السابق (3) أن المتوسطات الحسابية لمؤشرات هذا المجال قد تراوحت بين 4.03 إلى 4.57 ، وبنسب مئوية تجاوزت المستوى المقبول ، وهذه الشواهد الإحصائية تعزز من صلاحية فقرات هذا المجال كمؤشرات لجودة إعداد الاختبارات العملية وتطبيقها.

وفي ضوء ما تقدم ، أصبحت مؤشرات هذا المقياس مكونة من (51) مؤشراً موزعة على مجالاته الثلاث بعد استبعاد مؤشر واحد ، والجدول رقم (4) يوضح المتوسطات الحسابية والانحرافات المعيارية والنسب المئوية لكل مجال من هذه المجالات .

جدول رقم (4) : جدول رقم (4) : المتوسطات الحسابية والانحرافات المعيارية والنسب المئوية لكل مجال من مجالات مقياس جودة تقويم التحصيل الدراسي

المجال	عدد الفقرات	المتوسط الحسابي	الانحراف المعياري	النسبة المئوية
جودة تقويم التحصيل	19	4.31	0.56	0.86
جودة إعداد الاختبارات النظرية وتطبيقها	15	4.42	0.49	0.88
جودة إعداد الاختبارات العملية وتطبيقها	17	4.30	0.59	0.86
المقياس ككل	52	4.34	0.51	0.87

يتضح من الجدول السابق (4) أن المتوسط الحسابي لاستجابات أفراد العينة على المقياس ككل قد بلغ (4.34) ، وبلغ لمجال جودة تقويم التحصيل (4.31) ، ولمجال جودة إعداد الاختبارات النظرية (4.42)، ولمجال جودة إعداد الاختبارات العملية (4.30)، وجميعها جاءت بنسب مئوية أعلى من المستوى المقبول .

ثانياً : النتائج المتعلقة بالإجابة عن السؤال الثاني

نص السؤال الثاني: ما هي دلالات صدق مقياس جودة تقويم التحصيل الدراسي لدى طلبة الجامعات من وجهة نظر الأكاديميين الفلسطينيين ؟

للإجابة عن هذا السؤال ، تم حساب معاملات الارتباط لكل مؤشر من مؤشرات المقياس مع الدرجة الكلية له ، حيث تراوحت للمجال الأول بين 0.570 – 0.855، وتراوحت للمجال الثاني بين 0.515 – 0.719 ، وللثالث 0.435 – 0.719 ، كما تم حساب معاملات الارتباط لكل مؤشرات مع الدرجة الكلية له ، إذ تراوحت للمجال الأول بين 0.639 – 0.852 ، وللثاني 0.390 – 0.807 ، وللثالث 0.566 – 0.868 ، وجميعها قيم دالة إحصائياً عند مستوى الدلالة ($\alpha \leq 0.01$) .

وللتحقق من الصدق البنائي للمقياس ، تم حساب مصفوفة الارتباط البينية لمجالات المقياس ، والجدول رقم (5) يوضح ذلك .

جدول رقم (5) : مصفوفة معاملات الارتباط البينية لمجالات مقياس جودة تقويم التحصيل

المجالات	جودة تقويم التحصيل	جودة إعداد الاختبارات النظرية وتطبيقها	جودة إعداد الاختبارات العملية وتطبيقها	المقياس ككل
جودة تقويم التحصيل		٠,٨٤٨ **	٠,٨٠١ **	٠,٩٨٢ **
جودة إعداد الاختبارات النظرية وتطبيقها			٠,٧٤٣ **	٠,٨١٢ **
جودة إعداد الاختبارات العملية وتطبيقها				٠,٨١٨ **
المقياس ككل				

يتضح من الجدول السابق (5) أن جميع معاملات الارتباط البينية لمعايير المقياس قد تراوحت بين 0.743 – 0.982 وجميعها معاملات ارتباط مرتفعة ودالة إحصائياً عند مستوى الدلالة ($\alpha \leq 0.01$) ، مما يعني تحقق الصدق البنائي للمقياس .

ثالثاً : النتائج المتعلقة بالإجابة عن السؤال الثالث

نص السؤال الثالث: ما هي دلالات ثبات مؤشرات مقياس جودة تقويم التحصيل الدراسي لدى طلبة الجامعات من وجهة نظر الأكاديميين الفلسطينيين ؟

للإجابة عن هذا السؤال ، تم إيجاد ثبات مقياس الدراسة بحساب معامل الاتساق الداخلي للمقياس ككل ولكل مجال من مجالاته الثلاث باستخدام معادلة (ألفا – كرونباخ)، وباستخدام طريقة التجزئة النصفية المعدلة بطريقة سبيرمان- براون ، والجدول رقم (6) يوضح ذلك .

جدول رقم (6) : معاملات الثبات لمقياس مؤشرات جودة تقويم التحصيل الدراسي ككل ولكل مجال من مجالاته

المجال	معامل الثبات	
	بطريقة الاتساق الداخلي	التجزئة النصفية
جودة تقويم التحصيل	٠,٩٦	٠,٩٠
جودة إعداد الاختبارات النظرية وتطبيقها	٠,٩٢	٠,٨٩
جودة إعداد الاختبارات العملية وتطبيقها	٠,٩٥	٠,٨٢
المقياس ككل	٠,٩٧	٠,٩٢

يتبين من الجدول السابق أن جميع معاملات الثبات جاءت مرتفعة ، مما يشير إلى تمتع المقياس ومجالاته الثالثة بدرجة ثبات مرتفعة .

رابعاً : النتائج المتعلقة بالإجابة عن السؤال الرابع

نص السؤال الرابع: ما هي آليات توظيف مؤشرات جودة تقويم التحصيل الدراسي في مؤسسات التعليم العالي في فلسطين ؟

بغية الاستفادة من مؤشرات جودة تقويم التحصيل الدراسي لدى طلبة الجامعات ، يقترح الباحثان منظومة مترابطة ومتسلسلة من الخطوات تتضمن آليات التوظيف الفعال لهذه المؤشرات في جميع التخصصات ، والشكل الآتي رقم (1) يوضح ذلك :

اعتماد مؤشرات جودة التقويم بصورة مبدئية من قبل وزارة التعليم العالي

↓

تعميم مؤشرات الجودة على الجامعات

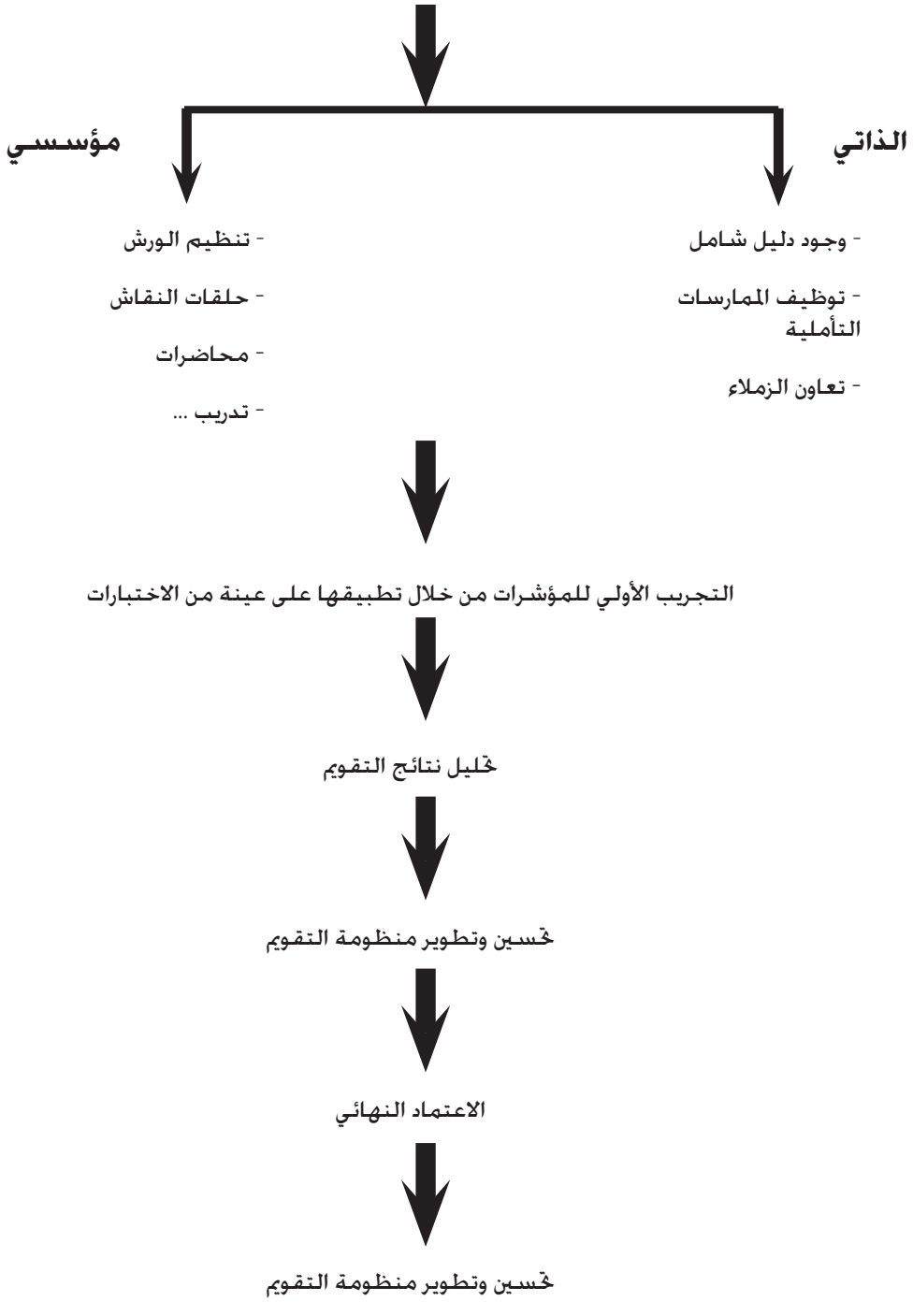
↓

تعميم مؤشرات الجودة على أعضاء هيئات التدريس

↓

البدء في مرحلة التطوير المهني لتوظيف مؤشرات الجودة

↓



مناقشة النتائج :

يتضح من النتائج السابقة أن مقياس مؤشرات جودة تقويم التحصيل الدراسي لدى طلبة الجامعات قد حقق درجة عالية من الصدق والثبات ، إذ أن دلالات صدق المحتوى قد تحققت بإجماع المحكمين ، وجاءت نتائج إجراءات الضبط الإحصائي المستندة إلى تحليل استجابات الخبراء معززة لصدق المقياس ، كما جاءت دلالات ثبات المقياس أيضاً مرتفعة ، مما يعني تمتع المقياس بمجالاته الثلاث بخصائص سيكومترية مناسبة ، الأمر الذي يطمئن من صلاحية مؤشرات هذا المقياس وموثوقيتها للاستخدام في أغراض متعددة .

أما فيما يتعلق بتوظيف المؤشرات في كافة التخصصات فلا بد من الإشارة هنا أن هذه المؤشرات عامة وتصلح لكافة الاختبارات بغض النظر عن التخصصات التي تطبق فيها ، فالفارق هنا في التطبيق يعود لأهداف المقرر وطبيعة المحتوى ، وهذا ما يلبيه جدول المواصفات للمقرر ، وبالتالي يرى الباحثان أن من أولى الإجراءات لتطبيق

هذه المؤشرات ضرورة وجود جداول مواصفات لكل مقرر دراسي على حدة ، مع الأخذ بعين الاعتبار منظومة آليات التطبيق المقترحة سابقاً .

التوصيات :

في ضوء إجراءات الضبط والتقنين السابقة لمقياس الدراسة ، يوصي الباحثان بالآتي :

1 – استخدام المقياس في مؤسسات التعليم العالي لتطوير كفايات أعضاء الهيئات التدريسية في مجال تقويم التحصيل الدراسي ، بما ينعكس على جودة عملية تقويم تحصيل الطلبة .

2 – إجراء دراسات مكملة بهدف تقنين أدوات تقويم تحصيل الطلاب ومنها التقارير والأبحاث والعروض التقديمية والأنشطة.

3 – الحرص على الاستفادة من نتائج التقويم المستندة إلى هذه المؤشرات في تحسين عمليتي التعليم والتعلم باعتبار نتائج التقويم الجيد ضمانة للحصول على دلالات عن جودة التعليم الجامعي برمته .

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ملحق رقم (1)

مقياس مؤشرات جودة تقويم التحصيل الدراسي لدى طلبة الجامعات

بسم الله الرحمن الرحيم

حضرة الزميل/الزميلة المحترم/ة

تحية

يقوم الباحثان بإعداد مقياس لمؤشرات جودة تقويم التحصيل الدراسي لدى طلبة الجامعات من وجهة نظر الأكاديميين الفلسطينيين ، ونظراً لما تتمتعون به من خبرة ومعرفة في هذا المجال، **فإننا نأمل منكم الإجابة عن كل فقرات المقياس بوضع إشارة (X) تحت الدرجة التي تعبر عن أهمية توافر كل مؤشر من المؤشرات المقترحة** ، علماً بأن هذه البيانات لن تستخدم إلا لأغراض البحث العلمي .

وتفضلوا بقبول فائق الاحترام

د. محمد شاهين د . عادل ريان

القسم الأول : المعلومات العامة

الخبرة : أ – أقل من (5) سنوات ب – (5 – 10) سنوات ج – أكثر من 10 سنوات

الرتبة العلمية : أ – أستاذ مساعد ب – أستاذ مشارك ج- أستاذ

أولاً : المؤشرات العامة لجودة تقويم التحصيل

رقم الفقرة	الفقرة	درجة				
		عالية جداً	عالية	متوسطة	منخفضة	منخفضة جداً
.1	الانطلاق في عملية التقويم باعتبارها جزءاً لا يتجزأ من عمليتي التعليم والتعلم					
.2	اعتبار التقويم وسيلة لزيادة دافعية الطالب نحو التعلم والتحصيل					
.3	اعتبار التقويم وسيلة لتعديل استراتيجيات الطالب الدراسية					
.4	ضرورة مراعاة التكامل بين وسائل تقويم التحصيل الدراسي المختلفة (اختبارات ، تقارير ، أبحاث ...)					
.5	الحرص على اتباع التقويم بالتغذية الراجعة المناسبة					
.6	ضرورة توفر الخصائص السيكومترية في أدوات التقويم المستخدمة					
.7	التأكيد على دور التقويم في إبراز مؤشرات عن درجة نجاح سير النظام التعليمي					
.8	توظيف نتائج التقويم في تطوير عمليتي التعليم والتعلم					
.9	شمول التقويم كافة الأنشطة والإنجازات التي يقوم بها الطالب (جميع جوانب نمو المتعلم)					

.10	شمولية التقويم لأهداف التعلم بمجالاته ومستوياته المختلفة					
.11	اعتبار التقويم مصدراً للحصول على مؤشرات واضحة وموثوقة عن أداء الطلبة وفقاً لمعايير محددة بدقة					
.12	ضرورة توخي الدقة والموضوعية في إصدار الأحكام على ضوء نتائج التقويم					
.13	شمولية التقويم لكافة مكونات المحتوى التعليمي المستهدف					
.14	مساهمة التقويم في تدريب الطلاب والمدرسين على آليات التقويم الذاتي للأداء					
.15	اتصاف التقويم بالاستمرارية خلال سير الفصل الدراسي					
.16	اتصاف التقويم بالعدالة والإنسانية في إجراءاته ومواعيده					
.17	تحديث وتطوير إجراءات التقويم في ضوء المستجدات والتطورات الحديثة في مجال التعليم الجامعي .					
.18	اتصاف التقويم بالتعاونية بحيث يشترك في هذه العملية كل من له علاقة بالعملية التعليمية في الجامعة					
.19 ضرورة توفر دليل شامل لمعايير وإجراءات التقويم						
	ثانياً : مؤشرات جودة إعداد الاختبارات النظرية وتطبيقها					
.1	أن تغطي الأسئلة أهداف المقرر الدراسي					
.2	أن يتم صياغة الأسئلة في ضوء الأهمية النسبية لوحدات المقرر الدراسي					
.3	أن تصاغ أسئلة الاختبار بدقة وبوضوح بحيث يكون المطلوب من السؤال واضحاً ومحدداً ودقيقاً					
.4	أن تراعي أسئلة الاختبار التدرج في مستويات صعوبة الأسئلة					
.5	أن يتم تنويع أسئلة الاختبار وفقاً لأنواع الأسئلة المختلفة					
.6	أن يتناسب عدد أسئلة الاختبار مع الزمن المقرر للاختبار					
.7	أن تتمتع أسئلة الاختبار بالقدرتين التشخيصية والتمييزية					
.8	أن تشكل أسئلة الاختبار مواقف تعليمية تعلمية من خلال إتاحة فرص للمتعلم لاكتساب خبرات أو معارف جديدة					
.9	أن يتصف الاختبار بالثبات					
.10	يتم ترتيب أسئلة الاختبار وفق تتابع درجة صعوبتها مع مراعاة المحتوى والأهداف					
.11	ضرورة احتواء الاختبار على تعليمات واضحة ومحددة					
.12	ضبط إجراءات تطبيق الاختبار بشكل سليم					

.13	توفير مناخات فيزيقية ونفسية مناسبة لتقديم الاختبار					
.14	يتم تصحيح إجابات الطلاب وفقاً لإجابة نموذجية محددة					
.15 يتم تقديم تغذية راجعة للطلاب في ضوء أدائهم على الاختبار ضمن سقف زمني معقول						
	ثالثاً : مؤشرات جودة إعداد الاختبارات العملية وتطبيقها					
.1	تحديد الأهداف الرئيسة للاختبار العملي يتم في ضوئها صياغة أسئلة الاختبار					
.2	التأكد من أن المهام المطلوب تنفيذها من قبل الطلاب سبق لهم التدرب عليها					
.3	أن يتناسب نوع المهمات المطلوب تنفيذها مع الزمن المحدد للاختبار					
.4	ضرورة توظيف الأنواع المختلفة من الاختبارات العملية					
.5	يتم تحديد خطوات ومراحل الأداء مسبقاً للاستناد عليها في تقدير علامات إنجاز الطلاب					
.6	تهيئة الأماكن المناسبة (مختبرات ، مشاغل ، قاعات ...) لتنفيذ الاختبار مسبقاً من الناحيتين الفنية والإدارية					
.7	توفير أجواء (فيزيقية) ونفسية مريحة لإجراء الاختبار					
.8	ضمان وسائل الأمان في المختبرات والمشاغل التي يتم فيها تقديم الاختبار					
.9	وجود تعليمات واضحة ومحددة لأداء الاختبار					
.10	ضرورة توفير نموذج خاص لأداء الاختبار يوضح فيه المتعلم الإجراءات والخطوات والنتائج					
.11	ضمان الملاحظة المباشرة والمتابعة لأداء الطلبة أثناء أداء المهام من خلال قائمة رصد					
.12	أن تشكل انجازات الطلبة مؤشرات حقيقية عن مستويات أدائهم على الاختبار العملي					
.13	ضرورة وضع نماذج متكافئة من أسئلة الاختبارات العملية بحيث لا تتكرر المهام المطلوب تنفيذها من قبل الطلاب					
.14	ضرورة الأخذ بعين الاعتبار ملاحظات وتعليقات الطلبة على أسئلة الاختبار أثناء تنفيذه					
.15	أن تكون المهام المطلوب تنفيذها من الطلاب تراعي معايير السرعة والدقة والإتقان					
.16	أن تكون المهام والأنشطة المطلوب تنفيذها من قبل الطلاب ذات أهمية في مستقبلهم المهني					
.17	ينبغي أن يتصف تقدير علامات الطلاب على الأداء بالموضوعية والعدالة وفقاً لمعايير محددة					

Braekout Session (6)

Teacher-Science Partnership

Dr. Rola JadAllah. Arab American American Jenin

Abstract

Currently, traditional science teaching is ineffective in preparing students adequately for life´s complexity in a science and technology-based society. Increasing teachers´ professional knowledge and empowering contextual learning environments for students seem to be key factors for improvement.
We propose a systemic approach. We will start by building a partnership between teachers and scientists and integrate both teachers and students in authentic research environments. For this purpose we have activated a well-established network of research institutes all over the West Bank. Target groups are science teachers and their students in secondary schools. Teaching and learning activities are agreed upon in a bottom-up approach focused on improving teachers´ abilities to use external learning as a tool for development, on student learning and on scientists abilities to communicate with the public.
Outputs will be modules for in-service and pre-service teacher training that could be integrated into the various national education systems, based on best practice. Work is organized as an iterative ongoing process for three years. Learning processes and outcomes are analyzed by qualitative and quantitative means.

Overall Aim and Specific Objectives

The overall aim is to identify the needs of science teachers to prepare them for teaching authentic science according to national and local conditions. Specifically, we devise bottom-up approaches and identify evidence-based best practice for integrating teacher development, student learning, and school development into innovative project work with research institutions. Improve students' learning by involving them in practical tasks in authentic research environments. We improve the teaching methodology of teachers, design innovative learning environments and integrate external learning into schooling on a regular basis.

Innovation

The project is an innovative systemic approach to teaching and learning of science and teacher professional development. It is focused on improving teachers´ abilities to use authentic external learning as a tool for development, improving students´ individual learning, and improving scientists´ abilities to communicate with the public. It will be organized as a professional partnership between teacher education, science research and schools, starting bottom-up with teachers´ and students´ needs.
This project will provide highly complementary means to respond to the training needs arising in the field when teachers start partnership projects. By getting involved in a network of schools and science institutions, teachers and students will be able to recognize the various ways of social perspective taking with respect to scientific research. Teachers and students participate actively with researchers in the process of personal decision making with respect to the questions: What are we to do in order to deal with this scientific problem? How do we communicate our results?

Pedagogical and Didactic approaches

Teaching and learning will be organized along common guide lines for lifelong learning

• Contextual (in touch with the real world, particularly sustainability issues)
• Holistic (relating to the learning needs of the whole person and the group)
• Multi- and transdisciplinary (emphasizing new territory between the disciplines)
• Empowering (an engaged and participatory process)
• Innovative (drawing inspiration from new thinking and practice in a variety of fields including the educational field).
Direct involvement in research laboratories will be the foundation of every project and cannot be substituted

by just a visit of a researcher coming to school to talk about science.

Target groups and Expected Impact

Target groups are science teachers (in-service; pre-service), students, and scientists.
The benefits for teachers will be to:

• Increase the relevance and quality of science teaching by integrating authentic learning at research institutions. Learn more about research processes and scientific methods, access original research data, update factual knowledge and put more evidence in the links between syllabus and societal issues. Gain access to experiments and demonstrations that would not have been possible in the classroom. Bring "fresh air" to the classroom; in that, for the students, scientists have a different status than the usual teacher. Increase the students' motivation in science classes and add life to the dry theory of textbooks.

• Fulfill new curriculum requirements (e.g. transdisciplinarity, project work) and gain experience in interdisciplinary group work with other teachers. Through European cooperation, learn from teachers from other countries and encourage pupils to learn foreign languages in the frame of real communication situations.

Benefits for students will be to:

• Discover and better understand scientific research, its methods and its results by doing concrete project work devoted to the problem of global climate change. Experience science learning at school, by acting in the society, and sharing the results of school project work with a wider public.

Benefits for scientists will be to:

• Improve communication skills related to a specific target audience (here young people) with the help of teachers; Learn from the pupils' spontaneity to identify the key questions for normal people. Support a process in which young people will not be only beneficiaries of this exchange.

Ways of Viewing 'the Problem'

Up until the 1970s, systematic underachievement by any particular group would almost certainly have been interpreted within a 'cultural deficit' framework (McKinley 2000). In this view, the underachieving students would be seen as lacking something – Ability, motivation, and/or help at home might all have been held to account. In recent years, a shift of our understanding to accommodate socio-cultural views of school and of learning has moved the focus to include factors such as how students of different groups actually experience their school learning (Rogoff 1990). At the same time, developments in cultural psychology have demonstrated the role of local culture in framing views of the world whose implicit assumptions may be at odds with those of the dominant, more global, knowledge culture (Cole 1996). Within this wider framework, the manner in which culturally-different groups and individuals interact and relate to each other has become an important question to be addressed (Bishop & Glynn 1999; McKinley 2000).

These shifts in understanding about where 'the problem' lies have important implications for teachers' work. But exactly how more traditional ways of teaching should be changed is far from clear. One type of response has been to assume that students prefer to work in co-operative groups. This has been criticized as an oversimplification – our students are as diverse in their learning preferences as any other big group, and in any case all students need to learn to work in a range of different settings (Hill & Hawk 2000; McKinley 2000).

Another type of response has been to suggest 'discovery learning. Bishop (1999) points out that when the teacher uses an inductive 'discovery' questioning style the students are always working in the unknown and the teachers in the known. He suggests that this can widen the already existing discrepancies in power relationships between students and their teachers. (Discovery learning is also critiqued by science educators on the grounds that it gives very misleading messages about the nature of science – see for example Hipkins (2002) and Hodson (1988; Hodson 1998).

Is teaching Science in Context an Adequate Solution?

Science in schools curricula emphasizes the importance of helping all students achieve in their science learning. The use of everyday contexts as relevance to students' lives is suggested as one way that teacher could help to ensure success for all students. This 'solution' is not, quite as simple as it may seem. In the first place, many teachers do not appear to have the relevant knowledge and/or resources to address this feature of the curriculum – at least in terms of raising achievement for diverse groups of students. Even if the link is made between teaching in context and 'science for all', there are some tricky teaching and learning issues to resolve. Some teachers may not feel comfortable about using this strategy, especially if they are well practiced at traditional teaching that emphasizes science 'facts'. At the other extreme, the science itself could get 'lost' in teaching that places more emphasis on the context (Hipkins & Arcus 1997).

Facing up to 'Nature of Science' Challenges

Meeting the teaching challenge sketched above would require teachers to take more account of cultural differences between the world-views of their students and world-view(s) of science as a specific cultural process for knowledge building. They can only do this from a basis of clear and 'expert' nature of science (NOS) understandings. However a consistent finding of science education research internationally is that most teachers have 'naïve' NOS views that are not easy to change (see for example Gallagher 1991; Abd-El-Khalick & Lederman 2000a). Clearly differentiating between science and science *education* could be the starting point that frees teachers to rethink their curriculum purposes and their NOS philosophies. Since critical discussion of these differences is increasing, (Gilbert 2001; Chinn & Malhotra 2002) this is one promising avenue for professional development.

Once teachers know how their students' world-views might differ from science worldview(s), they can begin to act as "anthropological guides"(Cobern & Aikenhead 1998), helping their students see these differences too. 'Border crossings' is a term that has been used to describe conscious movement from one way of framing knowledge to another (Aikenhead 1996). There are however, several very difficult sets of issues to be resolved before teachers could be expected to feel confident about doing this well. First, 'border crossings' for students can only happen if teachers feel confident they can cross such borders themselves. For this to happen, a sound NOS understanding is a *necessary* first step, but it is unlikely to be a *sufficient* one (Lederman 1999; Abd-El-Khalick & Lederman 2000b). As Abd-El-Khalick and Lederman point out, teachers also need what they call 'NOS PCK' (pedagogical content knowledge). This requires them to be confident in their fund of stories, activities and ideas for exploring NOS in the classroom.

Which Way Should We Go Now?

The following three models for interrelating science and indigenous knowledge were proposed and debated in a special issue of *Science Education* in January 2001. Key features of each have been summarized and then illustrated with variations on a scenario of our invention.

The cross-cultural perspective

Snively and Corsiglia (2001) argue that science in the school curriculum should be broadened

to include traditional ecological knowledge (TEK). They acknowledge that TEK has some features that are ruled out of Western science – for example, spirituality. However, they believe that an accommodation between the best of Western science and the best of TEK can lead to more effective solutions for contemporary problems and so students should be encouraged to draw on both.

What this might look like in practice

Students could be undertaking an inquiry into a water pollution problem in their local area. From Western science they could learn about nutrient over-enrichment of water (eutrophication) and its effect on living

things in the waterway. They would probably learn how to identify a variety of indicative species, and various ways of measuring aspects of water pollution. Advantages of this model are that it frames knowledge in an holistic manner, as most of us do in our everyday lives. It widens frames of reference on which to draw when discussing socioscientific issues, as advocated by many who work in 'science and society' policy settings (Irwin 2001). Knowledge from other cultural systems can be respected and valued. Disadvantages are that this strategy is open to relativist critique, and students are unlikely to increase their NOS understandings because the 'border crossings' are not clearly sign-posted.

The multicultural perspective

Stanley and Brickhouse (2001) argue for debates about NOS itself (which they term "gray areas") to be a focus of study. In this approach, the content known as TEK would serve as counterpoint for exploring and critiquing the cultural features of Western science. Students would learn that there are different ways to think about what science is and how it works. For these science educators, debate about the *contested nature of knowledge* is a key feature of a multicultural education. In the example that follows, students could learn that philosophers of Western science debate whether or not it is actually as value free as some scientists claim (Allchin 1998).

What this might look like in practice

Students could be undertaking an inquiry into a water pollution problem in their local area. From Western science they could learn about nutrient over-enrichment of water (eutrophication) and its effect on living things in the waterway. They would probably learn how to identify a variety of indicative species, and various ways of measuring aspects of water pollution. However they would also learn about the way in which, by framing the various aspects separately in order to make them measurable, Western science may lose the complexity of a more holistic indigenous approach. In this case the border crossings are firmly in view. Science is emphasised as a distinctive cultural system. However the issue of appropriation of other cultural viewpoints to serve science learning ends, as has been argued by Ninnes and Burnett (2001) for textbook contexts, again raises its head.

The pluralist perspective

Cobern and Loving (2001) take the opposite view to Stanley and Brickhouse. They argue that

it is critically important to help students learn about the features of science about which Philosophers of science are in broad agreement. They define these features and call them

collectively the "Standard Account" of Western science (pp. 57–61). They say that unless students can learn about these features they are left with no reliable basis from which to judge the validity of competing knowledge claims. We have already noted that this position is open to criticism as allowing an 'anything goes' view of science to emerge (Matthews 1995). Cobern and Loving (2001) make a second point that science can be seen as the 'gatekeeper' to positions of power and prestige in Western society. They say that angling for the inclusion of traditional knowledge's within what 'counts' as science simply accedes to the existing 'power game'. They would rather see other world-views and knowledge's kept distinctly separate from science - taught and valued on their own knowledge-building terms (which makes an unapologetic space for inclusion of spirituality, for example).

What this might look like in practice

Students could be undertaking an inquiry into a water pollution problem in their local area. They would develop a detailed description of the evidence that suggests the water is indeed polluted, drawing on measurable aspects of Western science (perhaps turbidity, biological oxygen demand, indicative species, etc). They would also learn how what is to be measured is selected by reference to existing theory about the causes of water pollution. They would thus be explicitly taught about the manner in which science

description and science theory interact in any process of inquiry. They would represent their learning through an agreed report format that explicitly modeled the manner in which science findings are shaped and reported for peer scrutiny.

This model potentially deals with the power issue by introducing knowledge systems on their

own terms. In a discussion of the challenges inherent in schooling for more democratic societies whilst still valuing diversity, Schutz (2001) imagines schools as places that "encompass a wide range of different discursive spaces that are not equally open to all. A myriad of different teachers might teach in and advise in these different spaces, ensuing safety, and 'rigor' within diversity". While the use of very different 'discursive spaces' could help overcome the problem of science teachers not feeling comfortable about their ability to discuss local worldviews, there is a danger that they could opt out of any NOS discussion if they are not part of the discussion of other world-views. Ideally, if two teachers are involved, both need to be present to hear and respond respectfully to the various parts of the debate. As Barnhardt and Kawagley (1998) point out, it is the attention to relationships, and the explicit recognition of interconnectedness that links this type of teaching model to cutting edge developments in science itself.

All of these models have been accepted or rejected, in whole or in part, by various science educators. However the least criticized would appear to be the pluralist approach. If we are serious about raising science achievement for our students, and increasing the participation in science related careers, the sooner we begin to debate the relevant NOS and curriculum issues the better.

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Braekout Session (7)

Assessment of the Practical Training Requirement in Engineering Education in Palestinian Universities

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Abstract:

Practical internship is a mandatory course requirement in all Engineering undergraduate programs in all Engineering disciplines and in all Palestinian universities and is congruent with international norms. In such courses, students are expected to spend a period of eight to ten weeks in a recognized engineering firm in order to achieve essential hands-on skills in their respective fields of study. Upon completion of this requirement students are required to present a comprehensive report detailing the extent of the practical experience attained in design work or in the field. Vernacular reasons dictate that the bulk of Palestinian students implement this requirement in local engineering firms. The following study is conducted to scrutinize the relevance of this requirement in fulfilling the objective of the requirement under the prevailing conditions of limited adequate engineering facilities taking into serious consideration the perpetually growing student demand.

The following study shows that, despite the importance of this course as a key requirment for producing well qualified and trained engineering graduates, the actual practice of implementation needs to be constantly scrutinized. The hurdles facing better reinforcement of this obligatory requirement are discussed and suggested solutions are subsequently recommended. The study concludes that unless the training period is invested at a venue providing trainees with adequate exposure to the cutting edge of technology and to state of the art engineering then

the entire exercise would be one of futility as it would be counter productive. The present experience of the ubiquitous students exchange program for the purpose of training through the Union Arab Universities or through the International Association for the Exchange of Students for Technical Experience (IAESTE) is thoroughly discussed. In the Palestinian context transfer of knowledge is a well desired prerogative in the long overdue state building endeavor.

Introduction:

Engineering education in Palestinian universities is playing a substantial role in fulfilling the dire need for skilled and well-trained engineers highly required to meet the intensified development and reconstruction efforts especially in infrastructure, construction and industry sectors which are corner stones in the state building interprise.

The initiation of engineering education in the Palestinian Territories happened in 1978 by the simultaneous establishment of 5 engineering departments in the West Bank; two of which are at An-Najah National University and the other three at Bir Zeit University. Presently there are 33 engineering undergraduate programs in 7 univesities among the 13 universities that are spread in the West Bank and the Gaza Strip. The Ministry of Education and Higher Education regulates and monitors the quality of education in these universities through the newly established Accreditation and Quality Assurance Council (AQAC).

The total area of the Palestinian Territories [the West Bank and Gaza Strip combined] is 5950 square kilometers, with a population that exceed four million in 2010. The number of registered engineers in the Palestinian Territories climbed to a whopping 14,000 in the year 2010. The number of engineering graduates from Palestinian universities increased from around 250 graduates in 1999 to more than 1500 graduates in 2009. The colleges of engineering in Palestinian universities award a B.Sc. degree in 12 different disciplines. All local universities follow the semester model, where the students in general are required to

complete 160 to175 credit hours for graduation, which extend over a five year period. Practical internship is a mandatory course requirement in any engineering undergraduate program in all Palestinian universities. This course is a zero credit course in most of these programs. However in some of the programs the course carries 3 to 6 credit hours. In such courses students are expected to spend a period of 6 to 8 weeks in a recognized engineering firm in order to achieve essential hands-on skills in their respective fields of study in order to meet ABET requirments. The Engineering Accreditation Comission, ABET, requires that engineering programs must demonstrate that their students have attained the following outcome:

1. A recognition of the need for, and an ability to engage in life long learning
2. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Research methodology:

For the assessment of the effect of the practical training internship course in the engineering programs in the Palestinian universities, a special questionnaire was designed to explore the opinions of a sample of students at the fourth or the fifth year level and who completed the internship course requirement.

The questionnaire was designed to include a general information section, followed by a section in which the student was requested to mark a grade on a scale of 1 to 10 expressing the extent to which the internship course met expectations regarding the following aspects:

1. Supplementary knowledge.
2. Preparation for the first job.
3. Technical writing.
4. Administrative skills.
5. Detailed drawing.
6. Motivation for starting a private interpreneurship.
7. Computer skills.
8. Familiarity with used codes .
9. Development of interpersonal skills
10. Building analytical capacity.

A sample of 250 students covered the universities in West Bank only, because students in the Islamic University in Gaza did not have the chance to be practically trained as required for the last three years because of the siege of Gaza Strip and due to the lack of training opportunities. The internship course was implemented in an extra ordinary form. The sample covered all engineering discplines in the Palestinian universities. The supervisors who administer the implementation of the internship course in the schools of engineering were interviewed in order to examine their position regarding the current practice and their evaluation of the obstacles limiting the reaping of the potential benefits of the internship course.

Status of Practical Training in the Palestinian Universities

The Engineering study programs in the Palestinian universities are essentially not diverse. They generally tend to prepare their students for local engineering vernacular practice which magnanimously speaking leaves a lot to be desired. Although the programs are not identical, they emanate from the same guiding principles. Research versatilities are absent due to obvious reasons that include but are not limited to lack of resources, financial and otherwise. Attracting seasoned faculty members is a futile exercise under the prevailing faculty benefit packages. Most serving faculty members are a product of a self-sustaining faculty creation program which is self-limiting when the objective is to create a remarkable academic climate conducive to being at the cutting edge and able to match other regional academic institutions of excellence.

Bir Zeit University has five undergraduate programs which essentially require 160 credit hours for graduation.

The six-week internship, although obligatory, does not carry any credit hours. At Al-Quds University this graduation requirement is nearly the same save for the duration which is quoted in work hours rather than in weeks. At An-Najah University which has the largest engineering student population with 10 undergraduate engineering programs, students are required to complete 165 credit hours for graduation. The internship requirement carries three credit hours and spans an eight week period in a recognized engineering firm.

In the Islamic University of Gaza the total credit requirement for the first engineering degree stands at about 170. Internship is obligatory but carries no credit hours save for the Architectural study program where the credit number for the internship is two. The rest of the Palestinian Universities follow an almost identical course in defining the internship requirement. Table 1 provides a summary of the internship requirement in the various Palestinian universities.

University	**Department**	**Total credit hours**	**Internship course**	**Credittttttt hours**	**Period**
An -Najah National University	Civil Eng	166	61391	3	8 wks
University	Architectural Eng	170	62400	3	8 wks
	Electrical Eng	165	63460	3	8 wks
	Chemical Eng	164	64390	3	8 wks
	Industrial Eng	163	65590	3	8 wks
	Computer Eng	173	66304	3	8 wks
	Mechanical Eng	160	67400	3	8 wks
	Building Eng	166	68400	3	8 wks
	Mechatronics Eng	163	67484	3	8 wks
	Communication Eng	165	69404	3	8 wks
Bir Zeit University	Mechatronics Eng	160	ENMC 401	0	6 wks
	Electrical Eng	160	ENEE 401	0	6 wks
	Civil Eng	160	ENCE 401	0	6 wks
	Architectural Eng	164	ENAR 401	0	6 wks
	Mechanical Eng	160	ENME 401	0	6 wks
The Arab American University/ Jenin	Telecom Eng	163	11071431	6	3 months wwksMonths
Islamic University Gaza	Civil Eng	172	ECIV 4000	0	8 wks
	Architectural Eng	174	EARC 4216	2	
	Electrical Eng	170	EELE 4000	0	60 hrs
	Computer Eng	170	ECOM 5000	0	60 hrs
	Industrial Eng	172	EIND 4000	0	60 hrs
Palestine Polytechnic Polytechnic PPPolytyechnic University / Hepron	Mechanical Eng	163	ME391+ME491 3913391+ME491	0	180+180 hrs

Polytechnic University	Civil & Building Architectural Eng	163	CE 391+CE 491	0	180+180 hrs
Univesity	Electrical Computer	163	EE391+EE491	0	180+180 hrs
Palestine Technical University (Kadoorie)	Electrical Eng	170	No Course	0	400 hrs
University	Industrial Eng Automation	163	No Course	0	8 wks
	Computer Eng	164	No Course	0	8 wks
	Mechatronics Eng	163	No Course		8 wks
	Communication Eng & Technology	164	No Course	0	8 wks
AL-Quds University	Electronic Eng	162	No Course	0	120 hrs
	Computer Eng	166	No Course	0	120 hrs
	Materials Eng	163	No Course	0	120 hrs

Table 1. The Internship Course Requirements in The Palestinian Universities

Analysis of Results:

The student responses are presented in bar charts shown in the figures below. The graphs represent the degree of student satisfaction in regard to the training experience they had while striving to satisfy an important university graduation requirement.

Before in depth scrutiny of the results portrayed in the bar charts it is worth keeping in perspective the fact that students by and large have no established datum to compare their training exercise with. The choices made in the questionnaire were perhaps whimsical par excellence and based on little or no solid rational. Figure 1 indicates that trainees by and large expressed satisfaction. In Figure 2 the degree of satisfaction in the various disciplines is presented. While most disciplines hover around the 5.5 mark, the development of interpersonal skills stood out on the positive side while drafting engineering details stood out on the negative side. This is quite understandable; students are having their initial exposure to the business world with whatever degree of excitement this entails while on the other hand they do not get much exposure to hands-on production experience. At An-Najah University students, Figure 4, point negatively to technical writing. This is perhaps linked to the prevalent moderate English language skills. Furthermore, this may point towards the general abilities of the training venues in the general vicinity of the Palestinian Territories. This conclusion gets yet further reinforced when compared to the similar results of Bir Zeit University and Palestine Technical University (Khadoury). At the Palestine Polytechnic University in Hebron, students were clearly dissatisfied with the computer skills they expected to acquire during their training exercise, Figure 6. Regarding the types of firms that provided training opportunites, Figure 9 shows that such opportunities were uniformly distributed among all potential training providers; nongovernment organaizations having a slight edge. On the other hand Figure 8 shows that a small fraction of engineering students invested time in a factory setting. This is expected as the Palestinian Territories are not known for their industrial capabilities. This area is best described as a market for the region. For obvious reasons the Israeli products overwhelm the Palestinian market.

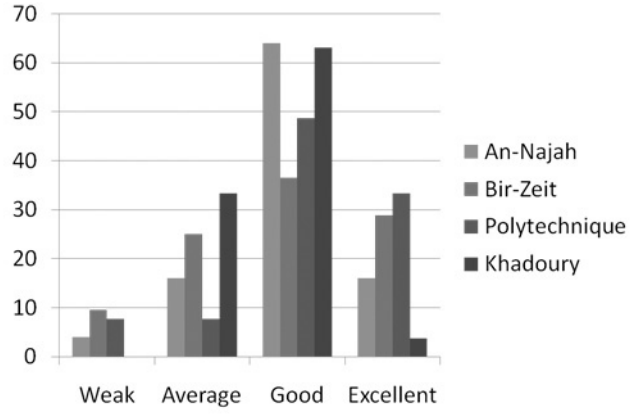

Figure 1. General Evaluation of Students in The Palestinian Universities For Internship Course

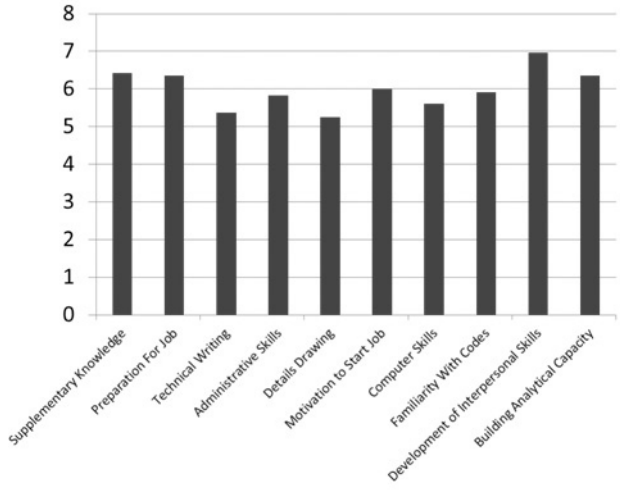

Figure 2. Degree of Satisfaction of Students on various indicators at Palestinian universities

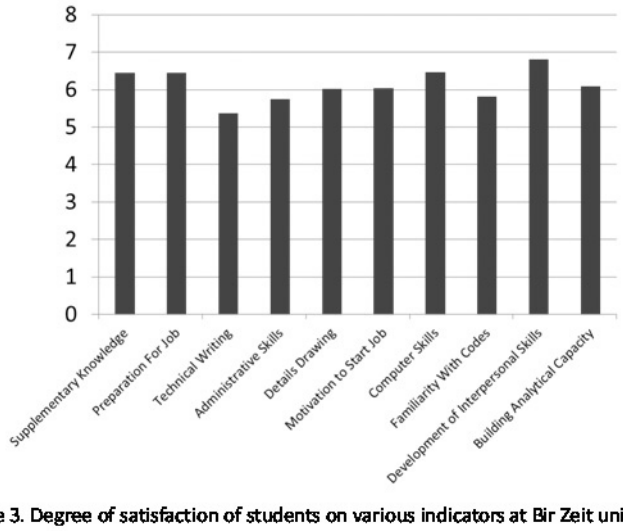

Figure 3. Degree of satisfaction of students on various indicators at Bir Zeit university

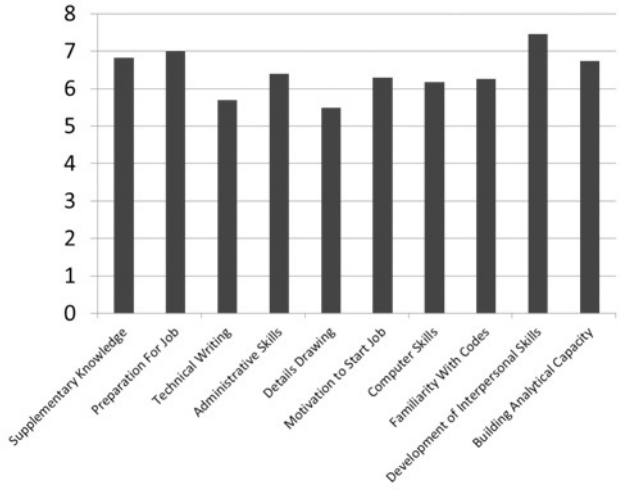

Figure 4. Degree of satisfaction of students on various indicators at An-Najah university

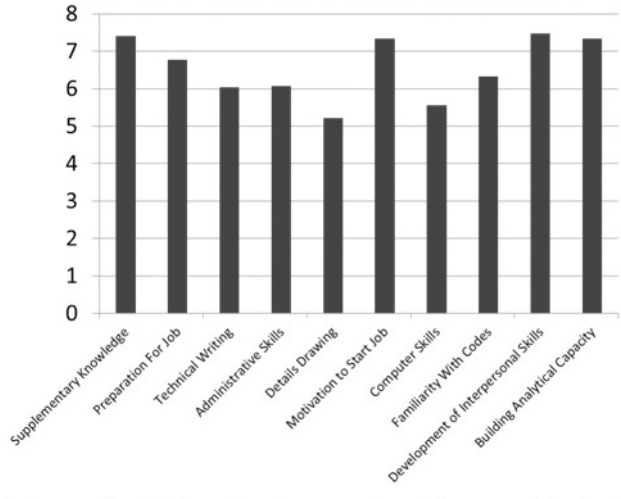

Figure 5. Degree of satisfaction of students on various indicators at Palestine Technical university (Khadoury)

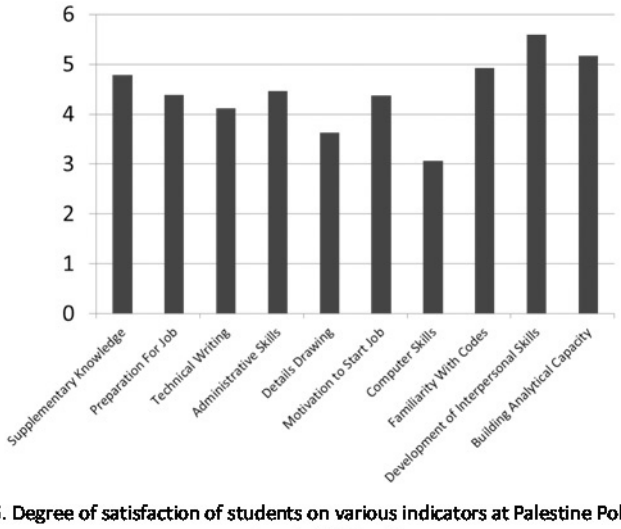

Figure 6. Degree of satisfaction of students on various indicators at Palestine Polytechnic university (Hebron)

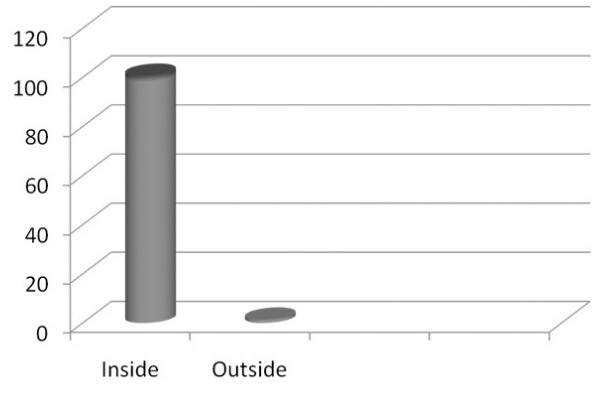

Figure 7. Percentage of Students Trained Outside Palestine in Comparison with Students Trained Inside Palestine

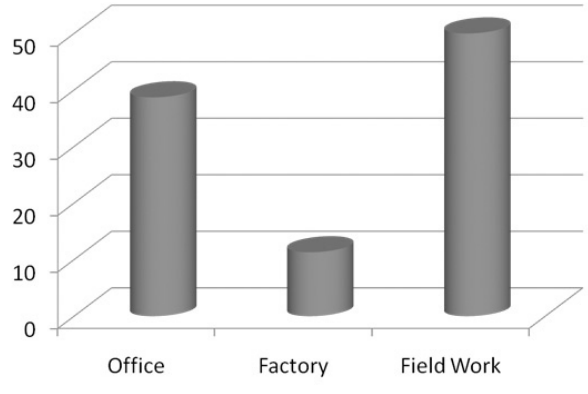

Figure 8. Percentage of Distribution of Training Period Among Different Fields

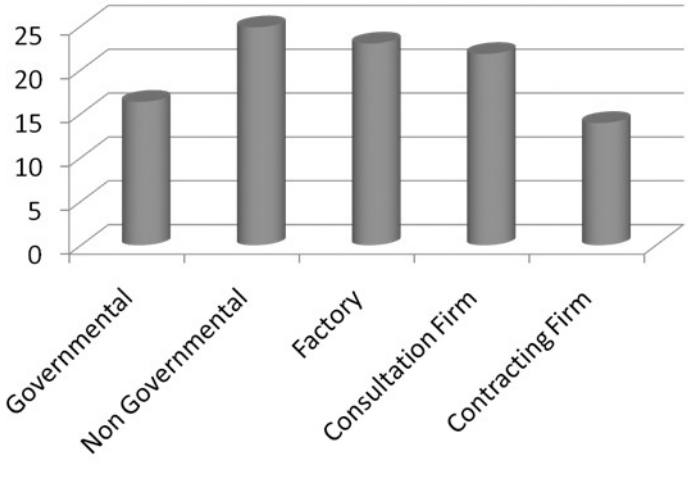

Figure 9. Percentage of Distribution of Internship in Different Types of Business

Conclusion:

The Palestinian Territories are on the path of becoming an independent state and under such conditions technical expertise that matches international standards is the order of the day. The extremely rapid development of technology is an added dimension that must be kept in perspective. Local technical training is no more than a rehash of an already expired technology. It fails to bring into the country a seriously needed added knowledge. The local market is just a reflection of the prevailing technical experience. Beyond any shadow of doubt, local training does not contribute effectively towards widening the horizon of the young university graduates and, as such, it does not help expand the local industry sector capabilities. In this direction the local industry needs to import and indeginize state –of-the-art technical knowledge. Student training is one effective mechanism in the dynamics of technical experience exchange. In the discourse one should not fail to clearly note that future leadership is what is at stake. The results of the questionnaire by and large show a seemingly satisfying outcome. However it is not to be taken for granted as none of the students marked his or her choice according to any established criteria. The measured student satisfaction in this case is more of a concern than a comforting outcome.

International training possibilities through IAESTE are up for grabs. The onus for directing senior students towards such potential training venues rests squarely upon the local administrative body of the Palestinian universities at all levels with particular emphasis on the local engineering schools' administration. Perhaps an ad hoc financial aid program for student support may be solicited. It is of paramount importance to accept the fact that study programs remain self-limiting unless they bring the student populace towards exposure to the real world of technology. To perpetually rely on text book type problems and solutions is self-defeating; it is a recipe for losing a sense of direction.

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Braekout Session (8)

Innovative Teaching: Using Different Approaches and Experiences in Teaching a Course at Birzeit University

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Abstract

During the last academic semester at Birzeit University, I taught a course for students of Master Program in Business Administration (MBA). Focus of the course which entitled "International Marketing" was on a qualitative shift toward thinking and problems solving and on connecting to community needs and priorities through practical global marketing projects.
The teaching approach emphasized development of analytical skills, problems identification then searching for solutions for topics in global marketing.
The discussion centered on connecting topics in a logical manner through understanding the dynamic of global marketing as presented in the textbook and through practical implementation of global marketing concepts in the form of a global marketing project that stems from community needs. Conducting the project comprised building spirit of working in a team and effective presentation skills.

These objectives were achieved through three means: 1) Using the textbook to understand the theoretical background of global marketing. 2) Emphasizing theoretical concepts of global marketing, where students select a topic, search, summarize and discuss published research papers or articles from newspapers and magazines such as the New York Times, Wall Street Journal, and The Economist. 3) Implementing projects reflecting what the students understand and discussed in the class.
Overall, the course was delivered in a manner emphasizing understanding rather than memorizing, utilizing several years of international experience, and working in academia and in global industry.
In teaching the course the teacher role resembled more of a facilitator, where students took the time to search, present, discuss and interact with each other. The course could serve as a model where students take the lead in the class, develop their analytical skills through selecting and discussing research articles and implement projects that target community needs and students potential careers.

Introduction

Nowadays, where more corporations are going global, in business, in trade, in media, or in healthcare, the subject of global marketing is becoming increasingly essential in order for these companies to succeed, and to expand in an intense competitive environment.

The fast development in telecommunications and technology has encouraged many companies to enter the global business and marketing. For students of Master of Business Administration (MBA), studying " Global Marketing" is an asset for future career development.

By engaging in global business, analytical approach to problem identification, and then searching for solutions would be essential for competition and development. This could be achieved through, not only learning from the "textbook", similar to the one offered in this course (1) as usually and traditionally practiced, but through searching and discussing the latest published research in these areas, through

active and informal discussions between students which enhances thinking and dialogue, and through connecting to local community via exploring its needs and potential areas for future growth.

Course

The course is part of the MBA program curriculum at Birzeit University. It is an elective course opened for graduate students from other fields such as economy, finance and other related areas. To my knowledge, this is the first time this course is being offered to graduate students.

Students

There were a total of 13 graduate students enrolled in the MBA program and other graduate programs. They have wide diverse undergraduate backgrounds such as finance, political science, pharmacy, biology, information technology, engineering, economy, and business administration. They obtained BA or BS degrees from either BZU, local universities or from abroad. In addition, they have various working experiences. They are employed at Birzeit University, at local companies, in private sector and some have their own business. Since most of the students in the course were part-timers and employed, educating them had a special challenge that required innovative approach to be successful (2) .

Objectives

The objective of the course was to enable the students to cope with global marketing issues and concepts through building up a logical global marketing plan, using the textbook, published research articles on latest development in the area of global marketing and through implementing a research project reflecting local business availability and future needs (3).
The other objective was to enhance students' ability to form and lead teams and to improve communication and presentation skills.

Challenges

Among the challenges we faced at the beginning of teaching the course was how to shift from a classical or a traditional approach of delivering the information, to the manner of understanding rather than memorizing and how to develop a creative approach for problem identification and solving (4). The second challenge was how to emphasize the idea of active and informal participation and effective communications in the class and how to get students engaged in informal presentation and discussion. This included changing the traditional role of the teacher as the main speaker in the class to the role of a facilitator where the main speakers are the students.

Approach

The main task was how to create an informal atmosphere and how to connect with students, in order to achieve the above mentioned objectives. The approach emphasized the concept of a mutual participation in a way to get students engaged and not to get bored (The class was given at 3:00 PM where students arrived directly from work).
Using my working experience in different settings (academia and industry), including managing a group of scientists in global corporations, and working at the same time with two different global teams (marketing and science) at a global company has facilitated the approach.
In addition, using my international experience to connect theories and concepts by offering practical examples helped motivate and enhance the analytical approach, hence creating an active discussion and participation.
To achieve the above objectives, we used three main approaches:

1) **Textbook:** We selected a text book that addresses the main concepts and the latest development in the area of "Global marketing". Chosen Textbook organized chapters through building a logical connection of concepts and ideas in a way that emphasize understanding rather than memorizing. In addition, this textbook contained cases reflecting real life examples

of practical implementation of what is described in theories in the textbook.

2) **Articles/Papers/Cases:** At the end of each cycle or concept of global marketing (chapter), students read, summarized and discussed cases from the textbook. The cases reflect examples of companies or issues of global marketing topics. All students were supposed to read the cases and selected individuals informally presented the cases and followed by discussions.

   In addition, students selected specific topics in global marketing, searched for published articles, read and analyzed the findings, then summarized the articles during the class. This broadened their ability to explore research articles and at the same time stimulated their analytical thinking of identifying and addressing problems and using technological tools (5), in order to find solutions or answers to selected topics or problems.

3) **Project:** The project comprised a comprehensive document for marketing a product made or produced by a Palestinian company/firm, in an international market. The project involved communicating, visiting, discussing and formulating the idea or the concept with the company itself.
   Students used what they learned in the text to implement a practical logical project. They presented outcomes of the project in the form of a report emphasizing team work and joined efforts and in the form of in-class presentation, emphasizing individual communication and presentation skills, including connecting with audiences.

Evaluation

In addition to the formal evaluation usually carried out electronically through BZU Intranet, students informally evaluated the course. The informal atmosphere they used during the course has helped in conducting an effective and opened evaluation. This was important for assessment of the course and the instructor and for future improvements or modifications. The evaluation included course contents, mechanism of delivery, communication skills, delivery of the information, and degree of extent of participation or discussion in the class.

Recommendations

Several recommendations could be drawn from teaching the course that could be applicable for other graduate courses.

1) Graduate students are looking for a qualitative different course, not for a continuation or an extension of what they learned in undergraduate studies. This applies to all fields of graduate studies.

2) It was obvious that the classical way of teaching; reading from slides or notes, or the traditional manner of memorizing is not the way graduate students are looking for.

3) Most graduate students attend courses in the afternoons (2 or 3 PM). Most of the time, they arrive on campus from work. An interactive approach that helps students effectively engage and participate in the class is essential.

4) Since most students have jobs, they expect the course to connect them with real-life and work related subjects. What they expect is to be offered a practical project that addresses their needs and position them for advanced future careers.

5) Searching for published/recent articles either from professional journals or from international magazines and newspapers will help students find research concepts and to prepare presentations in the form of a published work.

   In addition, since research papers tackle a problem and discuss or propose a solution, this will be an asset for those who intend to continue their studies toward PhD or higher degrees, or for those who are looking for a teaching career.

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Bios for Teaching Excellence Awards Recipients

Bassem Shraydeh is a professor of chemistry at An-Najah University. Professor Shraydeh has over thirty years of service to the field of education in chemistry. One of the subjects he teaches is what his colleague and Chemistry Department Chairman Dr. Samar al-Shakshir calls "the most difficult branch of chemistry"—Quantum Chemistry. After receiving his PhD from the University of Wales/Cardiff in 1980 Dr. Shraydeh mentions having accidentally discovered his teaching abilities at Bethlehem University—and he has not left teaching since. In discussing his love for teaching he notes that he sees his students as very important people he goes to meet for class sessions. Many of his colleagues in the science department at An-Najah University were his former students. He also produced the lab manual that has been used at An-Najah University since 1984. In an interview with him, Dr. Shraydeh demonstrated some of his strategies for linking his chemistry lectures to the real world so that his students can have an easier and more dynamic time understanding the material. In his lesson plans he also includes demonstrations of chemical reactions and, while they are conducting experiments he encourages his students to look for new chemical research ideas.

Ahmad Atawneh began teaching in 1983 after earning his MA at the University of Wales. In 1991 after completing his PhD he became a professor of language and linguistics at Hebron University, where he continues to teach in the English Department. His philosophy as a teacher was affected by his own professors when he was a student. He recalls that his most inspiring teachers were those who were caring and appreciative towards their students. Dr. Atawneh makes his private home and office libraries available to his students for their research. The care and attention that Dr. Atawneh gives to his students is apparent in his evaluation marks—his students continuously rank him high enough to surpass the university's average rankings in almost all areas. In his syllabi Dr. Atawneh emphasizes two things: linguistics education as a means of acquiring critical thinking and analytical skills and writing research papers as a form of professional development for his students. This demonstrates his longer-term vision for his students. He has demonstrated excellence in teaching as both an administrator and as a teacher. He supervised the first symposium on research in applied linguistics in 2009; he has travelled with his students on an educational visit to the United States; and he has helped various students obtain scholarships for graduate degrees abroad. In their letters of recommendation Ahmad Atawneh's students emphasized a combination of his qualities that make him an excellent teacher: service to the community, profound knowledge of his field, and a conscientious person.

Sami Al-Jaber is professor of theoretical physics at An-Najah National University in Nablus. In his statement of teaching philosophy Dr. Al-Jaber notes that the most important assets of physics for students are critical thinking and problem solving. In his view, education must serve to develop the thinking of human beings. For this reason Dr. Al-Jaber has an open book exam policy—he encourages understanding and analysis rather than memorization. In his opinion, an excellent teacher possesses three qualities: he knows what he is teaching; he likes his job; and he has the ability to simplify big concepts while allowing his students to think. He makes the analogy that teaching a course requires a road map that a teacher and students can use together to make sense of their journey, much as one needs to navigate through a city like Chicago. His pedagogy was inspired by his graduate professors at Southern Illinois University where he obtained his MA and PhD. The interview committee was enthralled by examples he gave of how he breaks down complex physics into comprehensive and easy to digest information about the physical world around us. Dr. Al-Jaber is also concerned with the humanistic aspect of teaching—that above everything else a teacher is working with humans and that sciences should benefit mankind. In fact, according to his student's letters of recommendation his impact goes well beyond the field of physics or their own critical thinking skills. He has impacted each of them as teachers—they all state that they have adopted his methods of teaching into their own practice.

Samar Mousa is a teacher of physical education and the Director of the Athletics Department at Bethlehem University where she has taught for 24 years. Mrs. Mousa believes that she must transmit theories and concepts which then must be applied into reality. Her mission is to provide her students with the ability to remain healthy and fit, to learn to be competitive while remaining respectful and understanding, and to create in them a sense of team spirit and cooperation. She is driven by the various personal challenges she has had to face as a woman in the field of physical education—first in choosing to study physical education at the University of Jordan after scoring 93% on her Tawjihi, then in working in the male-dominated sphere of physical education where her abilities were questioned. According to her colleagues and her students, she has succeeded tremendously in her position due to her dedication, professionalism, and hard work. This is reflected in her student's evaluations and achievements—many of whom graduated to establish themselves in sports. It is also reflected in her own achievements, as Head of the Palestinian Sports Federation, for example. She sees an excellent teacher as someone who is patient, has a vision, maintains a good personality before her students, cooperates with them, and communicates well. But Mrs. Mousa is also a different kind of teacher—she is a coach of volleyball, football, and tennis. Her commitment to physical education and to empowering women and girls has also lead her to conduct various research projects including obstacles faced by Arab women in the sports field in Arab Countries and how to make coaches better critical thinkers. Her commitment to teaching is such that, when approached by her students about initiating the first Palestinian women's football team Mrs. Mousa not only obliged but also found herself convincing their parents to allow them to join the team and driving them to and from practice every day.

Eeman Salem has been a teacher of geriatric nursing at Al-Quds University for the past five years. She is currently working on earning her PhD in Community Medicine from Hebrew University in Jerusalem. In her short career, Ms. Salem's enthusiasm for teaching is evident in her record for constantly attempting to provide additional opportunities for her students. She has submitted grant applications to create a Communication of Science Disorder masters program and to build a community based teaching, research and service project to bring together students of nursing with their constituency in Palestinian communities. As she teaches geriatric nursing, Ms. Salem often takes her students outside of the classroom and into the nursing centers to learn first-hand and brings in guest lecturers. She emphasizes flexibility above all else in her teaching philosophy and she uses a variety of teaching methods in her courses. She believes that a good teacher is open to assessing her student's learning habits and capabilities as she proceeds with her lessons and can focus on transmitting the knowledge to them in ways that are conducive to their own needs. Her students boast about her ability to move through the semester's lessons in a timely and well organized fashion. Her 4th year nursing students describe her teaching method as "creative, artistic, and talented". As recipient of the Junior Teaching Excellence Award we believe that Ms. Eeman Salem's future as a teacher is promising.

Akram Kharroubi is head of the department of Medical Laboratory Sciences at the Faculty of Health Professions at al-Quds University and Professor of Biochemistry and Endocrinology. He has been teaching since 1994 after obtaining his PhD in Biochemistry at the State University of New York in Buffalo. Dr. Kharroubi's philosophy of teaching in the sciences depends on developing the critical thinking skills of his students that would enable them to deal with the complexity of biochemical problems. He believes that he can help his country by graduating minds that can think. This is how he measures his own success as an educator. He describes an excellent teacher as one who can give students the information and skills to solve a problem until they can think independently. His dedication to teaching is such that, when he found that there are no good textbooks in biochemistry, he decided that he would develop his own course. Currently he is also working on developing a course in biotechnology. But the innovation does not stop there. The courses Dr. Kharroubi is developing are e-learning based rather than classical courses. He describes classical education as passive, whereby students are waiting to receive information from the teacher. E-learning classes are more learner-centered because it requires students to review the course material and prepare assignments ahead of time. His innovative style of improving education also takes place outside of the classroom. This year Dr.

Kharroubi was able to secure the funding needed to upgrade the clinical labs for the medical laboratory sciences department and he even established a masters program in Biochemistry and Molecular Biology in 1996. Dr. Kharroubi also takes research very seriously—he believes that you cannot call yourself a biochemist if you are not a researcher. He has also wants to strengthen the research skills of his students by encouraging undergraduate research and providing his colleagues with the tools and skills that they need to evaluate their students' work. His students and his colleagues alike wrote extensively in recognition of Dr. Kharroubi's contributions to the Faculty of Health Professions in terms of research and learner-centered education.

Nadia Najab is a professor in the Department of Philosophy and Cultural Studies at Birzeit University, where she came to teach after completing her PhD in Middle East Studies at the University of Exeter in the United Kingdom. Her courses at Birzeit include Women in Contemporary Arab Society, Modern and Contemporary European Civilization, and Psychology of Women. As her interests lie in women's issues, Dr. Najab's current research is on the psychology of women in polygamous marriages. Her courses therefore produce some controversy and plenty of discussion. She talks about the challenges of teaching such issues as well as how she overcomes those challenges. In her psychology of the personality class Dr. Najab assigned the book the Yacoubian Building as a means of studying and analyzing various personality traits. In attempting to apply philosophical theories and concepts to the real world Dr. Najab invites guest speakers to her classes and applies interactive lessons like role playing and games. She stresses that one of her main goals is to encourage her students to accept different perceptions of the same situation, thereby promoting tolerance of various opinions and outlooks. Similarly when she taught the psychology of people with special needs she worked to produce an understanding of the difficulties faced by people with special needs. Two of her students then decided to continue in the field of special education. Dr. Najab has just completed a short term fellowship with Georgetown University's Center for Contemporary Arab Studies where she continued her research, adapted methods of improving her teaching methodology, and worked on upgrading her syllabi.