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Teaching organizational project management at postgraduate level

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Abstract

At postgraduate level, students expect more than basic project management education. Therefore a course called "Organisational Project Management" (OPM) was introduced in an international master's program in project management. The intention with the course was twofold: Firstly, to introduce OPM as a research field in organization theory; secondly, to prepare the students for working in a multi-project environment.

In this paper we present how the course was designed to fulfill the students' demands on an academic course at this level, while at the same time giving them practical experience of how OPM is implemented in the industry. Hence, the course is divided in a theoretical part presenting current theories in OPM, and a practical part, in which the students study how these theories and practices are applied in different companies. The students are working in a project spanning from initiation to closure, in which they prepare for and perform a maturity assessment of a company of their choice.

The course has been run in six consecutive programs. From start, feedback from the students has shown that they consider the learning outcome very high and useful for their future work life. For some of the students, this is the first time that they have been provided an opportunity to discuss organizational issues and concepts such as project governance and project portfolio management with a manager in the industry. For students with work experience, the course has provided means to reflect on their previous work life.

Keywords: Organizational project management, postgraudate education

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1. Introduction

At universities the subject project management was introduced about half a century ago and then chiefly in engineering curricula. Stemming from the developments in the 1950s with the advent of computers, operational research and systems management (Morris, 1994) the focus in project management education was on scheduling and optimization techniques. The project management task was thus more or less reduced to merely a planning-and-control exercise underpinned by a rationalistic engineering mind-set. It was not until the 1980s that a shift started to take place as projects more and more were regarded as a way of working in teams in order to grapple with specific problems. Temporary teams (task-forces) demanded proper enablement from the team leader as motivator and communicator. Later, as business schools started to engage in researching project organizations, other aspects, such as the projectification of society (Ekstedt et al, 1999) or of organizations (Midler, 1995); the organizational contextualization of projects (Engwall, 2003); the professionalization (e.g. Blomqvist and Thomas, 2004) and institutionalization of project management (e.g. Blomqvist and Söderholm, 2002; Bergman et al, 2013); etc. Today there is much awareness of the importance of viewing projects, not as singular and isolated undertakings, but rather as ways if structuring and simplifying complex tasks in a larger organizational setting. We now talk about programs and project portfolios and new managerial roles have been introduced, such as program managers or portfolio managers. Yet, these new perspectives are only slowly integrated in university teaching, as there is a perplexity about how to do it and at times a lack of fresh ideas. In many ways the engineering mind-set still reigns in textbooks used primarily in undergraduate courses.

1.1. Background

Since its inception in the late 1990s, the postgraduate program International Project Management has been run by Chalmers University of Technology in collaboration with Northumbria University, UK. In 2007 the program had to be redesigned in order to fulfill the requirements for master's programs according to the Bologna declaration. One of the requirements implied that the program had to be extended from three to four semesters, which entailed adding new courses to the syllabus. The development team saw this as an opportunity to expand the program's view on project management and to incorporate new ideas as mentioned above. As a consequence a course with a corporate and strategic perspective on project management was introduced. The course was designed to be a sequel to the existing and introductory course in basic project management.

The intention with the new course was twofold. Firstly, it aimed to give the students an understanding of how companies use projects to achieve strategic goals and to prepare them for working in such contexts (Engwall, 2003; Hobday, 2000). To achieve this end, students would be introduced to organizational project management and its concepts, techniques and tools, and to how such practices are established and implemented in various organizations. By changing the focus from individual temporary projects to a company's bundle of projects and their place in the permanent organization, the students would get an understanding that it takes more than delivering projects on time, on budget and in conformity with specifications for the overall project operations of the company to be successful. Secondly, the course aimed to introduce the students to organizational project management as an emerging research field in organization theory. This included, e.g. letting the students read academic articles and analyze the discussed topics, and making the students aware of the researchers' different views on how organizations handle the challenges of a multi-project environment.

This paper presents briefly the theoretical frame on which the above-mentioned course is grounded, the structure and contents of the course, and the pedagogical approach applied. By aligning all course elements, i.e. lectures, readings, writing assignments, class discussions, and case studies, with the learning objectives and the course evaluation criteria we wish to demonstration that it is possible and rewarding to introduce a young and immature field of research such as organizational project management, to students at postgraduate level.

2. Project management education at postgraduate level

That public and private companies in general have become more and more dependent on projects is an often-discussed phenomenon. It has, among other things, resulted in the development of a number of standards defining project processes, project-related processes, bodies of knowledge, and several certification programs for project managers (Blomqvist and Söderholm, 2002). In parallel with the increasing number of projects, there is a corresponding increase of training courses in project management, which are delivered by consultancies and commercial education providers. These courses are mainly addressing professionals who want improve their skills in order to work as project managers. The duration of these courses is often rather short – from one to five days, and they provide opportunities for participating project managers to share experiences and discuss issues of common interest. With the increasing demand for certification (Blomquist and Thomas, 2004) these courses are often aligned with one of the prevailing bodies of knowledge, and focused on preparing the participants for a specific project management certification. The standards have also influenced the contents and structure of textbooks in general project management; see e.g. Maylor (2010) in which every chapter includes a reference to how the subject is treated in some of the most influential standards. What is more, many large companies have developed their own project life-cycle models, and provide internal training for their project managers as a complement to commercial courses. Internal training courses are used to introduce the company's project lifecycle and its phases, decisions, mandatory document templates, and tools. These courses are not only for project managers but also for other internal project stakeholders, such as line managers and functional staff members, who depending on their roles either work in projects or in support of projects, e.g. as project sponsors, resource owners, controllers, or quality coordinators.

When universities include basic project management courses in programs, be it on undergraduate or graduate level, other pedagogical practices than those applied in commercial courses or in-house training must be developed. Most students lack practical experience of working in projects other than through various group assignments in school. Instead of seeing the course as a means for sharing experience and learning from peers, the students focus on delivering the required results and fulfilling examination criteria. Even though the "usefulness" of the education for the students' future work life is considered very important, it is rather difficult for people with no familiarity of working in a multi-project environment, to judge whether a course in organizational project management is relevant.

Blomquist and Wilson (2004) have divided project management courses at universities in the following categories: 0) Introductory courses, often taught as a springboard for a school project performed in various courses; 1) courses dealing with basic project management techniques and tools ("doing things right"); 2) courses dealing with how companies organize, control and support their projects ("doing the right things"); and finally, 3) courses presenting and reviewing research themes in project management. For the basic project management courses (category 1) at Umeå University, Blomquist and Wilson describe learning outcomes ("skills development") in terms of "hard" and technical skills such as "ability to plan", "using Gantt charts" and "hands on use of Microsoft Project" (Blomquist and Wilson, 2004, p 6). Even though they mention that the basic courses frequently cover the "softer sides of projects such as leadership and teams", these areas are not mentioned in the skills development.

Courses of category 2, on "doing the right things", are even more difficult to adapt to the academic environment. The theoretical frame of reference is undeveloped and neither industry nor academia agree on what topics are fundamental and essential, or even on what practices that may be considered "good". According to Blomquist and Wilson (2004) this was a blank spot in the curriculum at Umeå University, meaning that besides the basic project management training, they had only been running courses of category 3, which are devoted to reviewing research topics in project management. When it comes to what learning objectives to set up for the "missing" level, i.e. category 2 courses on multi-project organizations, the suggestions are much vaguer: "appreciation for structure, strategy and operations" and "understanding of complex projects". And so are their suggestions for a educational approach, which they describe in terms of "could be case study" and "maybe field study oriented" (Blomquist and Wilson, 2004, p 6).

2.1. The Master's program International Project Management at Chalmers

The challenges for the team designing the Master's program International Project Management at Chalmers were the same as for the Umeå team. However, the extended and totally revised version of the program was organized so that it would cover all of the above categories; using the project work form in assignments, applying basic project management tools and techniques, becoming familiar with the multi-project environment, and gaining insight into current research. The challenge was to find a balance between training in the traditional, hard skills of project management techniques and methods, while at the same time creating an understanding of the demands on "softer" management skills when dealing with cross-functional, cross-cultural teams, and internal as well as external stakeholders.

To fulfill the requirements in the Bologna declaration, an existing program needed to be extended to a two-year master's program. The program was set up in collaboration between Chalmers University of Technology, Gothenburg, Sweden and Northumbria University in Newcastle, UK, meaning that courses during the first two semesters were to be run at Chalmers, after which the students move to England for their third semester at Northumbria. In the concluding fourth semester the students can choose to do their master's thesis either in England or in Sweden. Thus, the program gives the students the possibility to take a Double Master's Degree.

To fulfill the requirements in the Bologna declaration, the program needed to be extended to a two-year master's program. The program was thus reorganized with the necessary changes, which meant that the first two semesters were to be run at Chalmers, after which the students moved to England for their third semester at Northumbria. In the concluding fourth semester the students can choose to do their master's thesis either in England or in Sweden. Thus, the program gives the students the possibility to take a Double Master's Degree.

Each semester the program is divided in two study periods, with two courses per period. During the first semester four compulsory courses are run, presenting different perspectives on projects and project-oriented organizations. As a common base for all students, a basic course in Project Management with a single project perspective is offered. It uses a generic approach and focuses on managerial aspects, and is, as previously discussed, addressing the question of "doing things right". In parallel, there is a course that takes a people's or behavioural perspective on project management. The course is called Project Psychology and aims at presenting basic theoretical concepts, as well as giving practical examples of the complexity of project management in an international perspective. One important objective is to use the course as a means of building the student group of about 25 or 30 students coming from different parts of the world. Exercises in group dynamics, teamwork, and leadership in multicultural contexts are applied.

The second study period of the first semester includes two concurrent courses of which one is taking a business perspective on projects. The course is called Financial and Management Accounting and gives the students basic insights into management control, cost accounting, capital investment appraisals, budgeting, and financial statements. A main concern is to relate these issues to projects and project-based organisations where the project selection process as well as the control process of selected projects is being scrutinized. In the strife to move the program's focus from singular to multiple projects and from a bottom-up to a top-down view, the second course in the second study period is Organisational Project Management (OPM), which is of primary interest for this paper. It is intended to take an organizational perspective on projects in a project-oriented organizational setting. As previously stated the idea is to tackle the more strategic issues of "doing the right things".

The second semester comprises courses in strategic management, knowledge management and learning, and leadership and communication. At the end of the first year at Chalmers, a synthesis course is given with the theme international projects. This course gathers the students' learning experiences from their course work and creates an opportunity for them to apply their knowledge and skills on cases with an international touch and where some information is available and some has to be replicated or fabricated by the help of informed individuals or by information retrieval, e.g. through the internet.

3. The theoretical base of organizational project management

As discussed previously, it was not obvious which topics to include in the OPM course. According to the Project Management Institute (2008), organizational project management is:

> *"the systematic management of projects, programs, and portfolios in alignment with the achievement of strategic goals. The concept of organizational project management is based on the idea that there is a correlation between an organization's capabilities in project management, program management, and portfolio management, and the organization's effectiveness in implementing strategy."*

Organizational project management as a research area is not yet fully established. There are many practices and tools available for multi-project and project-oriented organizations. Some are still immature and need elaboration; many are questioned and not fully accepted. Many organizations are using concepts either as mimicry of what other companies do, or in forms that are adapted and transformed to local demands. So, for example, a project portfolio management process has been defined by PMI that then has been approved as a standard by the American National Standards Institute (ANSI) (Project Management Institute (2013a). Nevertheless, companies using portfolio management often have developed their own processes. Another example is the concept of project management office (PMO), a supporting unit built up in many companies. As shown by Aubry et al. (2008) and Hobbs (2007), there is no consensus on the name, function, or structure of such units.

It goes without saying that deciding on the content for the new course was not easy. However, based on our practical experience from working with and studying multi-project environments, two very different but complementary books were selected as course literature: Dinsmore and Cooke-Davies (2006) and Maylor (2010). Eventually, we decided to include the following topics (examples of additional texts on each topic are shown in brackets):

- A brief presentation of organization theory as a research area and how it has evolved over the years (Scott and Davis, 2007).
- Projects as temporary organizations (Lundin and Söderholm, 1995; Packendorff, 1995).
- Instruments for organizational learning: process management, competence management, knowledge management, benchmarking, and capability maturity models (Nonaka and Nishiguchi, 2001).
- Project management processes and usage of project life-cycle models (Crawford et al. 2008; Eskerod and Riis, 2009).
- Project manager as a profession and career path, PM certification (Blomquist and Thomas, 2004).
- The function of line managers in project oriented companies (Blomquist and Müller, 2006; Engwall and Söderholm, 2008).
- Project governance processes and roles, e.g. the project sponsor (Dinsmore and Cooke-Davies, 2006).
- Managing multiple projects: Program- and project portfolio management (Engwall and Jerbrant, 2003, Maylor, 2010 and Project Management Institute, 2013a and 2013b).
- The role and formation of a project management office (PMO) (Aubry et al., 2008, Hobbs, 2007).
- Trends in organizational project management, from large infrastructure programs to agile development.

4. The pedagogical approach chosen

As may be seen from the list above, we had the ambition to discuss the topic from a broader perspective than "merely" project, program and portfolio management. The list seems long and sprawling, and we saw an obvious risk that the course would be seen as a Swedish smorgasbord – a lot of different dishes with no or vague connections and no red thread. Another challenge was the students' lack of personal work experiences from multi-project environments.

Due to these preconditions, and the characteristics of the topic, we have divided the course in two tightly interwoven parts: One *theoretical part* in which several different learning techniques were used: Lectures,

assignments with subsequent presentations and discussions, readings of selected academic papers, writing up summaries, and peer reviews.

In the second, *practical part* of the course, the students work in a project that allows them to study how organizational project management theories and practices are applied and made useful in various organizations. The course design team had previous experience from facilitating workshops for assessing organizational project management maturity in multi-project organizations. We perceive maturity assessment as a good way of getting to know a company and its ways of working. A maturity assessment is often carried out as part of a benchmarking process, and it is often used as starting point for organizational development. Since different methods for organizational learning are part the course syllabus, it seemed like a good idea to design the practical part of the course as a maturity assessment/benchmarking project. By dividing the class into small teams, and letting all teams do the same assessment but in different companies, an individual company's results may be benchmarked against the other companies' results. The benchmarking may then be used as an offer to the company – or a bonus for taking up their time – as the students attempt to sell a maturity assessment to the company. Thus, the main delivery of each project is a Feedback Report, which is handed over to the company. The report shows the results from the assessment and an aggregated benchmarking against other companies. The Assessment Project is run as a "proper" project according to a predefined model, and it is closed only after the students have delivered a Final Report (with an evaluation of the project) to the instructors.

The contribution to the learning objectives for the course is based on a combination of the theoretical and practical course elements and their related outcomes, as visualized in Figure 1.

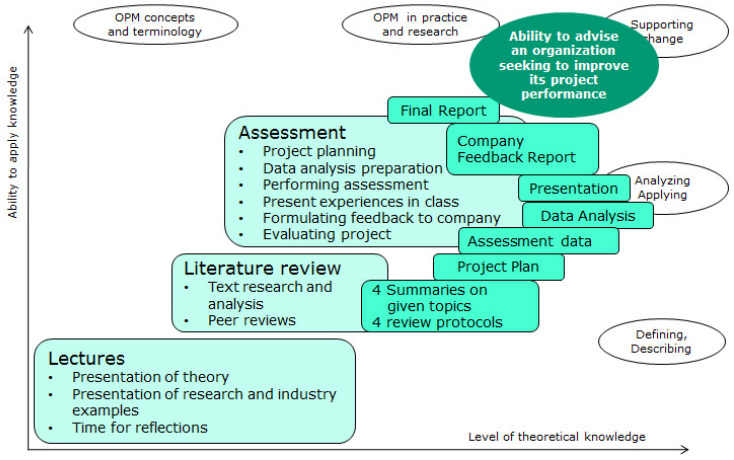

Fig. 1. Overview of the course elements and their contribution to the learning objectives

The increase of theoretical knowledge is shown on the x-axis, while the y-axis represents the level of students' ability to apply theory in a working situation. The lectures and the readings in the course provide the theoretical basis, aiming at acquainting the students with OPM practices, processes and roles. During the preparation for the assessment they have to assimilate the theory, to be able to ask clear and adequately formulated questions in the assessment interview and to be capable of fully comprehending the answers they get. Their learning focus must be on understanding the different assessed elements and their purposes, rather than on terminology and standardized definitions of concepts. In the final stage of the course the students will have to combine the theory with what they have experienced during the interview, summarize the assessment outcome and make suggestions to the interviewee for improvements in the assessed company.

The concluding reflection on the Assessment Project in the Final Report is intended to demonstrate the students' ability to critically look at their own work, on the tools they have used, and on the reliability of the company information they have got.

5. The structure of the course

Having laid the theoretical foundation for organizational project management and determined the course contents and teaching methods, we will now turn to the various course elements in more detail.

5.1. Lectures, articles and peer reviews

The OPM theory is presented in lectures during the four first weeks of the course, presenting the different topics mentioned earlier. Each week the students get a question related to these topics to analyze and discuss in a short paper (about 500 words). Examples of questions given are:

- What are the challenges for organizational learning in project-oriented companies?
- How can organizations benefit from defining common project lifecycle models and using generic PM processes?
- The role of the project sponsor - what is it, and why is it critical?
- How can a PMO support the project-oriented organization?

Input to the writing-tasks is, besides the lecture presentation and relevant chapters in the course books, one or several research articles by authors who sometimes have very different views on the topic. The students are also encouraged to find other sources of information.

We have found that the students' ability to write this type of summaries varies a lot, in spite of the postgraduate level of the program. To make use of this, rather than seeing it as a problem, peer reviews have been introduced, where an hour each week is used for a mandatory review session. The students work in groups of three (with a new group formation each week), starting by reading each other's papers and then having a discussion of each, giving feedback to the author. However, the most important part of the session is to discuss differences in views on the topic of the paper. At each review, the team is making notes to demonstrate what has been discussed, including comments on different perceptions of the given subject. Most students are found to quickly improve their writing skills, partly from applying the instructions given for each assignment, but mainly from reading and reviewing papers written by fellow students who are more advanced and experienced in writing.

5.2. The Assessment Project

As mentioned earlier, the Assessment Project is run as a "proper" project with a defined project life-cycle. It starts with a project charter specifying what is expected from the team and it ends as the Final Report has been handed in to the instructors.

During the preparation and planning of the project, each team will identify a company and a contact person for the assessment. They plan their preparation for the assessment and book a meeting for the interview. For the Assessment Project the students work in pairs, giving the students from outside Sweden a chance to team up with a Swedish student. This makes it easier for the team to contact a local company in the Gothenburg area. For planning the work a commercial project collaboration tool is used which is made available for all students. An important part of the preparation is also to get familiarized with the assessment questionnaire and its questions, which are divided into sections covering different aspects of organizational project management. The topics in the different sections have earlier been addressed in the theoretical part of the course. Thus, by reviewing the questionnaire the students get another opportunity to assimilate the theory.

Since the number of questions in the questionnaire is quite high, the students are encouraged to present each topic as an open question, and to let the interviewee freely talk about the practices applied in the company. During the interview, they write down "evidence" of the company's ways of working, and in the analysis after the interview they rank the given evidence on a scale from 0 to 5, where 5 is defined as the highest degree of maturity. The scale is inspired from capability maturity models such as CMM-I (Software Engineering Institute, 2006). The outcome of the analysis is a set of data, which is transformed by the course leader into graphs presenting each

company's level of maturity per assessed area. The aggregated view of all assessments are shown in the graphs, thus providing input for benchmarking the company result against the result of the other assessed companies. Students that are more advanced and used to handling statistical data, can get access to the entire database (in which all companies are made anonymous for confidentiality reasons) to make more advanced analyses. After the assessment all students present the result and discuss their experiences from their interviews in class, giving them an opportunity to compare "their" company with the others. This session also provides an occasion to critically review the ranking made by the teams.

Finally, the assessment result and the graphs are used as input to the Feedback Report to the company contact, a report that is the main result from the project. The very last deliverable is the individual Final Report in which each student evaluates the questionnaire and its usefulness as an assessment tool, as well as summing up his/her learning experience from the assessment.

5.3. The examination

Our experience from teaching the course is that the students are very focused on making the most out of the assessment and the interviews. When it comes to the examination, we have found that a formal test at the end of the course does not add anything to the students' learning experience. Instead, all deliverables from the different course elements are made mandatory and taken into account when grading the students. A positive result from not having a written examination is that the students' workload is distributed over the entire course, starting from week one with writing a summary and participating in peer reviews, and ending with writing two reports from the Assessment Project. When marking, it is important to strike the balance between team assignments and individual tasks. This is done by means of the individual reflection that has to be submitted as part of the Final Report.

5.4. Yearly revisions based on feed-back from students

The course has now been run for six consecutive rounds. The number of students has varied between 25 and 38. Students have come from all over the world; from Mexico to China, from Iceland to Uganda. Over the years about half of the students have been Swedes, and one-third women. Their educational backgrounds have been construction, IT, architecture, social sciences, etc. As it turned out, some students actually had previous experience from working shorter or longer periods in industry, while some have chosen to apply directly after their bachelor's degree.

Feedback from the students has shown that they consider the learning outcomes of the course as high, and that the course objectives have been achieved. The OPM theory may not be very comprehensive, but they have expressed that they have come to a deeper understanding of the purpose of important concepts and how they are practiced in real life. Many of the foreign students have appreciated the opportunity to learn from working very closely with other students, interviewing people with a managerial position in the investigated company. For many, it has been the first occasion in their education that they have been working like this.

However, there has also been constructive negative feedback. Based on suggestions from the students and the involved teachers, the course has been developed and updated every year. In 2009, there was a central initiative at Chalmers to review and improve a number of selected courses in the university's range. As part of the initiative, which was called constructive alignment (Biggs, 1999), the entire OPM course was revised, and some of the above described course elements were added to the course, or further elaborated. An important part of the constructive alignment initiative was to verify full alignment between the different components of the course, i.e. making sure that there was a clear connection between:

- The stated learning outcomes
- Course literature (Dinsmore and Cooke-Davies, 2006 and Maylor, 2010)
- Course activities
- Students' deliverables
- Examination criteria

Figure 1 was created as part of this verification. It has ever since been presented to the students during the first lecture of the course to make sure that they all fully understand how the different parts of the course are combined to fulfill the learning outcomes, and how assignments and other course components are used in the examination.

Table 1 presents some of the changes that have been introduced over the years:

Table 1. *Changes introduced in the OPM course 2007-2012.*

Learning methods	2007	2008	2009	2010	2011	2012
Presentation of theoretical frame of reference	Lectures Course book Discussions in class	Lectures Course book Discussions in class	Lectures Course book Discussions in class	Lectures Articles Course book Discussions in class	Lectures Articles Course book Discussions in class	Lectures Articles Peer reviews Course book Discussions in class
Means for consolidation of students' knowledge	Development of questionnaire Performing interview	Updating questionnaire Performing interview	Updating questionnaire Performing interview	Writing topic summaries Review of questionnaire Performing interview	Writing topic summaries Peer reviews Review of questionnaire Performing interview	Writing topic summaries Peer reviews Review of questionnaire Performing interview
Project: Deliverable from assessment	Outcome in terms of graded maturity levels	Outcome in terms of graded maturity levels	Outcome in terms of graded maturity levels	Description of practice and graded maturity levels	Description of practice and graded maturity levels	Description of practice and graded maturity levels
Format for feedback report	Suggested content Open structure	Suggested content Open structure	Suggested content Open structure	Suggested headings	Mandatory headings	Mandatory headings
Evaluation of assessment validity and quality	Voluntary	Voluntary	Voluntary	Mandatory	Mandatory	Mandatory

6. Conclusion

To learn from practical experience is not new. Nevertheless, it is hard to find suitable assignments that simulates or imitates real working situations in an eight-week course. However, using a maturity assessment in the OPM course seems to be a fresh idea that meets the learning objectives of the OPM course. Even though the project takes quite a long time, the academic level of the course can be maintained by using the assessment exercise in combination with thorough studies of current academic papers presenting different views on the selected topics.

Teaching organizational project management, which is an evolving research area, requires a pedagogy that is well adapted to the diverging needs of the students. The subject has to be anchored in industry practices as well as in current research. The design of the OPM course has been an attempt to fulfil this need. However, as the research area matures, the course contents and the educational approach need adjustments. The constructive alignment initiative was found to be an effective tool for ensuring alignment between the learning outcomes and the different components of the course.

Lessons learned from the OPM course show that it is possible to combine an academic approach on a subject, with the students' needs to get practical insight into how different practices are applied in industry. By consciously combining certain elements and by applying different means of learning, the students' learning experiences from the course can be very rewarding. An important approach, however, is to use students' feedback in a consistent way, being prepared to adapt and change the course accordingly. A philosophy like constructive alignment is then very useful to ensure that no important objectives or elements in the course get lost during updates.

References

Aubry, M., Hobbs, B. and Thuillier, D., (2008), "Organizational project management: an historical approach to the study of PMOs", International Journal of Project Management, Vol. 26, pp. 38-43.

Bergman, I., Gunnarson, S., and Räisänen, C., (2013), "Decoupling and standardization in the projectification of a company", International Journal of Managing Projects in Business, Vol.6 Iss:1 pp.106 - 128

Biggs, J. (1999), "What the student does: teaching for enhanced learning", Higher Education Research & Development, Vol. 18 No. 1, pp. 57-75.

Blomquist, T. and Müller, R. (2006), Middle Managers in Program and Project Portfolio Management: Practices, Roles and Responsibilities, Project Management Institute, Newton Square, PA, p. 104.

Blomquist, T. and Söderholm, A., J. (2002), "How project management got carried away", in Beyond project management: New perspectives on the temporary – permanent dilemma, Sahlin-Andersson, K. and Söderholm, A. (ed.) Liber, pp. 25-38.

Blomquist, T. and Thomas, J. (2004), "Project manager's perceptions of the motivation for, and benefits, of certification", paper presented at IRNOP VI Conference, Turku, Finland.

Blomquist, T. and Wilson, T., (2004), Managing the multi-project firm: An educational perspective, IRNOP IV Conference, Turku, Finland

Crawford, L., Cooke-Davies, T. and Lechler, T. G., (2008), Project Management Systems: Moving Project Management from an Operational to a Strategic Discipline, PMI Research Conference, Warsaw

Dinsmore, P.C. and Cooke-Davies, T. (2006), The Right Projects Done Right!: From Business Strategy to Successful Project Implementation, Jossey-Bass, San Francisco, CA, p. 303.

Ekstedt, E, Lundin, R. A., Söderholm, A., and Wirdenius, H., (1999), Neo-Industrial Organising: Renewal by Action and Knowledge Formation in a Project-Intensive Economy, Routledge New York, NY, 10001

Engwall, M. (2003), "No project is an island: linking projects to history and context", Research Policy, Vol. 32, pp. 789-808.

Engwall, M. and Jerbrant, A. (2003), "The resource allocation syndrome: the prime challenge of multi-project management?", International Journal of Project Management, Vol. 21 No. 6, pp. 403-9.

Engwall, M. and Söderholm, A. (2008), "Funktionschefer i projektorganiserade företag", in Stjernberg, T., Söderlund, J. and Wikström, E. (eds), Projektliv – villkor för uthållig projektverksamhet (2008), Studentlitteratur, Lund.

Eskerod, P. and Riis, E. (2009), "Value creation by building an intraorganizational common frame of reference concerning project management", Project Management Journal, Vol. 40 No. 3, pp. 6-13.

Hobbs, B. (2007), "The multi-project PMO: a global analysis of the current state", A White Article Prepared for Project Management Institute, Project Management Institute, Newtown Square, PA, p. 44.

Hobday, M. (2000), "The project-based organisation: an ideal form for managing complex products and systems?", Research Policy, Vol. 29, pp. 871-93.

Lundin, R.A. and Söderholm, A. (1995), "A theory of the temporary organization", Scandinavian Journal of Management, Vol. 11 No. 4, pp. 437-55.´

Maylor, H., (2010), Project Management, Fourth Edition, Pearson Education Ltd

Midler, C. (1995), "'Projectification' of the firm, the Renault case", Scandinavian Journal of Management, Vol. 11 No. 4, pp. 363-75.

Morris, P.W.G. (1994), The Management of Projects, Thomas Telford, London

Nonaka, I. and Nishiguchi, T. (2001), Knowledge Emergence: Social, Technical, and Evolutionary Dimensions of Knowledge Creation, Oxford University Press, Oxford, p. 303.

Packendorff, J. (1995), "Inquiring into the temporary organization: new directions for project management research", Scandinavian Journal of Management, Vol. 11 No. 4, pp. 319-33.

Project Management Institute (2008), A Guide to Project Management Body of Knowledge, 4th ed., Project Management Institute, Newtown Square, PA

Project Management Institute (2013a), The Standard for Portfolio Management, 3rd ed., Project Management Institute, Newtown Square, PA

Project Management Institute (2013b), The Standard for Program Management, 2nd ed., Project Management Institute, Newtown Square, PA

Scott, R.W. and Davis, G.F. (2007), Organizations and Organizing: Rational, Natural, and Open System Perspectives, Pearson Education, Upper Saddle River, NJ, p. 452.