

PRACTICE EXPERIENCE AND MULTIDISCIPLINARY COLLABORATION IN PROJECT MANAGEMENT: A CASE STUDY

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This paper formulates an insight into the importance of practice experience in project management success and the apparent lack of emphasis placed on this within the context of university education. Against the background literature, a review will be conducted into how well university education prepares the future project managers in the area of the practical project learning approaches. The paper provides an example of approaches currently being implemented in the Department of Architecture and Urban Planning at College of Engineering in Qatar University and models, strategies of effective practices for embedding enterprise and employability in higher education, in respect to the specific project experiences which are mandatory for the management of the running projects in Doha, Qatar. The paper describes the primary components of the theoretical research including the course program in Construction and Project Management, its integration with other courses, the cooperation required to support the interdisciplinary emphasis, and the establishment of an innovative academic/industry partnership to provide a state-of-the-art physical and technological infrastructure to support the program goals. The research concludes that the efficiency of interaction between theory and practice in the construction industry needs to be further examined, and some limitations and debates remain awaiting further investigation.

Keywords: University education, Professional training, Leadership, Construction industry, Road safety, Theory, Practice.

1 INTRODUCTION

1.1 Project Management Context

An investigation of the literatures reveals that projects often comprise of people and organizations from different nationalities and disciplines such as architects, engineers, clients, contractors, suppliers, and banks which generates complexity in the managerial procedures, due to different multidisciplinary approaches inside multicultural teams, foreign managers, and international partners. In the literature it is easy to see that different disciplines can influence a variety of project management issues such as: teams, leadership, communication, performance, risk assessment, business negotiations, international project management and planning. The success and failure of any project depends upon many factors, the project manager is considered to be the key contributor to the success of any project, as well as a guide for the team members to achieve the project completion and the client satisfaction (Cost, Time and Quality) (Nguyen *et al.* 2004). For Chileshe (2009), it is really crucial understanding the importance of the project manager to the success of the construction projects due to the fact that the managerial roles, responsibilities

and duties have direct impact to the success of the construction projects. In the construction field the project manager is considered to be one of the most important people who can lead and drive the projects in the right direction and conclude construction projects successfully. In addition the project manager can play the most important role regarding the improvement of the organization's performance, the organization's profitability and the client's satisfaction (Chileshe *et al.* 2009). According to Lientz and Rea (1995) the project manager has three clearly defined managerial responsibilities: resource manager, control manager and coordinator; additionally, as stated by Kerzner (1995) the project manager is responsible for ensuring the accomplishment of group and organizational goals and objectives. To affect this, he must have a deep knowledge of standards and cost control policies and procedures; finally he must understand organization behavior in order to effective and most have strong interpersonal skills. This is especially important during the controlling function. To succeed, project managers are required to deliver products and services that meet the needs of the organization and that deliver value to their clients. They must master the hard skills, such as understanding processes, tools and techniques, as well as people skills (Simsarian and Maria 2004). The latter allow us to highlight the importance of human skills in project management success and the apparent lack of emphasis placed on this within the context of university education.

1.2 Practice Experience in Project Management Education

While a great deal is written about traditional project management we know very little about the “actuality” of project based working and management, and still need to be investigated considering many controversial positions in the literature about what is needed to improve project management in practice and what should be done to enhance the value of practitioner’s lived experience of projects, enriching and extending the subject of project management beyond its current theoretical foundations. The growing critiques of project management theory and the need for new research in relation to the developing practice represent a synthesis of ideas for how the current conceptual theoretical base needs to evolve in relation to the developing world of practice experience in the field of project management (Rae 2007). The major problem relates to balance: too much of an emphasis on knowledge and not enough on competence; too much emphasis on information transfer learning methods and not enough on individual small group learning methods such as project teams, peer exchange, individual counseling and workshops. There is a lack of evidence on how learning strategies influence the development of students’ entrepreneurial competences and how these competences transfer into new project formation (Garavan and O’Cinneide 1994).

2 CHALLENGES IN QATAR FOR PROJECT MANAGERS

2.1 Projects and Multidisciplinary Collaboration

In Qatar there are many ongoing projects performed in collaboration with foreign companies and local partners such as Doha Metro, Lusail City, Hamad International Airport, Education City, new stadiums and infrastructures for the FIFA World Cup and a correct project management practice is fundamental to the success of all these initiatives. Project managers face numerous challenges, which include multi-disciplinary factors such as managing mixed teams pertaining to different disciplines and additionally many cultural differences within the same team. A recent report regarding Qatar construction market has announced Qatar’s plan to invest many billion dollars in transport infrastructure, in addition to the new roads, metro systems and airport expansion to support the influx of football fans expected for the mega

event of the FIFA World Cup 2022. The Qatar Labor Ministry estimated a massive number of additional workers required to complete the World Cup and related infrastructure projects. Actually there is a predicted increasing scarcity of both technical and labor staff which probably will continue to be one of the biggest challenges for the construction sector in Qatar. World Cup 2022 will be a whole new experience for most of the involved construction companies as well as Qatar nation itself, which needs to meet the challenges of completing all the announced projects within the remaining period of time. The only possible solution to achieve the national target is in the quality of the people working on the projects and particularly in the quality of the project managers guiding the projects' completion. In Qatar nowadays there are many projects which are more complicated than any other project completed in the past years, requiring fast tracking procedures and multidisciplinary-collaboration between construction companies, architects, engineers, project managers and owners. The multidisciplinary team, guided by the project manager, is generally involved in many tasks such as regulation, approvals, design, tender documents, manufacture, installation and maintenance of buildings and other structures. In the 21st century the skills requested for a good project manager are mainly the knowledge and experience to execute projects profitably while managing risk and enhancing the opportunities for future business. In the construction field, people are the most important resource for construction organization's and the completion of the projects depends on knowledge and skills of key people, planning and executing the work, having talented project manager in place to guide and direct operations (Sharma 2013). The construction industry particularly in Qatar, has 100% relied upon immigrant or foreign labor to varying degrees through the course of history. There are however many complications involved with foreign employment, namely language and cultural barriers and the obvious problems in communication can lead to confusion that can hamper productivity and coordination. In order to maximize long term and perfect performance is important to provide the project managers with the requested training and practice experience necessary to hasten the assimilation into the workforce.

2.2 Education and Professional Training in Project Management

Research indicates the level of education and training does influence productivity. A high level of professional training yields correspondingly higher productivity. Education and training of project managers is one of the keys to improving construction performance and leads to high levels of commitment, enthusiasm, self-motivation, productivity and innovation. Practice experience also enables project managers to make easily decisions for which they are accountable and responsible. Leadership and collaboration are two of the most important characteristics for the project managers and must be raised from among the team members to aid in effectively coordinating activities by providing the communication link between management and work crew. Professionalism starts at the first steps of a student's education in university. Different disciplines, from their initial stages of training, can model and affect the student's attitude and behavior in collaborative work, and the way they act and perform as the new Professional Managers (PMs) of the future.

2.3 Bridging the Gap

Academic institutions and construction companies jointly can play a vital role in this direction and in many countries efforts are being done to bridge the gap between the theory and practice, between academia and industry. Academic institutions, in close coordination with industry representatives are making workshop and professional training courses which can easily enhance

the working capacity of the management involved in various activities of the construction industry. In the same way, in Qatar also, many new initiatives are taken up by the industry and academic and the government is supporting them by implementing and introducing new laws and regulation in the professional experience training. For a more targeted approach to training and continuing practice education, more intensive workshop or additional internship relations need to be developed, to achieve a more practical approach in project manager education and fulfill the needs of the industry. If this step will be implemented with commitment in Qatar, the shape of the construction industry will perform better within few time, which will automatically ensure the completion of all projects, in targeted time-frame with full quality assurance.

3 PROJECT MANAGEMENT AND PRACTICE EXPERIENCE IN QATAR UNIVERSITY

3.1 The Research Project Proposal

In Qatar University a multidisciplinary research project has been proposed and developed to involve students and instructors specializing in diverse disciplines and aspects of Architecture and Urban Planning (AUP) and Industrial and Systems Engineering (ISE) in order to improve the students practice experience in project management learning approaches. The aim is to get them to focus on a common assignment as part of their courses (a class project in this case), using the tools of project management to investigate and develop the students' capabilities and attitudes when working in a multidisciplinary project. The extent that project managers and their teams interact effectively within the project environment is not exclusively an issue of multi-collaboration; it is influenced by different national cultures, and past experiences, and can affect a variety of managerial roles and activities, for instance, leadership schemas (the criteria of a good or a bad leader) and behavior scripts (greetings) vary between those of different cultural backgrounds. The project topic was linked to the active competition of the Qatar Road Safety Studies Center (QRSSC), which is a prominent research center in Qatar University, in the form of prize money for the winning team. The aim of the project was to increase road safety awareness in Qatar (NRSS 2013-2022). As the youth are the basis of the Qatari society, the competition target the youth of Qatar University to engage them in road safety awareness and its importance.

3.2 The Project Deliverables

The students were working towards producing the project deliverables requested, including reviewed pedestrian safety and road regulations. In addition, their work aims to propose a re-design of some dangerous areas, improving the quality of the road layout in Qatar in order to meet the required road safety measures. With the proposed students' guidelines for re-design, Qatar's road users will benefit from improved road safety, reduced traffic congestion and more environmentally friendly driving, all enabled by better developed roads. Moreover, the research project strives to develop awareness-raising messages regarding road safety to help prevent all road fatalities. The aim of the multidisciplinary project was to promote the development of Qatar road safety educational materials and target road safety publicity campaigns. The competition of Qatar Road Safety Studies Center (QRSSC) requested the students to produce an awareness video which will develop, diffuse, collate, and disseminate information on good practice in road safety education, training, and publicity throughout Qatar, not only in Doha but also in other areas- Al Khor, Lusail and Dukhan.

3.3 The Research Methodology

A structured research method and templates were selected to assess differences in PM strategies of the multidisciplinary research project team, in using PM tools (Gray and Larson 2002). A convenience sample was used to develop the project and collect data from the students, and a report template, a minute of meeting template, a poster and video template. The research items covered specific areas of project planning and were then analyzed to compare Architecture and Engineering students in their approach to the multidisciplinary project and in the proper application of managerial tools (Meredith and Mantel 2006) for planning scope, time, cost, risk, quality, integration, innovation and technology, and communication. Instructors provided course delivery to both batches of students through integrated lectures during the course and through readings, educational audio and video materials, and parts of course assignments. From the initial phase of site analysis, students developed their report, selecting one specific area in Doha, the project title, the group name, and arranging some meetings to define the multidisciplinary collaboration between batches such as project objectives, project methodology and confirmation of each member's role, demonstrating leadership. Students met in their group approximately twice in a week. They developed a proper agenda each time and discussed it during the meeting. Weekly meeting minutes prepared by the groups described the events of the meeting, starting with a list of attendees, a statement of the issues considered by the participants, and related responses or decisions for the issues. The meeting minutes were collected in a report to monitor the progress of the work; the report was checked against a rubric on written reports.

4 RESULTS

The deliverables showed the students' ability to understand the basic principles of project and practice management, the initial evaluation of project costs and budgets, the proper use of activity scheduling, ability to allocate resources to the project, and to demonstrate understanding and appropriate use of methods for controlling projects, including cost and time. All the students submitted their project report respecting the deadlines. Many groups of students interacted collaboratively for the whole duration of the project, not only demonstrating their ability to work in interdisciplinary teams and with other multidisciplinary groups to successfully complete their projects.

Particularly for the QRSSC competition, the submitted videos addressed objectives such as raising awareness about the danger of speeding on the road, the importance of wearing seat belts, the importance of using baby car seats and other measures relevant and useful to road safety in Qatar. Students provided conclusions and recommendations regarding guidelines and standards for road design that arose from their projects:

- Proposing homogenous road sections in the redesign of the road to avoid conflicts with oncoming traffic.
- Proposing street furniture and signs that will avoid unpredictable behavior will separate vehicle types and will reduce speed at potential conflict points.
- Limiting the number of design elements in each category and making them uniform for the roads safety purpose.
- Creating a sustainable safe road network having flow function generated by uninterrupted road and slip roads having an access function which need to facilitate appropriate entrances.

5 CONCLUSION

In this paper we have set out to show how the practice experience and multidisciplinary collaboration, between students, in project management can enhance research practice in a field dominated by many theoretical disciplines approaches. We have also described the methodology used and some of the issues which have arisen in developing this approach, especially because the research is still facing an initial phase of development and investigation. The multidisciplinary research included a wide range of activities, detailed review of the awareness state regarding the road safety in Qatar, site surveys, data analysis and students' project proposals for many areas in Doha, in order to contribute to the national road safety strategy. In conclusion we would like to emphasize that the managerial tools, deliverables and outcomes applied for the case study are similar to those which might be encountered in normal professional practice. The concept of re-designing for the purpose of road safety as a research activity may be difficult to recognize given this similarity, which establishes the relationship, analogies and differences between theory and practice in project management. However, in giving this partial view of a complex, long-term investigation, there are some limitations in describing the full process of evaluation and the outcomes for every single group of students, due to the fact the research project is still on process and most of the deliverables are still in their preliminary stages. All the outcomes need to be further investigated and compared with other similar outcomes from other multidisciplinary projects which are under further development in Qatar University.

References

- Chileshe N. and Ali M. A. M., *The influence of the project manager on the success of the construction project*, Conference: ICCEM-ICCPM, 2009.
- Garavan T. N. and O'Cinneide B., *Entrepreneurship Education and Training Programs: A Review and Evaluation* Journal of European Industrial Training, Vol. 18 (8), 3–12, 1994.
- Gray, C. F. and Larson, E. W., *Project Management: The Managerial Process*. McGraw Hill, 2002.
- Kerzner, H., 1995, *Project Management a systems Approach to Planning, Scheduling and controlling*, New York, Van Nostrand Reinhold, 5th Ed, 2002.
- Lientz, P. B. and Rea, P. K., *Project Management for the 21st Century*. UK, Academic Press, INC, 1995.
- Meredith, J. R. and Mantel, S. J., *PM: A Managerial Approach*, Fourth edition. John Wiley and Sons, New Jersey, 2006.
- Nguyen, L. D., Ogunlana, S. O., and Lan, D. T. X., *A Study on Project Success Factors in Large Construction Projects in Vietnam*. Engineering, Construction and Architectural Management, 11 (6), 404–413, 2004.
- NRSS National Road Safety Strategy in Qatar (2013-2022).
- Rae, D., *Connecting enterprise and graduate employability: Challenges to the higher education culture and curriculum?* Education & Training, Vol. 49 Iss: 8/9, 605 – 619, 2007.
- Sharma T. C., *Training and education of construction professionals*, in Construction Sites, 77, 7–8, 2013.
- Simsarian, S. W. and Maria, T., *Project Managers Doubling as client account Executives*, Academy of Management Executive, 18 (1), 60–71, 2004.