

Using Case Study Method in Project Management Education as a Tool for Improvement of Project Manager's Skills

Ikbal Erbas, Assist. Prof. Dr.

Akdeniz University Faculty of Architecture
Department of Architecture, Antalya/ Turkey

Abstract

Project management education is a kind of education which aims to equip students with necessary skills that they would need in real business life in their career as a project manager. For being successful in project management education, case study method of teaching holds a very important position between the other methods. This study examines contributions of the case study method to the project management education in terms of improvement of the project manager's skills. For this purpose in the scope of the study work flow process of the case study approach and main benefits of the approach are defined. Defined benefits' impacts on improvement of the project manager's key skills are revealed. It is found out while the students are starting to improve their human skills when they begin to work as a group, improvement of technical and conceptual skills are provided during all phases of the process.

Keywords: case study, project manager, skill, technical skill, human skill, conceptual skill

Introduction

Project management education is distinct from other educational programs because of its unique structure. Diversity of a project manager's duties during a project lifecycle, requires the project manager to have different skills. In real life, project managers need to deal with a range of issues for successful delivery of construction projects. Project managers therefore need to equip themselves with an appropriate set of various skills and/ or attributes, not only to successfully carry out their works in terms of technical ability, such as those relating to time, quality and cost; but also to effectively mobilize coordinating, motivating and collaborating efforts in terms of relational harmony, such as approach to teamworking (Rahman et al., 2007). As a result it is expected from project management education to improve project manager candidates' skills in many different areas. One approach to satisfy this need is using case study approach in project management education.

Although law schools first showed the way for the case study approach, beginning in 1870 (Breslin and Buchanan, 2008) references point out that the case study method is useful for different fields of educational programmes. Francis (2001) asserts that case studies have a long and well-established history in landscape architecture. Breslin and Buchanan (2008) emphasize the importance of using case study method in design. They also defend that act of researching and writing a case study can be seen as an application of the design process. Raju and Sankar (1999) assert the importance of using case studies in engineering education. The case study method was first used as a learning method for management in the beginning of the XX century, and since then has been widely use, and has been quite successful as a learning methodology for management (Mintzberg, 2004; Gonzalez, 2011). Today using case study method is an important tool for lecturers in project management education. The purpose of this study is to explore contributions of the case study method to the project management education in terms of improvement of the project manager's skills. For this purpose in the scope of the study to explore interaction between using case study method in project management education and project manager's skills, benefits of the case study method will be determined by defining flow process of the method, and impact of determined benefits on skills expected from the project managers will be examined.

RESEARCH METHODOLOGY

There are two main points of the study. The first main point is to determine the benefits of using case study method. The benefits of the case study method will be determined by defining flow process of the method. Identifying the skills that is

expected from project managers constitutes the second important point. When previous studies are investigated, it is found out that project managers skills have been categorized different from each other. Katz (1974) (also cited in Odusami, 2002) proposed a three skill approach to understand the skills of an effective administrator. These are:

- Technical skill
- Human skill
- Conceptual skill

Technical skill, is defined as an understanding of, and proficiency in, a special kind of activity particularly involving methods, processes, procedures, or techniques. This skill, he argued, is the skill required of the greatest number of people. Human skill, is an executive ability of a leader to work effectively as a group member and to build cooperative effort within the team he leads. This type of skill is required in order to work with people perceptions and behavior to supervisors, equals, and subordinates. Conceptual skill, is the ability of a leader to see the enterprise as a whole and recognize how the various functions of the organization depend on one another and how changes in any part affect the other. It can also be described as the ability to coordinate and integrate all the activities and interests of the organization towards a common objective. Since Katz's proposition of the three-skill concept, many authors have expanded these basic skills further to add more (Odusami, 2002). Robert and Goodwin (1993) categorized skills same as Katz approach but they added negotiating skills to these three skills categorization. Fisher (2003) defined ten knowledge areas of project manager divided into 77 subcategories. In this study, as a starting point Katz's approach was used due to he had drawn a general frame for explaining main skills.

CASE STUDY APPROACH

Bonoma (1989), Grant (1997) and Jerrard (2005) define the case study method as an approach that implements active learning strategies for students based on a description of a situation or context in which a problem or set of issues arises. According to Raju and Sankar (1999) a case study typically is a record of a technical and business issue that actually has been faced by managers, together with surrounding facts, opinions, and prejudices upon which management decisions have to depend. Tal (2010) (cited in Habasisa and Hlalele, 2014) defines case study as a meta-skill that integrates cognitive perceptions, self-regulation skills, and interpersonal relationships with learners and teachers. Grant (1997) outlines the benefits of using case studies as an interactive learning strategy, shifting the emphasis from teacher-centred to more student-centred activities. On the other hand Breslin and Buchanan (2008) defend that case studies are not a perfect solution to the problem. They also state that case studies cannot tell what decisions should be made, but they can connect the student to social phenomena, real life experience, and existential situations in a way that helps to sharpen thinking and inform decision-making.

Formal case study structure requires researchers to determine a problem, make initial hypotheses, conduct research in gathering information and making observations, revise hypotheses and theory, and tell a story (Breslin and Buchanan, 2008). The most important issue to be succesful in using case study approach is to conduct the case study flow process accomplishedly. Definition of the flow process and benefits provided from this process could be summarized in five phases:

- 1. Submission of the case study:** The lecturer gives every student a case and questions about the case in a written format. This is the first time for students to be faced with real word situations. It is possible to reflect the real world of business and employment relations by designing case study-based assessment that encourages students to consider the changing environment and the implications of their decisions with regard to other parties in the case study scenario (Jerrard, 2005). Unlike case histories the final outcome regarding the case is usually not presented, rather it is an open-ended approach. This phase provides a description of specific circumstances that confront an individual (Russell and McCullouch, 1990) in real life.
- 2. Identification of the problems by the students:** The students have to read that through thoroughly, identify the problems and prepare their response to the case beforehand (Kooskora, 2002). The students use theory and knowledge, obtained in course work, to solve the problem or situation (Russell and McCullouch, 1990). For preparing their response to the case, they need to use their previous knowledge. Many case studies require resource investigation and encourage students to utilise a number of different sources. This phase provides significant benefits due to it promotes information gathering and analysis, also promotes retention of knowledge.

3. Introducing the case and giving information by the lecturer: The lecturer gives students a technical note with some questions he wants to highlight. Because of complication of the cases it may not be really possible to participate in the case discussion without having read the case before (Kooskora, 2002). The lecturer also should present in class tools required to solve the case by describing relevant concepts and theory of the case study (Russell and McCullouch, 1990). He also should make a short introduction to the case and give some background information (Kooskora, 2002). The case study approach is a motivational tool that raises the level of the students' interest by offering problems they may encounter in the "real" world (Russell and McCullouch, 1990), and also it is beneficial because it promotes interaction between learners and teachers.

4. Answering questions and solving case study as a group by the students: The class is divided into groups. The size of the group depends on the number of students in the class. Usually there are 4-6 students in one group. At first the students have to answer the questions the lecturer has given them and they have to reach agreement between themselves. This stage can also be viewed as an exercise for practising the skills involved in team-work (Kooskora, 2002). This phase enables group working and develops communication, integrates theoretical principles with practice. Students can evaluate the case from multiple perspectives. It promotes the ability to develop a reasoned response to circumstances and can be used to encourage critical and strategic thinking (Jerrard, 2005). On the other hand students have to learn coping with effective use of given time for solving case. This provides students experience in time management.

5. Presentation and discussion of proposed solutions by the groups: The groups have to put down the answers on paper in written form and they have to prepare to make a presentation in front of the others and be ready to discuss the subject with all participants. It is important to highlight the real problems and be ready to analyse all the aspects of the situation (Kooskora, 2002). Problems provide an atmosphere of learning through example whereby the student actively participates in the educational process (Russell and McCullouch, 1990). Due to case studies require students to present their work in a variety of formats, the method provides presentation experience to them.

When it is needed students may turn back to upper phases for feedback. Work flow process and benefits provided from defined phases are shown in Figure. 1. Although most of the benefits are valid for multiple phases, in Figure 1 they are shown in the phase where maximum benefit is provided.

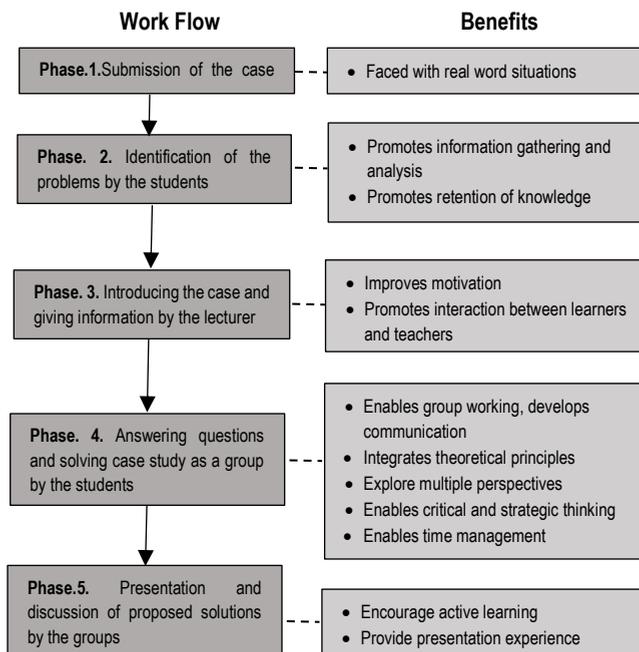


Figure.1 Work flow of the case study method and benefits provided

PROJECT MANAGER'S KEY SKILLS INFLUENCED BY CASE STUDY METHOD BENEFITS

A skill implies an ability which can be developed, not necessarily inborn, and which is manifested in performance, not merely in potential (Katz, 1974). Because of the fast developments in construction industry such as using new technologies in construction means and methods, ability of managing a project requires project managers to have much more skills. The key role of the project manager in construction process related to competitiveness and productivity, shows the significance of his sufficiency in all aspects. Therefore definition of the project manager's key skills has an importance for continuation of the management process. Katz (1974) defined project manager's key skills in three different categories as:

1. Technical Skill: Technical skill implies an understanding of, and proficiency in, a specific kind of activity, particularly one that involves methods, processes, procedures or techniques. Successful project managers should have relevant experience or knowledge of the technology required by the project they manage. Technical skill involves specialized knowledge and analytical ability in the use of the tools and techniques of the specific discipline (Katz, 1974; cited in El-Sabaa, 2001). Most of vocational and on-the-job training programs are largely concerned with developing this skill (Katz, 1974).

2. Human Skill: Human skill is the executive's ability to work effectively as a group member and to build cooperative effort within the team he leads. As technical skill is primarily concerned with "things" (process or physical objects), human skill is primarily concerned with working with people. A project manager with a highly developed human skill is sufficiently sensitive to the needs and motivations of others in his project. He is skillful in communicating with others, in their own contexts, what he means by his behavior (Katz, 1974; cited in El-Sabaa, 2001). According to Katz (1974) an effective administrator must develop his own personal point of view toward human activity, so that he would: (a) recognize the feelings and sentiments which he brings into a situation; (b) have an attitude about his own experiences which will enable him to re-evaluate and learn from them; (c) develop ability in understanding what others, by their actions and words (explicitly or implicitly), are trying to communicate to him; and (d) develop ability in successfully communicating his ideas and attitudes to others.

3. Conceptual Skill: This skill is used to connote the ability of a project manager to envision the project as a whole. It includes recognizing how the various functions of a project depend on one another, and how changes in any single part could affect all the other parts. It extends to visualizing the relationship of an individual project to the parent organization. Recognizing these relationships and perceiving the significant elements in any situation, the project manager should then be able to act in a way that advances the overall welfare of the project and the parent organization (Katz, 1974; cited in El-Sabaa, 2001). In applying this definition to the project management situation, the point can be made that it is crucial to project success that the project manager be able to conceptualize all elements of the project situation and the extent to which the elements interact with each other (Goodwin, 1993).

Different people learn in different ways, but skills are developed through practice and through relating learning to one's own personal experience and background (Katz, 1974). In project management education most of the students do not have firsthand experience in construction projects. Although some of them have indeed interned on a project or visited construction sites, very few have actually generated schedules, estimated cost, or developed earned-value reports (Damjanovic and Rispoli, 2014) and have required skills. For management education using case studies has important effect on management skills. Chakrabarti and Balaji (2007) conducted a survey related to perception of selected faculty on case study method of teaching in management education. They found out that the case study method enables students to pick up the skills required to solve the complex problems in practical business situations.

Learning with case studies is an important opportunity for the students due to they have chance to be faced with real word situations before they graduate. Students may benefit from case studies to improve their skills in learning process. Relationships between benefits of the using case study method defined above and skills that could be improved by means of these benefits are summarized in Figure 2. Although all of the phases have influence on three of the skills, in the scope of the study the most influenced skills are defined.

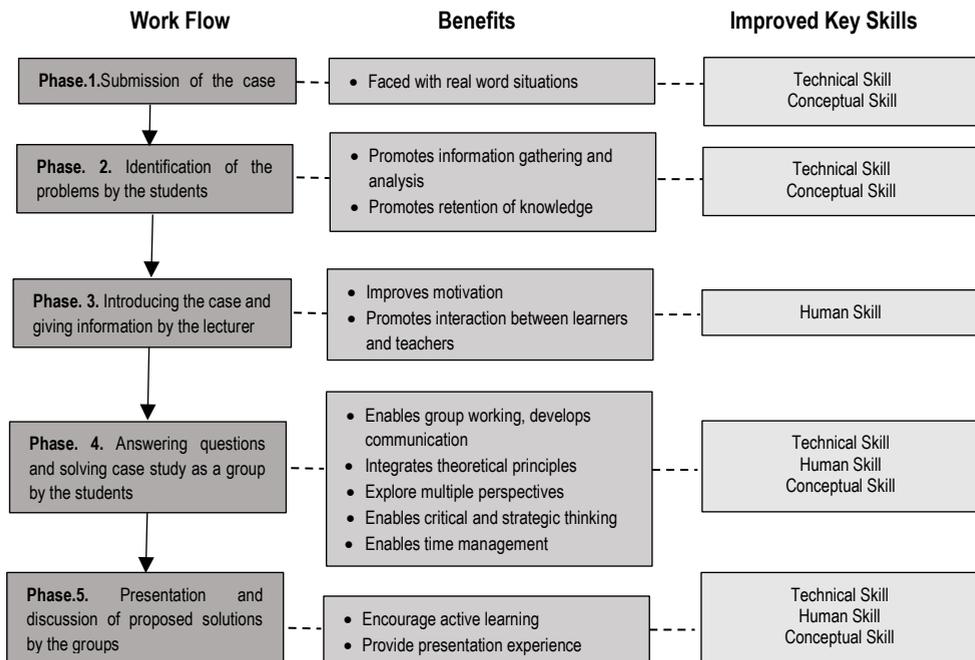


Figure.2. Relationships between benefits provided from the case study method and key skills of the project manager

The case studies can be valuable for a profession in a number of ways. For practitioners, they can be a source of practical information on potential solutions to difficult problems. For professional education, case studies are an effective way to teach by example, to learn problem-solving skills, and to develop useful evaluation strategies. For the profession as a whole, case studies are a way to build a body of criticism and critical theory (Francis, 2001). Contributions of the case studies to the project manager candidates shown in Figure.2 are described below.

- Phase.1:** Submission of the case by the lecturer provides students to be faced with real world situations. The students have to be prepared and ready to contribute to an active discussion, to find connections between different issues and take actions as well as foresee the consequences. It is important that the students have some general knowledge, some specific knowledge and also the necessary skills for using that knowledge (Kooskora, 2002). In this process these defined real world situations will be integrated with the theoretical knowledge learned in lectures by the students. The students will also need to use their technical skills in both understanding and solving the case. The case-based teaching and learning allows participants to consider multiple solutions for a single problem or dilemma, promotes a tolerance for ambiguity and intricacy, builds students' confidences in the analysis of complex problems, and compels students to visualize themselves in a real-life scenario (Sankar et al., 2008). Conceptual skill involves the ability to see the problem as a whole. By facing with real word examples students will comprehend the problem from a bigger perspective that will help to improve conceptual skill.
- Phase.2:** Identification of the problems by the students at the beginning of the process will help students to improve their technical and conceptual skills. By this way students will have chance to gather and analyse information and knowledge related to situation. This also will help retention of these knowledge.
- Phase.3:** Introducing the case and giving information by the lecturer will ensure interaction between learners and lecturers, and this will provide to establish a closer dialogue with each others. The dialogue established will increase the students' s motivation to the lecture. This situation will have an important impact on the development of human skills.
- Phase.4:** Answering questions and solving case study as a group by the students has influence on three of the defined skills. In this phase students are expected to work as a group. Communicating in a group will improve human skills of the students. This phase also develops the student's analytical and problem-solving abilities by encouraging them to

perform analysis, and look for different perspectives (Gini, 1985). The use of case studies has the potential to encourage students to use their critical thinking skills to solve engineering problems and understand other related issues such as plausibility, cost and ethics, to appraise content, to understand the process and its limitations, to have a more positive attitude toward learning engineering concepts, and to be able to ask more critical questions when faced with a technical crisis. Unlike problems normally assigned to students at the end of a lesson, cases do not set the problem out in clear steps; nor do they lead to a single correct answer. This forces the students to think beyond the obvious and seek out other resources/sources of information to help them understand the issues involved (Sankar et al., 2008) These benefits have influence on both technical and conceptual skills.

- **Phase.5:** Presentation and discussion of proposed solutions by the groups have influence on three of the skills too. A case method helps develop the students' abilities to articulate a point of view, defend it, and inform their own views with the opinions of others. These discussions are an important component of case method learning, and of success in the "real world" (Kooskora, 2002). The case studies help in engaging students in exploratory discussions and find a "best possible solution" rather than "right/ wrong" solutions (Gini, 1985). In this phase students will be encouraged to be active for defending their solutions with a presentation. This will make learning process to be more student-based process for the participants.

-

CONCLUSION

As a key participant project manager's skills are directly associated with project success. So for ensuring an effective teaching, lecturers should focus on improvement of the project management students key skills. Case study method has been used in different fields of education since a long time ago and the method can be used as an important teaching tool in project management education. Success of the method for improvement of defined key skills is directly related with the process of the method and also related with benefits gained from this process. It is found out while the students are starting to improve their human skills when they begin to work as a group, improvement of technical and conceptual skills are provided during all phases of the process.

The case study method creates a simulated atmosphere where students will face with real word situations. Being in this atmosphere will provide students to think analytically and to understand engineering decision-making process. In addition, student based learning style of the method will encourage students actively participate in learning process. This will lead to increase efficiency of the lecture. Due to the case study method requires students working as a group, the case study method will provide students to see their tendency for being a group member. With this method it will be also possible for the lecturers to explore leadership characteristics of the students. All of these aspects of the case study method have impact on project manager candidates as a whole. The most critical point about using this method is selection of the right case to the right situation and following the case study process properly by the lecturer, which can be the subject of a new research.

REFERENCES

- [1] Bonoma, T.V. (1989). *Learning with Cases*. Harvard Business School, Boston, MA.
- [2] Breslin, M. and Buchanan R. (2008). On the Case Study Method of Research and Teaching in Design. *Design Issues: 24*(1).
- [3] Chakrabarti D. and Balaji M. S. (2007). Perception of Faculty on Case Study Method of Teaching in Management Education: An Empirical Study. *The Icfaian Journal of Management Research*, 6(10).
- [4] Damnjanovic, I. and Rispoli, J. P.E. (2014) Case Study Narrative in Teaching Construction Project Management: Earned Value Method Examples Practice. *Periodical On Structural Design And Construction*, 19(1), 41-49.
- [5] El- Sabaa, S. (2001). The skills and career path of an effective project manager. *International Journal of Project Management*, 19, 1-7.

- [6] Fisher, D. (2003). *Construction project management education and training standards for career development at Sandia National Laboratories*. Sandia National Laboratories Cooperative Project Department (10824), Albuquerque, N.M.
- [7] Francis, M. (2001). A Case Study Method For Landscape Architecture. *Landscape Journal*, 20(1), 15-29.
- [8] Gini, A. R. (1985). The Case Method: A Perspective. *Journal of Business Ethics*, 4, 351-352.
- [9] Gonzalez, C. R. (2011). Education for Management Pros & Cons of Using Case Method in the XXI Century. *Journal of Executive Education*, 10(1), 117-126.
- [10] Grant, R. (1997). A Claim for the Case Method in the Teaching of Geography. *Journal of Geography in Higher Education*, (21)2, 171-185.
- [11] Habasisa, M. and Hlalele, D. (2014). Using Case Study as a Teaching and Learning Strategy in the Teaching of Economics: A Literature Review. *Mediterranean Journal of Social Sciences MCSE Publishing*, 5(23).
- [12] Jerrard, M. A. (2005). Assessing Student Learning and Skills Using the Case Study Method. *Journal of New Business Ideas and Trends*, 3(1), 27-36.
- [13] Katz, R. L. 1974 Skills of an effective administrator. *Harvard Business Review*. September/October, 90-102.
- [14] Kooskora, M. (2002). Using Case Studies in Class, *EBEN Conference Teaching Business Ethics II*, in London, UK.
- [15] Mintzberg, H. (2004). *Managers Not MBAs: A Hard Look at the Soft Practice of Managing and Management Development*. Berrett-Koehler Publishers.
- [16] Odusami, K. T. (2002). Perceptions of Construction Professionals Concerning Important Skills of Effective Project Leaders. *Journal of Management in Engineering*, 18(2).
- [17] Rahman, M., Miller, C., Packham, G., Sawakhroon N. and Meng J. (2007). Project Manager Performance, *CME 25 Conference Construction Management and Economics 'Past, Present and Future'*, University of Reading, UK.
- [18] Raju, P.K. and Sankar, C. S. (1999). Teaching Real-World Issues through Case Studies. *Journal of Engineering Education*, 88(4), 501.
- [19] Russell, J. S. and McCullouch, B. G. (1990). Civil Engineering Education: Case Study Approach. *Journal of Professional Issues in Engineering*, 116(2).
- [20] Sankar, C. S., Varma, V. and Raju P. K. (2008). Use of Case Studies in Engineering Education: Assessment of Changes in Cognitive Skills. *Journal of Professional Issues in Engineering Education Practice*, 134(3), 287-296.
- [21] Tal, C. (2010). Case Studies to Deepen Understanding and Enhance Classroom Management Skills in Preschool Teacher Training. *Early Childhood Educational Journal*, 38,143-152.