Analyzing the Effectiveness of Project Management Course using UAE-QFE: A Case Study of the American College of Dubai

Ms. Sepideh Samadi, Dr. Mario M. Pallada, Dr. Poonam Singh, Dr.Ravikiran Dwivedula,
Dr. Enrique Guevarra and Ms. Aamina Rauf

Abstract—The purpose of this paper is to examine the effectiveness of project management instructional methodology and course content on achievement of course learning outcomes. We present the case of project management course taught at the undergraduate level in American College of Dubai, UAE. This course is run as a specialization course in the Bachelor of Business Administration Program. The pedagogy includes a range of techniques such as traditional lectures, case studies, and team based projects, which are used as assessments. The course learning outcomes are aligned with the QF Emirates, as required by the UAE Ministry of Higher Education & Scientific Research and correspond to Knowledge, Skills, and Competence dimensions. Achievement of the course learning and overall student satisfaction with the course is investigated through a survey. We analyze student success on the course, and for the influence of the instructors' effectiveness, and quality of assessments on the learning outcomes. Furthermore, we analyze the role of gender on the achievement of the learning outcomes on the course. Specific recommendations for improvement of course content, and pedagogy is presented.

Keywords— Project Management, Learning outcomes, Gender Differences, Knowledge, Skills, Competence

I. INTRODUCTION

THE larger purpose of business education is to prepare future managers, educators, and entrepreneurs who can perform in a dynamic business environment (Bratianu, 2015)[3]. In doing this, business education focuses on various learning outcomes such as knowledge transfer, development of specific skills, and critical thinking (Gosling, & Mintzberg, 2003[4]; Roglio, & Light, 2009[11]). Furthermore, this successful delivery of learning outcomes largely depends on the effectiveness of the instructor who facilitate the development of mental models in the students. The students

Ms. Sepideh Samadi (MA, PhD Candidate) , Instructor, Business Faculty, American College of Dubai, Dubai, UAE
Dr. Mario M. Pallada (DM, MBA, MBM), Dean of Business Department, American College of Dubai, Dubai, UAE
Dr. Poonam Singh(PhD), Dean of General Education & VPAA, American College of Dubai, Dubai, UAE
Dr.Ravikiran Dwivedula (PhD) , Research Coordinator, American College of Dubai, Dubai, UAE
Dr. Enrique Guevarra(DM), Senior Instructor- American College of Dubai, Dubai, UAE
Ms. Aamina Rauf(MA), Coordinator-Institutional Effectiveness, American College of Dubai, Dubai, UAE

then are aware of the reality and the context in which they are operating, and process all information/ data necessary to make effective decisions.

The development of such mental models requires the instructors to apply active learning styles. Active learning requires the students to perform meaningful activities, and reflect on what they are doing. Specifically, the instructors would employ techniques such as collaborative learning (students working together to achieve common goal), cooperative learning (students engaged in learning activities that promote mutual accountability to achieve common goals, and face-to-face interactions to develop interpersonal skills, and self-development).

The teaching techniques in project management education closely reflect these trends. According to Austin et al (2013)[1] managers in healthcare related projects need to rely more on "soft skills" as they need to be more people focused rather than process oriented. Smith et all (2008) in Poston and Richardson (20..)[10] state that universities are responding to this need by developing project management courses, offering project management degrees and certificate programs. Poston and Richardson (20..) [10] propose that collaborating with the industry itself as one of the effective tools of teaching and learning will give students a "real world" hands-on experience. Poston and Richardson (20..) [10] emphasize on exposing students to "soft skills" such as communication skills, critical thinking, leadership, collaboration and team-work, as a part of classroom activities so that they learn to develop, practice and apply these skills in the "real world" when managing projects.

On the other hand, educators also need to reflect on the learning outcomes that are intended to be achieved at the end of the course. Various outcomes such as development of applied knowledge & skills, interactional abilities, personal attributes (Toohey, 2002)[13], influences on student behavior, and cognition from collegiate experiences (Cheng, 2001)[14], and problem-based learning (Hager & Butler, 1996)[15] have been proposed.

In education, assessing the students' procedure is being designed in a way to get sufficient information about cognitive and effective conclusions of a group of learners. The results coming up from this assessment can be used for different purposes that one of them is to examine the equality in learning outcomes in terms of gender differences.

Traditionally, there are different beliefs regarding differences in learning outcomes between males and females. For instance, female students are being known as lower performance in some subjects such as mathematics (Eccles, 2011)[16] comparing to male student that are being perceived as a gender that learning outcome in subjects such as mathematic is higher than female, while female have higher classroom support comparing to males. Thus, in this paper, we discuss the impacts and effects of gender in learning outcomes and how it affects teaching and learning in classroom.

For the purpose of the study, we use Qualifications Framework Emirates (known as QF Emirates) developed by National Qualifications Authority -NQA, brought into effect through Federal Decree Number 1 'Establish and Maintain National Qualifications Authority by President His Highness Sheikh Khalifa Bin Zayed Al Nahyan of United Arab Emirates. While the QF Emirates comprehensively and objectively compares all qualifications delivered in the United Arab Emirates, it also specifically describes specific learning outcomes to be achieved in terms of knowledge, skills, and competence. These three strands of learning outcomes comprehensively cover cognitive abilities, application of knowledge to specific contexts, development of specific skills, and development of competence leading to demonstrable professional and personal development.

Thus, the objective of this paper is to investigate the influence of instructor's effectiveness and assessment tools on the achievement of three specific learning outcomes- knowledge, skills, and competence. In the subsequent literature review, we reflect on specific pedagogy applied in teaching project management courses, especially in universities.

II. LITERATURE REVIEW

Various pedagogical tools that can be used in the effective delivery of project management course. We find that techniques that promote collaborative working and reflection have been increasingly used by the instructors so that students gain knowledge, and acquire skills, and develop competence in project management. The most relevant studies from extant literature has been summarized in Table 1 below.

TABLE I:
SUMMARY OF LITERATURE REVIEW

Author (Date)	Findings
Kriger, Thomas J; Scheuermon, William E. (2016)	Promoting collaboration among students across several courses is a conceptually sound and valuable idea.
Robin S. Poston, Sandra M. Richardson (2011)	Greater collaboration between professional bodies of project management such as Project Management Institute (PMI), mentoring of student by faculty, and project professionals, and providing regular feedback to the students on their performance in the program
Ssegawa, Joseph K.; Kasule, Daniel(2015)	"Prayer" as a technique to teach project management allowed students to better understand concepts of project management, communication, and presentation skills through the application of collaborative learning techniques
Caroline Bayart, Sandra Bertezene and David Vallat, Jacques Martin(2014)	This research shows indeed that the use of "serious games" improves the knowledge acquisition and management competencies of the students with the evidencing of significant factors contributing to this improvement.
Mgr. Dušan Kucera, MBA(Dec 2013)	This paper discusses the need for introducing project management and project thinking at secondary schools
Jose Luis, Jose Maria, trevor Hassall, John Joyce, Eleni Germanou & Sophia Asonitou (2010)	Differences found in the approaches to learning of the students in European countries. Comparing accounting students in different countries and potentially identifying the underlying reasons why the quality of the learning outcomes achieved may differ under differing educational system.
Leon Korte, Angeline Lavine & Thomas Davies (2013)	The finding suggests that there are differences between female and male student rating of teacher effectiveness. Females in general tend to rate teachers higher overall in terms of teaching effectiveness. There are systematic differences between male and female students in terms of their perceptions of the teaching traits they find important and how they rate instructors of each gender.
Michelle Young, Meredith Mountford & Linda Skrla (2006)	The finding suggests that few students had undergone significant transformations in their learning regarding gender issues. Moreover, it was found that many students demonstrated resistance to reading, reflecting on and discussing gender issues.

III. METHOD

The objective of this research study is to understand the influence of instructor's effectiveness on the achievement of student learning outcomes in project management course delivered at the undergraduate level in the university. Hence, in line with this objective, we have adopted a positivist stance, and quantitative research methodology.

A. Items

A survey instrument comprising of two independent

variables – Lecturer Effectiveness (LT), and Assessment & Feedback (AS) was developed. Lecturer effectiveness was measured using five items while Assessment & Feedback was measured using three items. We have considered five dependent variables- Knowledge (K, measured using six items), Skills (S, measured using four items), Autonomy and Responsibility (AR, measured using four items), Role in Context (RC, measured using four items), and Self Development (SD, measured using four items). The items used to measure the two independent variables- LT and AS were based on the instrument developed by Wilkins and Balakrishnan (2013)[17] who investigated the effect of student experiences with the quality of teaching, academic program, and resources provided on the overall student satisfaction.

The items for the dependent variable ST were also based on Wilkins and Balakrishnan's work to measure overall student satisfaction (ST). The items to measure the three learning outcomes- knowledge, skills, and Competency (comprising of Autonomy and Responsibility, Role in Context, and Self Development) were based on the National Qualification Framework United Arab Emirates QF Emirates.

B. Sample and Procedure

100 students of the American College of Dubai who were pursuing their undergraduate program in business administration were identified. These students had studied project management as a part of the program. The students were identified by the Office of Institutional Research, and the survey instrument was handed out to the students by the instructors in the class room. Instructions on how to complete the questionnaire were provided to the students along with the instrument. Out of the 100 questionnaires administered to the students, 41 instruments were returned which we found to be complete, giving us a healthy response rate of 40%.

The reliability of the items was established using Cronbach alpha. SPSS version 16 was used for the analysis. Table II summarizes the items

TABLE II:
INTERNAL RELIABILITY OF ITEMS

Construct	Items	Cronbach Alpha
Independent Variables		
Lecturer (LT)	• Makes the subject interesting • Are experts in the field • Used language that I understand • Student has contact with lecturer as needed • Lecturer sympathetic towards students' problems	0.82
Assessment & Feedback (AS)	• Variety of assessment methods used • Involved on-going assessment • Student received detailed and helpful feedback •	0.70
Dependent Variables		
Knowledge (K)	• gained specialized knowledge related to project management • developed an understanding of theories and knowledge in other fields related to project management • developed a comprehensive understanding of methods and problem solving techniques related to project management • understand the critical approach to develop new concepts in project management through my knowledge of project management • am familiar with the latest research and current practices in project management • familiar with the latest research and current practices in project management	0.85
Skills (S)	• developed technical, analytical, and creative skills to solve problems in managing projects • have developed skills to evaluate, select, and apply the appropriate methods to solve problems and identify solutions • developed research skills related to project management • developed advanced communication and information technology skills to explain and evaluate project management concepts	0.90
Autonomy & Responsibility (AR)	• take responsibility to develop and manage complex work procedures in project management • can manage technical or managerial work in complex work environments • can work effectively as an individual or a team member when working on a project • can accept responsibility for my views and decisions when I start work	0.84
Role in Context (RC)	• can work independently without lot of supervision • can take responsibility for setting the goals for myself and for other members of my team at work • am able to collaborate with other qualified experts and work in their group • can take responsibility for professional development and mentoring of individuals working in my team	0.81
Self-Development (SD)	• undertake regular professional development and keep myself updated about new knowledge in project management • am able to learn new knowledge or concepts related to project management independently while I am working • can contribute to development of ethical standards and resolve ethical issues when I am working	0.69

IV. FINDINGS

It is to be reiterated that this is an exploratory research, and the purpose of this paper to is to present the initial findings that indicate the relation between the instructor's effectiveness in the class room and the achievement of student satisfaction and learning outcomes in project management course. As such, we have used descriptive statistics and specifically cross-tabulations for data analysis. Table 3 summarizes the cross tabulation results between the lecturer effectiveness (LT as independent variable) and Overall Student Satisfaction (AS), and Learning Outcomes (knowledge, skills, and competence as dependent variables).

TABLE III:
LECTURER'S PROFICIENCY AND ACHIEVEMENT OF LEARNING OUTCOMES

	Strongly Disagree achievement of learning outcome (%)	Disagree achievement of learning outcome (%)	Neutral (%)	Agree achievement of learning outcome (%)	Strongly agree achievement of learning outcome (%)
Lecturer's Proficiency	Knowledge				
	2.2	4.3	39.1	39.1	15.2
	Skill				
	2.2	19.6	28.3	39.1	10.9
	Competence-Autonomy & Responsibility				
	2.2	6.5	26.1	37.0	28.3
	Competence- Role in Context				
	0.0	8.7	19.6	54.3	17.4
	Competence- Self Development				
	2.2	4.3	39.1	39.1	15.2

It may be inferred from the above table 3 that lecturer's proficiency may significantly affect the achievement of learning outcomes. While 54.3 % of the respondents believe that the lecturer's proficiency effects them acquiring project management knowledge, 50% of the respondents agree or strongly agree that it helps them acquire project management skills. Interestingly, the strongest influence of lecturer's proficiency is on developing project management competence among the students, where 65.3% of the respondents report acquiring autonomy and responsibility competence to manage projects, 71.7% of the respondents strongly agreed or agreed to have developed competence specifically to work in project contexts, and 54.3 % of the respondents strongly agreed or agreed that lecturer's proficiency in the course lead to their self -development.

TABLE IV:
PERCEIVED ACHIEVEMENT OF LEARNING OUTCOMES

Variable	Men (Mean)	Women (Mean)
Learning Outcome: Knowledge	3.48	3.14
Learning Outcome: Skill	3.47	3.26
Competency: Role in Context	3.70	3.66
Competency: Self Development	3.59	3.48
Competency: Autonomy & Responsibility	3.69	3.61

Our second objective is to observe the role of gender in influencing the perceived effectiveness of the instructor, and assessments; and on the achievement of learning outcomes- Knowledge, Skills, and Competencies. Given our small sample size, and this being an initial exploratory study, we have compared the mean scores of our three variables related to the learning outcomes- Knowledge, Skill, and Competency (further categorized as Role in Context, Self Development, and Autonomy & Responsibility).

The initial results seem to indicate no significant difference in the perceived achievement of learning outcomes among the women, and men students. The differences in the achievement of learning outcome is highest with respect to perceived achievement of knowledge, less significant with respect to acquisition of skills, and least significant with respect to perceived achievement of competencies However, we do note that a larger sample size, and further analysis is required to conclusively comment on this trend.

A. Discussion

As the data have shown, majority of the respondents strongly believe the lecturer's proficiency has a significant impact on their learning ability which also implies that the lecturer has sufficient knowledge and understanding of the subject he/she is teaching and is well equipped in terms of his preparation for classroom instruction, i.e., has a comprehensive understanding of methods and problem solving techniques in project management and uses research and current practices in project management. The lecturer is encouraged to select his/her pedagogy to deliver the course. His/her effectiveness is evidenced by the high percentage (65.3%) of the respondents' response that they have acquired the competency-autonomy and responsibility as required. It is indicated that 71.7% of them have acquired this competence in managing projects.

TABLE V:
QUALITY OF ASSESSMENT AND FEEDBACK; AND ACHIEVEMENT OF LEARNING OUTCOMES

	Strongly Disagree achievement of learning outcome (%)	Disagree achievement of learning outcome (%)	Neutral (%)	Agree achievement of learning outcome (%)	Strongly agree achievement of learning outcome (%)
Assessment and Feedback	Knowledge				
	2.2	19.6	28.3	39.1	10.9
	Skill				
	4.3	15.2	28.3	32.6	19.6
	Competence-Autonomy & Responsibility				
	4.3	15.2	28.3	32.6	19.6
	Competence- Role in Context				
	0.0	8.6	19.7	54.2	17.5
	Competence- Self Development				
	2.2	4.3	39.1	39.1	15.2

It may be inferred from the above table 5 that quality of student assessment and feedback may significantly impact the achievement of learning outcomes. While 50 % of the respondents believe that the assessment and feedback facilitates acquisition of project management knowledge, 52.2% of the respondents agree or strongly agree that it helps them acquire project management skills. However, 47.9 % of the respondents remain neutral or disagree that the quality of assessments and feedback helps them to acquire project management knowledge.

Interestingly, the strongest influence assessment and feedback is on developing project management competence among the students. This is similar to the above where 52.2 % of the respondents report acquiring autonomy and responsibility competence to manage projects, 71.7% of the respondents strongly agreed or agreed to have developed competence specifically to work in project contexts, and 54.3 % of the respondents strongly agreed or agreed that lecturer's proficiency in the course lead to their self -development.

The course is using a range of assessments such conventional written exam, case analysis, reflection papers and comprehensive project work which form a significant weightage of the total assessment. These assessments provide an opportunity for the students to practice concepts of project management, reflect on such learning and apply this knowledge to produce deliverables such as project proposal or to conduct a project audit. In order to achieve these outcomes the students will be required to develop specific technical, analytical and problem solving skills.

Apart from developing project management skills and acquiring conceptual knowledge the students also develop project management competence. The case studies challenge the students with complex real world situations where one is required to make decisions as a project manager. Furthermore, through assessments such as comprehensive project work, the students are encouraged to work independently with minimal supervision from the faculty. As a part of the comprehensive project work the students based on their learning and interest the students are encouraged to select project topic. Furthermore, the students assume responsibility to be current

in their field of interest by referring to project management journals, books and other learning resources available at ACD. Being engaged in such continuous learning process also leads to their self-development.

Furthermore, the results suggest no significant difference in the achievement of learning outcomes between male and female students. This can be explained by increased opportunities for education in the country for both genders. The respondents come from similar professional background and experience which provide them with opportunities that acquire them with similar learning outcomes. However, further research is needed to conclusively establish the extent of similarities beyond what this research has shown.

REFERENCES

[1] Austin, C., Browne, W., Haas, B., Kenyatta, E., and Zulueta, S. (2013) Application of Project Management in Higher Education, Journal of Economic Development, Management, IT, Finance and Marketing, 5(2), 75-99 Sept 2013   75

[2] Bayart, C., Bertezene, S., Vallat, D., and Martin, J. (2014) "Serious games: leverage for knowledge management", The TQM Journal, Vol. 26 Iss: 3, pp.235 – 252
https://doi.org/10.1108/TQM-12-2013-0143

[3] Bratianu, C. (2015). Organizational Knowledge Dynamics-Managing Knowledge Creation, Acquisition, Sharing, and Transformation, IGI Global, Hershey
https://doi.org/10.4018/978-1-4666-8318-1

[4] Gosling, J., & Mintzberg, H. (2003). 'The five minds of a manager', Harvard Business Review, November, pp. 54- 63

[5] Jose, L. A. M., Jose M. G. G., Trevor, H. John, J., Eleni, G. & Sophia A. (2010). "The approaches to Learning of European accounting students". EuroMed Journal of Business, Vol 5 No. 3, pp.345-362
https://doi.org/10.1108/14502191011080854

[6] Kriger, T. J., and Scheuerman, W.E. (2016) Edubusiness comes to the academy: The virtual university and the threat to academic labor, Report Information from Proquest (February 16, 2016)

[7] Kucera, D.(2013) The Introduction of Project Management and Project Thinking at Secondary Schools, Central European Business Review, 2013. V.2, no 4, p.56-57. URL: http://cebr.vse.cz/cebr/article/download/102/75

[8] Leon, K. Angeline, L. & Thomas, D. (2013) "Does Gender Impacts Business Students' Perceptions of Teaching Effectivness?", Journal of College Teaching & Learning, Vol 10, no.3

[9] Michelle, Y. Meredith, M. & Linda, S. (2006), "Infusing gender and diversity issues into educational leadership programs", Transformational Learning and Resistance, Journal of Educational Administration, Vol.44 no.3, pp.264-277.
https://doi.org/10.1108/09578230610664850

[10] Poston, R.S. and Richardson, S.M.(2011) Designing an Academic Project Management Program: A Collaboration between a University and a PMI Chapter. Journal of Information System Education, v22nl p55-72 Spr 2011

[11] Roglio, K. D. and G. Light (2009). 'Executive MBA programs: the development of the reflective executive', Academy of Management Learning and Education, 8(2), pp. 156–173 https://doi.org/10.5465/AMLE.2009.41788840

[12] Ssegawa, J., and Kasule, D. (2015) "prayer: a transformative teaching and learning technique in project management", International Journal of Managing Projects in Business, Vol. 8, Iss: 1, pp. 177-1 https://doi.org/10.1108/IJMPB-06-2014-0050

[13] Toohey, S. (2002). Designing Courses for Higher Education. Buckingham: Open University Press.

[14] Chen, A, (2001). A theoretical conceptualization for motivation research in physical education: An integrated perspective. Quest, 53, 35-58 https://doi.org/10.1080/00336297.2001.10491729

[15] Hager, P. & Butler, J. 1994. Problem-based learning and paradigms of assessment. In S.E. Chen, R.M. Cowdroy, A.J. Kingsland & M.J. Otswald (eds.) Reflections on problem-based learning. Sydney: Australian PBL Network.

[16] Eccles, J. (2011). Gendered education and occupational choices: Applying Eccles et al. model of achievement-related choices. International Journal of Behavioural Development, 35, 195–201. https://doi.org/10.1177/0165025411398185

[17] Wilkins, S., Balakrishnan, M.S. 2013. Assessing Student Satisfaction in Transnational Higher Education. International Journal of Education Management, 27(2): 143-156 https://doi.org/10.1108/09513541311297568