



LAUREA
UNIVERSITY OF APPLIED SCIENCES
Together we are stronger



Teija-Kaisa Aholaakko, Kati Komulainen, Arja Majakulma &
Susanna Niinistö-Sivuranta (eds.)

CROSSING BORDERS AND CREATING FUTURE COMPETENCES

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FOREWORD

In the early 2000s, a pedagogical action model titled Learning by Developing (LbD) was developed at Laurea University of Applied Sciences. Within the Laurea community, it evolved into an innovation that supported the development of university of applied sciences pedagogy and received an award from the Finnish Ministry of Education and Culture (2005-2006). Since then, the model has attracted wide interest both nationally and internationally. As a pedagogical action model, LbD integrates research, development and innovation in Laurea's education, reinforcing the regional and societal influence of the institution. In education that implements the LbD action model, phenomena and problems are approached from a research and development oriented viewpoint. The competence of both students and teachers improves when they participate together in various development projects with companies, communities and third sector actors.

As a pedagogical action model, LbD is ideally suited for a higher education institution that focuses on applied research and vocational higher education in collaboration with working life and that, together with companies, public organisations and third sector actors, seeks out and resolves topical and long-term challenges for the benefit of its operating area, working life and society as well as the students. Globalisation and technologisation, including digitalisation and the advancement of robotics, as well as the economic transition associated with these pose a challenge to the competence of future experts and provide an incentive for finding innovative solutions for developing competence. To achieve this, learning environments that are more open and shared are required, and also cooperation not only between higher education institutions but also with secondary level institutions.



The students graduate into a global world where internationalisation will be a natural part of everyone's work. This is why both the learning environments and the learning activities must be international. Digitalisation makes this possible, regardless of time and place. The networks that the students create during their studies will carry them well into their future as new experts. Active working life cooperation and building different entrepreneurship, competence and employer networks while still a student are increasingly important for future professionals, laying a foundation for high-quality employment opportunities and positive career development. Based on these premises, we wish to research and develop further our pedagogical action model (Learning by Developing, LbD) and its implementation in collaboration with working life, the region, universities, universities of applied sciences, secondary level institutions and others, both at the national level and internationally.

Laurea University of Applied Sciences

President and CEO Jouni Koski, PhD

Teija-Kaisa Aholaakko, Kati Komulainen, Arja Majakulma & Susanna Niinistö-Sivuranta

INTRODUCTION

Our world has changed a lot in recent years. Education must change with the times whilst remaining aware of the changing situation in order to develop expertise to tackle future challenges. The new millennium created new needs to build solid bridges between the world of work and higher education providers in order to match skills provision to the needs of enterprises and society (ILO 2010; OECD 2012; Leppo et al. 2013). In European Union demands and visions for multi-professional performance are recognized. By bringing the worlds of education, training, and work closer together it is aimed to develop the right mix of skills and better anticipation of the future skills. In the international statements for the higher education, its' stakeholders have identified future work-life competencies like: ability to interdisciplinary work; digital and entrepreneurial competencies; and co-operative-competences. This means that future employers would be able to operate in complex international systems; adjust to an increasingly rapid pace of change; and exchange ideas and experiences among a wide range of institutions, enterprises and international experts. The ability of know-how-management competencies means that the workers are able to produce performance reviews; enable workers to adjust to the change; and perform skilled work place development according to the co-ordination of government institutions. (Hermans et al. 2009 ; Campbell et al. 2010 ; ILO 2010 ; Barr & Low 2011 ; OECD 2012 ; Leppo et al. 2013.)

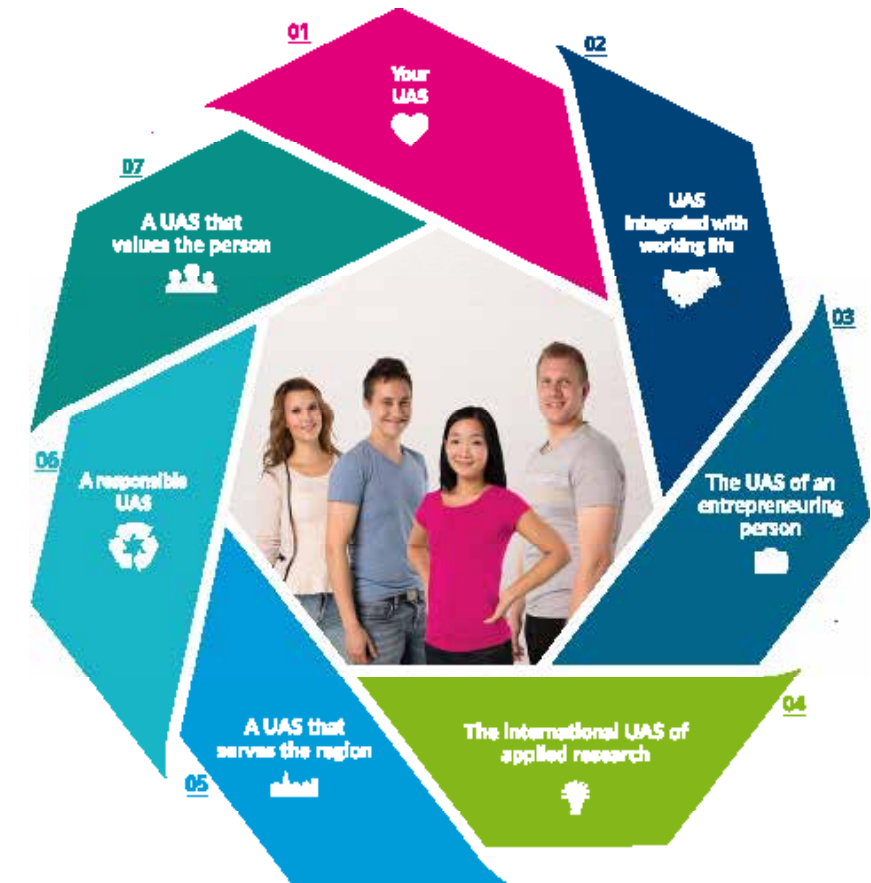


Figure 1. Strategy Laurea 2020

Internationalization and expertise in higher education

Internationalization is an essential and natural element in higher education today. Digitalization has already given us the tools to cross borders between countries without moving students and staff from their own higher education institutions. In fact, the world of education is becoming closer to us all, in terms of participation and visibility, while itself approaching its own core principles, raising the bar. It is not possible to think about development of education and research only within one institution or country, the wider perspective concerning what is happening elsewhere needs to be taken into consideration. Also in Laurea University of Applied Sciences strategy (2015) internationalization is very much emphasized (Figure 1). One of the Laurea's strategic goals is that "the professional experience emerging at Laurea is unique and responds to the needs of international working life. The Learning by Developing action model (LbD) (Figure 2) guarantees connection to working life and joint development" – and at its best, also a connections on international level. Mobility of students and also staff members is an effective and

usual form of international cooperation. Student exchanges and international traineeships provide a valuable opportunity for individual competence development and networking. Staff exchanges provide as well a possibility to look at own work, e.g. teaching, from a different perspective. However, for different reasons, not every student and teacher has a possibility to spend a semester abroad. Some articles in this publication describe projects where students and staff members from different institutions have been able to study and work together without crossing borders, but still together with colleagues from other countries. This kind of international cooperation will hopefully expand in the future.

Another strategic goal of Laurea strategy is that “Laurea’s applied research produces expertise, solutions and new business, promoting future well-being, security and international competitive advantage.” It is important to do research on the development of education, to try new ways of learning and to evaluate new actions. Laurea’s partnership in many projects exemplifies disseminating these ideas. Some of the articles in this publication give us a good picture of how learning and especially research-oriented learning has been developed in our partner institutions abroad and also in cooperation between Laurea and partners. These experiences are valuable to us and also facilitate joint learning in the future – together we are stronger!



Figure 2. Learning by Developing Action Model

LbD challenges learning and teaching in higher education

LbD is an action model that challenges traditional management of learning and teaching (Rauhala 2014). Ethical leadership and leader’s ability to inspire are significant. It means leading culture with strong values, leading with great respect for other people and it means that expectations for a leader are high and that leader should be supportive, open and available when needed. The role could be defined also like administrative enabler who motivates and gives freedom to work and create something new (Ahonen et al. 2014). In Laurea we have shared statements about ethical leadership in our book of ethics: leader is, of course, responsible for reaching Laurea’s shared goals and strategic intent but also for building trust and giving due credit to the person carrying out the task. (Laurea 2012, Ethical guidelines.) LbD model also challenges individual’s and leaders communication skills. Communication is used to create and reconstruct knowledge and understanding in different kind of collaboration. It is the communication that plays significant role in development culture and it is interaction that supports the development of particular identities and relationships within a social activity (Crafton & Kaiser 2011; Niinistö-Sivuranta 2013.) We know that nowadays in working life nearly everyone is part of a team or network.

International partnership and LbD in competence development

It is also clear that the need to produce and apply common knowledge in multidisciplinary and multicultural context continues to grow in working life competence requirements. (Aira 2012; Niinistö-Sivuranta 2013.) So a leader must have ability to create shared meaning and find the way to support collaboration (E.g. Beairsto 2007). There can’t be any kind of privileged voices or tension between collaborators. This is not clear or easy because we have different kind of expectations for that how should leader (or teacher) interact in different kind of learning situations (E.g. Teclehaimanot & Hickman 2011; Niinistö-Sivuranta 2013; Men 2014). In Laurea we have experiences acting in front line when creating generic competences and subject specific competences fostered for example within transnational development project “Atlantis” in a good mutual understanding with our international partners both shores of Atlantic Ocean applying a kind of LbD in learning of project leaders and students (Pop, Hollós, Mészáros, O’Toole, Dahl Maher, Ikonen 2010).

According to Pijl-Zieber et al. (2013) the most problematic areas in the operationalizing of competencies in education are the assessment and measurement of practical competence; generic versus specific competencies; and divergent values among stakeholders. The LbD action model developed in Laurea UAS in cooperation between practical educators, work-life and research (Raij 2000, Raij 2014, Rauhala 2014) serves a pedagogical strategy constructing a contextual framework for the continuum of the education (Kallioinen 2008, Taatila & Raij 2012). The LbD model aims

to develop the student's capacity to respond to the future challenges like advanced level practices and developing of health and wellbeing related equipment as part of their professional work and learning (Hermans et al. 2009; Campbell et al. 2010). Participation into the development projects supports the development of work practices and empowers the student's professional competencies (Kallioinen 2008). The LbD action model has its potential also in improving the impacts of nursing transitions programs on retention and cost savings in the situations where the rapid updating of competences are needed (Hillman & Foster 2011).

Critical evaluation and development of competence based higher education

The development of competence based learning according to competence based curricula requires continuous critical and reflective co-creation between various partners. Establishment of strong cornerstones and use of steady but flexible tools for building professional generic and substance specific competences are crucial both in global and local contexts. Globally the history of co-creating competence based education is longest among nursing education (Meretoja 2003; International Council of Nurses 2009; EU 2013; Eriksson et al. 2015). Locally, in Laurea, the most systematic and studied competence based development has taken place in degree program of business information technology (Pirinen 2013).

According to Pirinen (2013) there were numerous contemporary and future challenges to tackle in the LbD implementation in business information technology studies among bachelor students. For teachers the challenges existed in the continuous change. For the whole LbD society the establishment and implementation of strategic management structure and controlling the mass of projects giving rise to the research and development related education were found important challenges. In the student performance the balancing and modularizing of cognitive load and requirements was challenging. By summarizing the existing LbD-evidence Pirinen suggested that the measurement of competence development, competence outcomes, the performance of multi-stakeholder LbD project processes, and the individual and societal impacts of LbD-oriented learning are important to develop and evaluate within all the professional fields in Laurea. The contemporary challenges in the education at the Universities of Applied Sciences point out to leadership focusing primarily on meeting the needs of future working life. Students usually create tight bonds with workplaces while studying. Committed teachers are encouraging this kind of interaction supporting the professional growth (Meyers 2009; Niinistö-Sivuranta 2013). Supporting teachers motivating students towards independent work was found a challenge for successful outcomes in the early LbD action model implementations (Kallioinen 2011). All the challenges are possible to meet and tackle together, like the articles of this publication will prove!

Crossing borders and creating future competences in higher education

In this publication, the articles discuss the joint development of higher education between Laurea and its partner institutions from a variety of viewpoints. The name of the publication "Crossing borders and creating future competences" indicates the introduction of future oriented learning "Inspired by international higher education partners". Research oriented learning is discussed in Laurea and its partnership higher education institutions in UK located in London and Coventry; in Mexico; in Saxion, Netherlands and in Lithuania. "Learning by Developing crossing borders" also in Switzerland, and in Germany with trusted partner of Laurea in Neubrandenburg. The publication introduces various procedures "Creating future competences" and producing new pedagogical solutions applying LbD Action Model or related approaches.

Different kinds of technological solutions, versatile learning environments and new ways to integrate various actors from different branches into higher education participation are presented. The student role as a learner is also seen manifold, active and developing as a partner more than as a target. In addition, students are now creating their own education together with stakeholders and the community outside higher education institutions. Digitalization and internationalization are truly creating education. Therefore, there will be more diverse times and places to learn. Classrooms may grow to cover the whole world and learning is no longer bound to one time and place. Moreover, learning is becoming more and more personalized and students may have more choice in how they fulfil their learning competencies. Similarly, project based learning in higher education is one path to learn a new profession. Therefore students require more field experience outside the classroom to face new challenges in their working life. On the other hand, there is still a need to improve our basic theoretical background, the importance of managing generic competences will increase in the future. Critical thinking and research and development skills are essential in the world of open evidence. Student ownership of their own studies will rise. More and more they will be in charge forming and implementing their own curricula. In consequence, teachers are still needed, and actually more than ever before. The role of teachers has changed. Contemporarily teachers are more mentors, coaches and tutors than in past.

Enjoy the journey Crossing borders and creating future competences with us!

Teija-Kaisa Aholaakko,
the editor of the publication

and the inspiring publication team:
Susanna Niinistö-Sivuranta
Arja Majakulma
Kati Komulainen

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Gabriela Daniels

LEARNING VIDEOS IN PRACTICE-BASED TEACHING

Abstract

Over the last two decades learning technologies have pervaded all stages of formal education. This study evaluates the effectiveness of specialist instructional videos produced with the intention of offering on-demand instruction and enhanced visual presentation of complex processes in an art and design teaching context. Focus groups with staff and students were conducted with the aim of reviewing and discussing a selection of instructional videos. Student groups were also asked to rate the videos against set criteria. The staff (creators and users) expressed broadly similar intentions for the use of the instructional videos, primarily to enhance visualisation and to aid independent learning. They specifically valued the capacity of instructional videos to support students by reducing the dependency on text-based instruction. The students identified several contexts within which they would view the videos (for example, at home, to prepare a technical file, to review a partly-forgotten technique) and these matched the scenarios anticipated by the creators and users. In summary, with improved contextual content and mindful integration in the overall study programme, the instructional videos can become a more prominent component of student learning. A guide for the production of instructional videos is outlined too. The findings of this case study could be of relevance to science and applied science teaching, for example teaching formulation or demonstrating the action/use of analytical equipment.

Introduction

The advances of digital learning technology over the past couple of decades has driven the need to rapidly develop new pedagogies and the pace of changes continues to accelerate. On-line videos, one of the oldest and most commonly used forms of digital media learning resource, have been a subject of interest and critique by educational practitioners and researchers.

Modern constructivist pedagogy focuses on personal learning based on actively incorporating new knowledge and skills in existing constructs (Duffy and Cunningham, 1996). Thus, on-line videos should ideally be used as an element of interactive learning processes, rather than as a substitute for a human in the traditional teaching model. Professional views and pedagogic research still present a mixed picture of the use and impact of videos on learning, however, their proliferation is a testament to their popularity amongst learners.

The usefulness of videos for instruction and teaching has been supported by cognitive theoretical frameworks, such as Dual Coding Theory (Clark and Paivio, 1991), and further developed into Multimedia Learning Theory by Mayer and Moreno (2007). These theories suggest that learners apply two types of information process systems: verbal (text, auditory narration) and visual (images, actions). Whilst the initial stage of the cognitive process has the brain examine each type of information separately, it is at the final stage where the learner integrates and builds his or her own combined representation. Multimedia resources are particularly effective in supporting learners who are lacking prior subject knowledge.

In a review article on the use of videos in classroom teaching, Karppinen (2005) refers to the framework of image, interactivity and integration which defines the effectiveness of video resources. The author then refers to a range of studies, providing insights into learning gains delivered by the use of videos such as enabling self-directed learning, addressing individual learning needs, providing opportunities for dynamic representations of events, enhancing emotional involvement and motivation.

The use of videos in the flipped classroom model has become common too, where students are given the opportunity to view a video (this could of course be any other resource), and the actual face-to-face session is used for interactive activities, discussions and tests. Sams and Bergman (2013) describe examples of using videos in flipped class chemistry learning and in language learning in high school, suggesting that it enables self-paced and project-based learning.

Several studies, focused mostly on instructional videos or the use of recorded lectures in higher education, report improved training/learning efficiency and/or increased student motivation and enjoyment of the subject (Ellis and Child, 1999; Choi et al., 2005; Whatley and Ahmad, 2007; Teng et al., 2009; Cherrett et al., 2009;

Richardson, 2012), which might have a more pronounced long-term and positive effect on learning than a short-term study can evidence.

This explorative study aimed to identify the most suitable context for using instructional videos and the specific quality aspects of the videos that students, tutors and the creators see as most important. A secondary aim was to outline a good instructional video guide for the tutors and creators. This work builds on preliminary internal investigations which offered the first positive insights into staff and students' attitudes towards the use of media resources in technology-based (fashion) courses.

Study methodology

Three types of instructional videos were selected for this study:

- **A technique instruction video.** The camera continuously focuses on the machine part and relevant work surface. Different angles are used to provide better viewing of the process. The process is explained via a voiced-over script. The video is less than 5 minutes long.
- **A talking head demonstration video of a process.** Some machine and work area close-up shots are included. The demonstrator addresses an imaginary audience. The video is less than 5 minutes long.
- **An expert's demonstration video of a technically complex process.** Partial room view, including small audience and work table are shown. The expert narrates. The video is approximately 8 minutes long.

Focus groups were conducted with academic and technical staff who had created some of the selected instructional videos for their own teaching practice or who were anticipated users of the existing pool of videos, and with professional staff who were involved in the planning, filming and editing of some of the videos.

Each session began with the viewing of a selection of three videos (representing the above three types) and was followed by a semi-structured discussion. The discussions were audio recorded and transcribed. The data was analysed for common themes related to the anticipated pedagogic values and the suitable context for using the videos, as well as any production quality criteria seen by the groups as defining their success.

Student groups (total number of students = 44) were also shown three videos (the most effective representative of each type, as defined by the staff focus groups) and asked to complete a questionnaire which asked them to rate the videos against three production-quality criteria – duration, pace and AV quality (audiovisual quality) – using the Likert scale of 1 to 5, where 1 was the poorest score and 5 the most favourable. The students were also asked to score their intention to view the videos again, using the Likert scale in a similar manner. Following that, the students were asked to discuss the same topics as the instructors and creators.

A paired two-tailed t-test was applied for each quality criterion rating (*duration, pace and AV quality*) against the “likely to view again” rating. The Pearson's Correlation Coefficient (r) for each pair of data was calculated using Microsoft Office Excel and compared with the r (critical) values for the respective degrees of freedom ($n-2$). Where $r > r$ (critical) for $\alpha \leq 0.05\%$, a statistically significant positive correlation was reported.

Instructors' focus groups

Staff had observed that some students were already producing their own recordings of workshops, when permitted, as the use of YouTube videos and the capabilities of smart phones had inspired many to record anything of interest to them.

The instructors saw the visualisation of processes as a key advantage of the videos, as some instructions could not be transcribed in any meaningful way:

The fabric is something – the movement that you can't see in the book. A video, whilst it is still 2D, it starts to make it look 3D. Like learning how to knit from a book. It's very hard to learn from a book, but when you see someone doing it, you can learn from seeing around the front and the back.

Visual learners, or those who are less confident, could use the recording at their own pace, hence the learner's independence and flexibility are enhanced.

It's that thing of dispelling the fear of technique or a process, of “Oh I can't do that”. Like dispelling someone's fear of learning how to sew or drive a car. Of course you can't do it at first; you need to get behind the seat and practice and practice.

Short process videos are perceived to be particularly effective, and most instructors and creators wanted them clear of any visual distractions, for example talking heads videos are too personality-led for such a purpose. Whilst narration was seen as necessary, it should only include briefly providing context, and short and clear instructions. Another key benefit of a process video was that it can allow several viewing angles and close-up shots.

It is a tacit skill ... so for me it was really important that it was close up, clear and shot from different angles.

A good quality learning video is one that is clear ... the student can get concise information about a certain process or skill in a way that they can see the steps one after the other, and it's also quite close up.

Student focus groups

Many students had viewed YouTube videos of related processes but found the ones shown to them in this study more informative. The following advantages of videos over text and drawn instructions were pointed:

It's easier (obviously) to see how it's been made, as opposed to if it's just been written down.

Yes, you always have to see it – visualise it. If the steps are just drawn you don't know how they do it, so it is better to see it.

Most students were likely to view videos at home either for reviewing a process that might not have been fully understood when demonstrated at college or when something had been forgotten. Emphasis was put on the length and focus of the video:

As long as they are a short-and-sweet kind of thing, I will watch them.

Other useful features of the video resources were: being able to pace yourself (viewing can be paused and then resumed), and affording time flexibility and independence.

Then, there are times you forget the simple things, basic stuff, and the videos can remind you of those without the embarrassment of having to ask someone or to ask the tutor.

Mostly, the short videos were perceived as a practical tool. Some students suggested more sophisticated uses, such as using the videos to develop technical files.

Longer videos appealed less; however, students felt that this was due to the complexity of processes which could not be understood and appreciated easily. Some stated that they could see themselves going back to such videos at specific times.

Figure 1 shows the percentage of students who gave a positive rating to each quality aspect of each video (4 or 5). The short technique instruction video received positive ratings in all three criteria from 60–70% of the students. The expert video received 60–70% positive scores in the AV Quality and Pace criteria, but only 50% positive scores for Duration. The talking head video received between 40% and 50% positive responses.

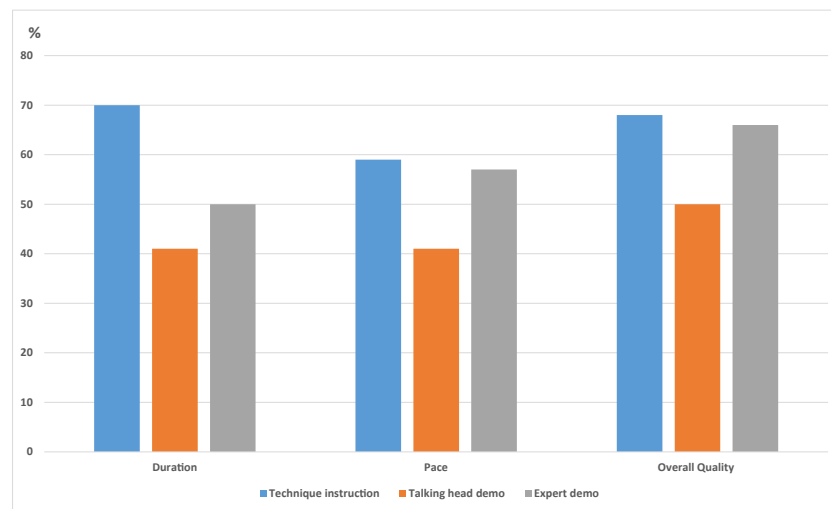


Figure 1. Percentage of positive student ratings given for each quality criteria of each video.

The Duration and Pace ratings of the technique videos and expert videos were correlated with the likeliness to view them again, whilst the AV Quality of the video was not. Hence, where the instructional content is highly relevant, students are more likely to view concise videos again and are less concerned with AV Quality. There were no statistical correlations of values for the talking head video, suggesting that the students were unsure about the overall effectiveness of the video (Table 1).

A “**good instructional video**” guide, based on the study data, is outlined below:

- Include a short key of contextual information
- Include a glossary of terms (at the end)
- Use voice-over with fluent audio presentation
- Audio information should only be related to what is on the screen
- Editing cuts and switching between different filming angles should be minimal.

Table 1. Mean scores and correlation coefficients for the student ratings.

Video: talking head demonstration	Duration	View again	Pace	View again	AV quality	View again
Mean	3.487	2.974	3.513	2.974	3.564	2.974
Observations	39.000	39.000	39.000	39.000	39.000	39.000
P(T≤t) two-tail	0.023		0.011		0.021	
Ho: population means are equal	Y		N		Y	
Correlation coefficient	0.293		0.021		0.392	
Significance level	No correlation		No correlation		0.050	
Video: expert demonstration	Duration	View Again	Pace	View Again	AV quality	View Again
Mean	3.568	3.622	3.622	3.622	4.054	3.622
Observations	37.000	37.000	37.000	37.000	37.000	37.000
P(T≤ t) two-tail	0.790		1.000		0.019	
Ho: population means are equal	N		N		N	
Correlation co-efficient	0.429		0.420		0.248	
Significance level	0.010		0.010		No correlation	
Video: technique instruction	Duration	View again	Pace	View again	Av quality	View again
Mean	4.341	3.886	4.091	3.886	4.227	3.886
Observations	44.000	44.000	44.000	44.000	44.000	44.000
P(T≤t) two-tail	0.017		0.284		0.113	
Ho: population means are equal	N		Y		N	
Correlation co-efficient	0.402		0.336		0.149	
Significance level	0.010		0.050		No correlation	

Conclusion

The development of instructional videos should be guided by the understanding of the user's context and specific anticipated benefits. The staff (creators and users) expressed broadly unified intentions for the use of the instructional videos: to enhance the flexibility of learning and to provide visualisation of 3D processes and to support dyslexic students and/or international students by reducing the dependency on text-based instruction. The students were open to using videos, and duration and pace appeared to be linked to the likeliness to view them again.

In summary, improved contextual content, awareness of the above preferences and tutors' understanding of the principles of multimedia cognitive theory could enhance the impact of videos on the learner's experience.

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This paper details the nature of the research conducted, some findings from the study and problems encountered. Evidence presented for improvements in student engagement and learning resulting from the research will be of relevance to other communities considering innovative ways of improving their master's programmes.

Keywords: Postgraduate Taught Programmes, PGT, master's degrees, Activity Led Learning, ALL, Pedagogy, Engineering education, problem-based learning, PBL, Project-based learning PjBL, Research into Higher Education, critical thinking, deep learning, part-time students, international students, Engineering management.

Irene Glendinning, Phil Lewis & Gill Cooke

IMPLEMENTING ACTIVITY LED LEARNING AT THE MASTER'S LEVEL IN A DIVERSE LEARNING COMMUNITY

Abstract

The success of a whole-faculty approach to implementing Activity Led Learning (ALL) for engineering and computing undergraduate programmes at a UK university has been extended to taught master's programmes.

The move was informed by the results of a research study to determine whether introducing this innovative pedagogy would be appropriate, taking into account the diverse student population; and considering what would be the most effective way to manage the changes. The research, that was conducted in Coventry University's Faculty of Engineering and Computing between January 2012 and April 2013, was supported by a Higher Education Academy Teaching Development Grant.

The study focused on the department of Engineering Management, with a population of almost 500 students enrolled on various postgraduate taught (PGT) programmes. Most full-time students were international and almost all the part-time students were UK-based in full-time employment. The research included interviews and focus groups with students, local companies, employers and teaching staff. Evidence was also captured from analysis of documentary sources, student questionnaires and evaluation of pilot runs for implementing an ALL approach in selected PGT modules.

Introduction

In 2007, Coventry University's Faculty of Engineering and Computing community began developing Activity Led Learning (ALL) for all undergraduate (UG) programmes. ALL is "a pedagogic approach in which the activity is the focal point of the learning experience and the tutor acts as a facilitator" (Wilson Medhurst et al. 2008, 2). This is an inclusive and flexible definition which covers pedagogical practices across a wide range of disciplines within the faculty. ALL includes approaches such as Problem-based learning (PBL), Project-based learning (PjBL) and Learning by Developing (LbD).

By September 2012 the learning experience of undergraduate students had been completely transformed, including the provision of purpose-designed learning spaces. This study in 2012-13 was designed to explore the suitability and benefits of ALL for a diverse postgraduate taught (PGT) student community.

The ALL for Master's Project, funded by a UK Higher Educational Academy Teaching Development Grant, involved almost 400 Engineering Management PGT students, about 20 academic teaching staff and 10 industry representatives.

The objectives were to

- Investigate the views of the academic teaching staff and PGT students about teaching and learning methods;
- Explore practice and outcomes within and outside the faculty where active learning approaches had been applied at master's level;
- Consult with local companies about awareness and understanding of ALL;
- Capture views on active pedagogies regarding enhancing the employability of graduates;
- Develop a framework and models for ALL implementation in PGT programmes;
- Revise, implement and monitor Engineering Management (EM) PGT programmes.

Most objectives were achieved within the project timescale. The paper draws on a case study written about this research project (Glendinning 2014).

Previous research

The researchers' motivation was to improve the learning experience of PGT students. Background research involved both internal and external fact-finding. Starting with a literature survey, the team drew on the experience of UK and international contacts on the implementation of PBL and similar approaches at the master's level.

Ideas for ALL at the undergraduate level had been developed by a working group of faculty staff, in consultation with many universities across the world where similar approaches had been adopted. The working group explored learning spaces, resources, pedagogical approaches, teaching skills and change management. Many institutions were visited in Europe, Canada, Australia and USA to observe and experience initiatives elsewhere.

Teaching teams piloting ALL evaluated the experiences of undergraduate students (for example Booth & White 2008, Davis & Davies 2008, Lambert et al. 2008, Ramachandran & Haas 2010). International acclaim was received in a review of UK engineering project-based learning (PjBL) best practice for taking a whole faculty approach to developing ALL for undergraduates (Graham 2010).

Collaboration with Finnish universities provided information about the implementation of similar pedagogic approaches: MIT's CDIO (Conceive-Design-Implement-Operate) at Metropolia University of Applied Sciences (USA) and Learning by Developing (LbD) from Laurea UAS (Vyakarnam et al. 2008, Quicker Steps Project, Wilson Medhurst & Glendinning 2009).

Research on the attainment of international students adapting to English language study was explored by Magdar and Robinson-Pant (2010) and Bretag (2007), who also found that language deficiencies increased the tendency for student plagiarism (Bretag 2007).

The introduction of ALL for undergraduates in the Engineering and Computing (EC) faculty required changing from a teacher-centred approach to student-centred learning, as advocated in several studies (Lubin 2003, Biggs & Tang 2007, Gibbs 2010). It follows that assessment aligned with challenging learning outcomes should provide evidence that deep learning has occurred. Lublin suggested that in recent years "what the learner does has become more important than what the teacher does" (Lublin 2003, 2). Gibbs referred to "educational gain" as a useful indicator of successful learning, measured through relative rather than absolute attainment levels. He identified a range of influential factors including group work (Gibbs 2010) for improving attainment: individual attainment levels depended on ability of the highest achieving student in a group (ibid, 18).

As with most other research, Gibbs' study concerned undergraduate students, but his findings, particularly regarding student diversity, also have relevance for ALL for Master's. Individual students brought different strengths and expertise that could be utilised to the advantage of the wider cohort when applied in the context of collaborative learning. Gibbs also identified other important factors including quality of teaching, feedback received and the learning environment (ibid 19).

A longitudinal study by two of the authors for their module Management of Quality, led to the publication of several papers, each presenting successive results (Cooke et al. 2011, Cooke & Lewis 2012, Lewis & Cooke 2012, Cooke et al. 2014, Lewis et al. 2014). Interim findings of ALL for Master's were published in September 2012 (Glendinning & Michalska 2012).

Methodology

The initial research questions, focused on exploring the nature of the PGT experience and the diverse profile of the student community, drove decisions on what approaches were appropriate. A mixed methods approach was selected to take advantage of routinely collected quantitative data about modules offered within the faculty supplemented by semi-structured interviews allowing unanticipated ideas and viewpoints to be explored in depth.

Survey participants included

- Representatives from local companies
- Academic teaching staff
- Full-time and part-time students
- Undergraduate students
- Management staff
- Academic staff from the university and elsewhere in the UK and in Europe

Teaching staff were asked about their current pedagogic approach. An audit of teaching and assessment methods across all EM PGT modules took place. Students' views of ALL approaches in PGT modules were explored through bespoke questionnaires designed by the ALL for Master's team regarding Research Methods (RM) and Management of Quality (MoQ).

The MoQ questionnaire was run for each separate cohort during a seminar. Some cohorts were surveyed twice to compare their "before and after" views. The RM survey was completed by 58 of 189 students outside class time.

All research complied with requirements for ethical approval and standards. A distinctive factor of the data collection was that trained students were employed to conduct interviews and focus groups with PGT students, to encourage participants to be open and honest about their learning experience.

The selection of student participants was opportunistic, with part-time students nominated by tutors and full-time students self-nominating after an invitation to participate. Almost all the academic staff teaching PGT modules were interviewed about their views of implementing ALL for PGT programmes.

The analysis of the results depended on the type of survey and data collected. The use of open questions in the student questionnaires, backed by interviews and focus groups, provided rich information from several different viewpoints. Where longitudinal studies had been conducted it was possible to explore trends and draw conclusions about the evolution of the learning and teaching approach over time. Thematic analysis was used for qualitative data allowing comparison across the different cohorts of a module.

Standard end-of-module questionnaires provided useful information about students' perceptions and allowed comparisons across different modules taken by the same cohort, typically comparing ALL delivery with "chalk and talk" approaches.

Results

Data was collected from a range of students, by questionnaires and by interview. Semi-structured interviews were conducted with 12 academic staff from EM and three local employers. Academic staff from elsewhere were also interviewed to capture examples of good practice.

EM staff provided information about teaching and assessment methods at the PGT level and suggested ALL could be introduced at that level. The majority of the modules had varied assessments for each separate cohort, but a few lecturers continued to set the same assessment topic used for many years for every cohort, increasing the potential for plagiarism and sharing of work.

Innovative approaches in other master's modules and whole programmes were evaluated through surveys, focus groups and interviews. One integrative programme, *MSc in Air Transport Strategy and Management*, was of particular interest as an example of a successful holistic design with a novel delivery structure, involving role play and simulations of actual air traffic incidents.

The following challenges were identified for consideration when revising the PGT framework and delivery format:

- Diversity of students' backgrounds and previous employment and education experience
- Poor language skills of some international students
- Long-distance commuters taking specialist programmes
- Managing group-working both for part-time students in full-time employment and full-time international students

- Encouraging academic integrity and discouraging plagiarism
- Several PGT starting points in the year
- Setting assessments that reward and measure deep learning
- Instilling competence and confidence for lecturers to deliver in non-traditional style
- Operational complexities of introducing integrative learning.

PGT students expressed interest in pedagogy and the impact of different learning approaches, but it emerged that very few tutors discussed their pedagogic strategies or explained ALL to PGT students. Some tutors were unclear about the definition of ALL.

Relevant experiences of ALL during PGT study included preparations for lectures, case studies and self-learning; for example "learned theory and had an activity – magazine – to put this into practice"; "took on different roles in an activity ... after theory had been taught"; giving presentations on written work - "some colleagues disliked it, but I was initiated about research, yes a very good thing".

International students gave positive responses, comparing ALL favourably with earlier experiences:

"This is a good experience being here, because it is a very diverse environment"
"The facilities and the teachers in here are very good"
"... compared to the Indian studies or ... Dubai, it is much better over here";
"It has been nice ... kind of different from what I was used to back home and I am trying to cope with it and I think is a better way of learning".

One student experienced "some difficulties in the teaching style" compared to their previous experience.

International students expressed support for integrative and practical learning and clearly articulated specific advantages, for example "Compared to the Chinese teaching, they are just teaching you theory, but here ... they also make links to the industry ... and we need connect theory with case studies and practical applications". However one student believed that "theory is better than practical".

Student respondents found ALL to be an effective way to learn. But there was support for traditional lecturing in some modules, for example one lecturer provided "a big set of notes, more structured" where students were "able to look back". Interviewees were very positive about including ALL in integrative activities: "you have to bring different things together - they affect each other".

Several respondents identified added complexities of group-work: for part-time students "finding time to communicate [at a distance] does not work"; an important issue raised by a full-time international student's research was that in group-based assessments less productive students can benefit from the efforts of stronger students (echoing findings of Underwood 2003 p. 321, Livingstone and Lynch 2000 p. 219, Rafferty 2013 p. 629).

When asked for perceptions of employers' views of ALL in PGT programmes, responses included: "You'd first need to explain what it was" and employers would need to be convinced that "the level of rigour and understanding is still there". Full-time respondents saw advantages to companies of employing students who have studied using active learning. An alternative view was that companies "will prefer the student from a theoretical background. When you learn just theory it will make you understand the whole subject area".

Semi-structured interviews were held with 3 managers from local companies and a presentation to an industrial advisory group about the ALL for Master's project captured members' feedback about views on ALL. Key points from the feedback are summarised here.

The managers' own study experiences directly influence which institution they recommend to employees, particularly where companies sponsor study and where university modules can be included in company training schemes.

The importance for graduates to acquire soft skills was raised by all contributors, "interpersonal skills, communications, writing, presenting, confidence in a business environment, IT proficiency, team-working, project planning, broad knowledge about business and manufacturing and commercial awareness" (Glendinning 2014). Three of the employers had encountered the term ALL previously through their connections with the faculty. The synergy was clear between the aims of an ALL approach and their requirements for development of broad-based transferable skills to complement subject expertise.

To summarise, the feedback from diverse respondents encourages selective introduction of ALL, and integrating activities for PGT students studying part-time was also supported. There are clear messages about managing group-work and fitting the pedagogy to the subject being taught. When promoting ALL as a unique selling point in student recruitment, subject rigour and educational outcomes are key factors in marketing messages aimed at individuals and companies.

Discussion

The wide range of input from different sources in this study provided strong evidence to support changes to pedagogical practices for PGT students. Didactic approaches were challenged through this research, countering the belief by some lecturers that ALL would not be accepted by the (largely international) full-time cohort or the (largely UK-based) part-time student cohort. The assumption that most PGT students preferred a passive learning approach, with copious printed lecture notes, was overturned by the research.

The popularity of PGT programmes that include substantial ALL content demonstrates that students from diverse student backgrounds and cultures can adapt their

learning styles and benefit greatly from an ALL experience. However, normally a UK taught master's programme takes just one calendar year. In line with findings from research elsewhere (Magdar & Robinson-Pant 2010, Robinson-Pant 2009, Bretag 2007), although most international students cope with the differences that UK study demands and most pass their master's degree, the attainment of many full-time students would be significantly enhanced if they were able to study over a slightly longer timeframe, with provision of additional support for areas of initial weakness, particularly the English language.

A small minority of respondents expressed a preference for theoretical content and assessment by examinations, but most students appeared to be open to and interested in new ideas for improving learning and study. However, ALL is not just about employability: active learning increases the potential for deep and sustained attainment (Lublin 2003, Biggs & Tang 2007), which will benefit all students whatever their future career plans.

As Gibbs (2010) concluded, the highest achiever influenced the outcomes of the whole group and group working was a key skill for employers. Although the operation and assessment of group work was seen as challenging by both students and academics, effective team selection methods can make a huge difference to PGT student attainment. Integrative ALL activities in PGT programmes, within other departments (including Davis and Davies 2008, Iqbal et al 2014, Lambert et al 2008), provide confidence that this approach could be successfully applied more widely.

The literature, particularly the work of Gibbs (2010), Lublin (2003) and Entwistle et al. (2004) provide some evidence for how we can encourage critical thinking and measure "educational gain" in students' learning. These sources also help to validate the use of ALL and similar approaches as vehicles for delivering deep and sustained learning.

Little evidence of active learning approaches at the PGT level was found in the course of the research conducted externally by Coventry University, suggesting that ALL could be of wider benefit. However, the feedback from this study confirms that more needs to be done to ensure that the advantages of active learning approaches are more generally understood.

Conclusions

This paper presented a small proportion of the extensive results collected for the ALL for Master's project. The faculty is continuing to support and extend the delivery of ALL in undergraduate and PGT programmes.

In recent years in the UK the focus of innovative changes within higher education has been directed towards enhancing the undergraduate student experience. It is encouraging that some consideration is at last being given to improving the experience of

postgraduate students. There appears to be good support from those interviewed for using ALL at the master's level. The reasons given by students advocating more ALL and some integration of subjects are in accord with the advice from employers and companies consulted.

A small minority of students and academic staff will not be convinced, at the outset at least, that ALL is a good way to study and learn. It is anticipated that other institutions may learn from and build on the experience and findings from the ALL for Master's project to enhance their own PGT programmes.

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Marco Ferruzca

SOCIAL SERVICE FOSTERS RESEARCH-ORIENTED LEARNING

Abstract

In Mexico, social service is a mandatory activity performed by undergraduate students as a requisite for graduation. According to national regulations, the social service is managed by higher education institutions. Through social service (also understood as a service-learning experience), students can apply the knowledge they have acquired to produce a benefit to both society and the state. Social service should be oriented to solving relevant social problems about health, housing, social re-adaptation, immigration, technological development, education etcetera. For higher education institutions, this practice can be embedded in other academic activities like teaching, research and the preservation of culture. An example of a research project supported by social service activities is presented by the author in order to reflect how this particular service-learning experience can foster research-oriented learning. More efforts to analyse this possible relationship are needed. This material will be interesting for people studying different ways to approach this particular mode of learning.

Keywords: social service, research-oriented learning, service-learning, community service

Introduction

As the title of this document advocates, the aim of this manuscript is to suggest that social service – understood as a service-learning (SEL) experience – can foster research-oriented learning (ROL). According to the German Ministry for Education, ROL is a concept of learning which adopts critical thinking and problem-oriented, creative and autonomous work. ROL connects research and teaching (Center for key competences and research-oriented learning, 2006-2016). Students expand their knowledge, become familiar with research, increase their network of contacts for future collaborations, work with others disciplines and strengthen their professional identity (Ruhr-Universität Bochum, 2016).

Social service in Mexican institutions of higher education is a mandatory activity for students' graduation. Through it, they can improve their education, receive professional training and produce a benefit to society and the state. The aim of social service is to contribute to solving relevant social problems, as we will describe hereafter. According to Furco (1994), schools have tried to create learning experiences so students can engage in social issues for communities through service. He identified three types of service programme: community service, SEL and service-based internship programmes. The modalities can be characterized depending on the amount of emphasis on service and learning, the intended beneficiary, the intended educational purpose, integration in curricula and the nature of service activity. For the purpose of this paper, the author only describes the SEL type of programme because it is closest related to social service practice.

In SEL, there are two beneficiaries: the recipient and the provider. Its primary focus is to strengthen service and learning activities. It is based in academic and civic collaboration. It is integrated in curricula and is based on academic discipline.

This is the background for the author presenting the case of social service in Mexican HEIs as a medium for fostering ROL. In this paper, an overview of the concept of social service is introduced. Then, specifications of the social service practice in a public university in Mexico City are reviewed. An example of a recent research project with embedded social services activities is offered in order to draft some ideas about why this SEL experience can be useful for encouraging ROL too.

Finally, this work will be interesting for people in gaining knowledge about the SEL experience based on cases from abroad.

The concept of social service

The history of social service can be traced to the first decade of the past century when Justo Sierra, one of the most important actors of Mexican modern history, emphasized that higher education should pay attention to social needs and thus teaching and research should contribute to national development (Robles Barcena,

Celis Barragan, Navarrete Garcia, Rossi, Gilardi Gonzalez, & Barragan Perez, 2012). Later on, the idea of institutionalizing social service and making it a mandatory activity was strengthened during the 1920s. The aim was to create social awareness in undergraduate students. In the mean time, there were some efforts to try to establish social service legislation (García Ancira, Castillo Elizondo, & Salinas Reyna, 2016).

Finally, in November 1942, Article 5 of the Mexican constitution was modified, establishing the mandatory character of social service. According to both this article and Article 52, in its regulatory law, social service in Mexican HEIs is understood as a theoretical and practical set of mandatory temporary activities performed by students as a prerequisite for their professional graduation which contributes to their education in the interests of society and the state (ANUIES, 2012).

After this legislation, a lot of effort has been put into improving social service in Mexico, and it has been subject to discussion by important educational organizations in the country. One of them is ANUIES (a Spanish acronym to denominate the National Association of Universities and Higher Education Institutes), a non-governmental organization founded in 1950 which represents the interests of private and public HEIs. It serves as a communication platform with the government.

For ANUIES, social service impacts on social development. It is a key instrument for supporting higher education's advance, which also provides elements for planning and orienting teaching and research according to social challenges (ANUIES, 1989). HEI's have to create the organizational structure to manage social service. In this way, HEIs can play the role of the catalysers of social change while at the same time gaining social recognition.

Frequently, social service work is understood as a professional practice, however it is different because the latter is more oriented towards supporting the development of students in their professional field. Social service work is more concerned with social challenges and thus it demands more commitment. It has a duration of 480 hours, which can be distributed in over six months.

One of the current challenges of social service is improving the undergraduate students' vision about it so that they would not understand it as merely a mandatory activity but also as an opportunity to establish a true compromise with society which can lead to establishing collaboration among students, faculty, community, productive sectors and so on (Cano Castellanos, 2004).

The United Nations states that social service is an essential medium for fostering the development of nations. The United Nations Educational, Scientific and Cultural Organization, (1998) encourage the view that social service can increase the common wellbeing of society by eradicating poverty, intolerance, violence, environmental changes, health problems etc.

Some of the problems in achieving the objectives of social service have been documented in several studies (Ruíz Méndez, 2011; ANUIES, 2012; Navarrete Ramírez, Barrera Bustillo, & Martín Pavón, 2010; Ledesma, Mungaray, & Ocegueda, 2008):

- Not all HEIs have created the organizational structure demanded by a service activity.
- There is a lack of social services programmes, created by the government.
- There is a lack of resources provided by the government.
- There is a lack of social values in younger generations.
- Social service activities are without social projection and are not related to students' profession.

Social service at universidad autonoma metropolitana

Background

The Universidad Autónoma Metropolitana (UAM) is a Mexican public university created in 1973 with the aim of attending to the demand of students in the metropolitan area of Mexico City to enrol in a HEI.

The UAM is aware of being at the service of society and thus it has oriented teaching, research and the dissemination of culture towards solving problems that affect large sectors of society. It fosters joining professional training with innovative forms of social service that put students in touch with national needs (Universidad Autónoma Metropolitana, 2016).

In relation to social service regulation at the UAM, there are some institutional policies which establish that it should be incorporated to programmes and curricula, research projects and cultural activities (Universidad Autónoma Metropolitana, 2015).

In this context, teachers must create and advise about social service activities because it is part of the function that they are expected to do beyond teaching, researching and preserving culture.

There is a rich history of social service activity at the UAM since its foundation, and maybe one of the most interesting things to underline was the creation of Social Service Regional Centres that were located in three different cities to promote projects and activities with several communities which required the support of the university. However, for several reasons they disappeared (Angulo Alvarez, Avila Sandoval, Cardenas Valdez, & Zepeda Tiburcio, 2006). Nowadays, social service at the UAM has some challenges to solve but, even so, there are very interesting social services initiatives which reflect the spirit of social responsibility and commitment to society. For example:

- PIDEСТИ (an interdisciplinary programme to foster sustainability in the Tuxtlas and Ixucán de los Reyes in Veracruz). This programme has several impacts regarding environment management, education management, knowledge management and social participation. PIDEСТИ integrates research with SEL and the connection of the UAM with communities in Veracruz. The aim is to improve the environmental and socio-economical conditions of different regions in the state of Veracruz. This project is lead by professor Irma Juárez González and it has received the support of different actors: the Government of Veracruz, the Secretariat of Environment, Natural Resources and Fisheries, the United Nations Educational, Scientific and Cultural Organization (UNESCO) and several communities (Observatorio Mexicano de Responsabilidad Social Universitaria, 2014).

A descriptive case of a social service project at the UAM

For the purpose of this paper, an example of a recent research project where the author collaborated with other peers will be shortly described. The aim is to present some ideas about how the social service practice embedded in research activities can contribute to helping students experience research in their early academic preparation and enhance their learning.

The UTU-UAM project

In order to promote cooperation between Mexico and Uruguay, both governments signed an agreement in 2009 to finance projects oriented to developing common areas identified as priorities, for example social development, agricultural development, science, technology and innovation. Selected projects had to bring direct benefits to the population through good practices and knowledge transfer between the entities involved.

The case presented here is based on the cooperation project “Design, technology and innovation: exchange UTU-UAM” (UTU-UAM) developed in 2014 jointly by the UAM and the Universidad del Trabajo del Uruguay (UTU), located in Montevideo (Ferruzca & Martínez, 2014). The general objective of the project was to develop cooperative ties between the two countries through human capacity development and knowledge sharing to strengthen the institutions’ capacity building regarding teaching, research, the preservation and dissemination of culture, and the promotion of entrepreneurship. In particular, the project aimed to exchange design knowledge in order to foster innovation by developing new products based on Uruguayan gems (agate and amethyst).

Gems in Uruguay are mostly sold abroad with low or no added value. They are concentrated mainly in the city of Artigas, in the north of Uruguay. The stone industry and the design of new products in Artigas are reduced. The Uruguayan gems-based handcrafts market is limited and do not take advantage of design knowledge.



Artigas experiences some social challenges, most of the young people go to live to Montevideo for better opportunities. There are no HEIs there. In this context, in 2013 the UTU design department incorporated design in their education programme, considering that it can be useful to improve crafts education through producing students capable of fostering design-driven innovation.

One of the first educational projects launched by the UTU was the three-year technical education programme, Programme in Gem Products (PGP). The main objective of this programme is to prepare graduates with a high capacity to develop innovative gems products and to create new business and new jobs. Additionally, a recent arrangement with a professional design school in Uruguay will allow students to complement their education with a fourth year of studies and obtain a professional degree.

The above explanation has been necessary because one of the emerging challenges was the need to sensitize different actors (craftsmen, community, miners etc.) about the potential of design and to strengthen the education programme, the PGP.

For the UAM, participating in a project like this represents the opportunity to a) share its experience about design research and teaching, and b) collaborate with the UTU in solving a specific social problem, which can also be found in Mexico. Besides, the cooperation between both universities fosters the mobility of students and staff. The UTU and UAM organized several activities to improve the education experience of both institutions, to offer a SEL experience to the community and to foster the incorporation of design as a tool to add value to gem products. These activities can be characterized as an effort to provide a community service to address the above issues and academic learning (Furco, 1994). The activities consisted of presenting workshops, seminars and fieldwork. The contents were about design methodologies, design thinking, innovation and creativity, and about gem technology. This initiative has been registered as a research project lead by a group of teachers at the UAM.



The SEL experience in practice

A bi-cultural design team – composed of sixteen teachers and students from Mexico and Uruguay – was set up to launch the project. In the case of Mexico, the teachers and students were members of the School of Sciences & Arts for Design at the UAM, housed at Campus Azcapotzalco, while the rest of the team members were:

- teachers in the design department at the UTU
- teachers and students from the PGP technical education programme offered by the Schools of Arts & Crafts “Pedro Figari” in Artigas and in Montevideo
- teachers and students from the EUCD (University School Design Centre) in Montevideo.

Within the team, in the beginning there were only two students from the graphic design programme at the UAM doing their social service. Later, three more students from the same programme were included. Three students from Uruguay also participated in the main team.

Additionally, other organizations supported the project: the Innovation and Design Promoting Council in Jalisco, the Ministry of Education and Culture in Montevideo, and the School of Design (ISDI) in la Habana. The economical resources for the project were directly managed by the United Nations Development Programme through the AMEXCID (the Mexican Agency for International Development Cooperation) and the AUC (the Uruguayan International Cooperation Agency).

The main SEL experience was held in Artigas. Later on, some activities were also developed in Guadalajara (Mexico) and la Habana (Cuba) with different craftsmen communities (which face similar problems but with different crafts materials). Table 1 presents more details about the SEL activities.



Table 2. Details from the SEL experience

LOCATION	BENEFICIARIES	PROFILE	CONCERNED IMPACT	STUDENTS ROLE DOING THEIR SOCIAL SERVICE
ARTIGAS	50	STUDENTS FROM PGP DESIGN STUDENTS FROM THE OTHER PARTICIPANT INSTITUTIONS CRAFTSMEN THE COMMUNITY	MOBILITY EDUCATION TRAINING SOCIAL RESPONSIBILITY AWARENESS	PARTICIPATION IN WORKSHOPS AND SEMINARS LEADING THE COMMUNICATION ASPECTS OF THE PROJECT (IMAGES, DOCUMENTS, VIDEO & WEB COMMUNICATION)
GUADALAJARA	35	CRAFTSMEN FROM DESIGN AND CRAFT INNOVATION CENTRE.	TRAINING MOBILITY SOCIAL RESPONSIBILITY AWARENESS	LEADING THE COMMUNICATION ASPECTS OF THE PROJECT (IMAGES, DOCUMENTS, VIDEO & WEB COMMUNICATION)
LA HABANA	15	DESIGN STUDENTS CRAFTSMEN SPECIALIZED IN CERAMICS	EDUCATION TRAINING MOBILITY	PARTICIPATION IN WORKSHOPS AND SEMINARS LEADING THE COMMUNICATION ASPECTS OF THE PROJECT (IMAGES, DOCUMENTS, VIDEO & WEB COMMUNICATION)

A description of the outputs and outcomes

Based on previous work (Ferruzca Navarro & Martinez Mota, 2016), some ideas about the outputs and outcomes generated through this SEL experience are presented in table 2. The six dimensions proposed by Navarrete, Barrera, and Martín Pavón (2010) to measure social service quality have been adapted to make this reflection.

Table 2. The outputs and outcomes of the SEL experience

DIMENSION	OUTPUT	OUTCOME
SOCIAL RESPONSIBILITY (UNDERSTOOD AS THE STUDENT'S COMMITMENT TO SOCIETY)	<p>IMPROVED CAPACITY BUILDING AT THE SCHOOLS OF ARTS & CRAFTS "PEDRO FIGARI" AND COLLABORATION WITH CRAFTSMEN TO DESIGN NEW PRODUCTS.</p> <p>IMPROVED AWARENESS OF SOCIAL SERVICE BENEFITS. STUDENTS EXPERIENCED THE SOCIAL SIDE OF LEARNING.</p> <p>RESEARCH GROUPS PROMOTED SEL EXPERIENCES.</p>	<p>NEW OPPORTUNITIES TO INCREASE THE NUMBER OF STUDENTS PARTICIPATING IN THE PROJECT.</p> <p>NEW POSSIBILITIES TO LAUNCH SEL EXPERIENCES IN LATIN AMERICA.</p> <p>MORE EXPERIENCE OF EMBEDDING SOCIAL SERVICE IN ROL.</p> <p>THE UAM AND UTU INCREASE THEIR COMMITMENT TO SUPPORTING SOCIAL NEEDS.</p>
PROFESSIONAL ORIENTATION (THE RELATIONSHIP BETWEEN STUDENTS' KNOWLEDGE AND THE DEVELOPED ACTIVITIES)	<p>STUDENTS IN THE SOCIAL SERVICE PROGRAMME APPLIED THEIR KNOWLEDGE OF GRAPHIC DESIGN TO CREATE VISUAL ELEMENTS FOR THE PROJECT.</p> <p>THROUGH COLLABORATING DIRECTLY WITH COMMUNITIES, STUDENTS HAD A BETTER UNDERSTANDING OF DESIGN'S CAPACITIES.</p> <p>STUDENTS HAVE A BETTER UNDERSTANDING OF RESEARCH BECAUSE THEY PARTICIPATED IN THE WHOLE PROCESS.</p>	<p>THE STUDENTS BECOME BETTER PROFESSIONALS. STUDENTS ARE MORE INTERESTED IN RESEARCH ACTIVITIES.</p>
PROJECT CONGRUENCE AND SUPERVISION (THE MATCH BETWEEN THE PROJECT'S AIM AND THE DEVELOPED ACTIVITIES)	<p>THE PROPOSED PLAN FOR THE PROJECT WAS RESPECTED. PERIODICAL REPORTS WERE SENT TO THE AMEXCID AND AUCI SO THAT PROGRESS COULD BE MONITORED.</p>	<p>NEW OPPORTUNITIES FOR FUNDING BECAUSE OF GOOD PERFORMANCE.</p>

DIMENSION	OUTPUT	OUTCOME
PROJECT PERFORMANCE (CRITERIA FOR MEASURING STUDENT ACTIVITIES DURING SOCIAL SERVICE)	<p>THE MATERIALS ELABORATED ON BY THE STUDENTS AND THERE IS A GENERAL ASSESSMENT OF THE PROJECT.</p>	<p>A SET OF INSTRUMENTS TO ASSESS THE SEL EXPERIENCE.</p>
PROJECT BENEFICIARIES (BENEFICIARIES OF THE SOCIAL SERVICE)	<p>115 PERSONS DIRECTLY BENEFITTED IN THREE COMMUNITIES. ALSO, MORE THAN 100 PERSONS PARTICIPATED IN DIFFUSION ACTIVITIES.</p> <p>THE PARTICIPANTS BETTER UNDERSTAND THE ROLE OF HEIS AS CATALYSERS OF SOCIAL CHANGE.</p>	<p>MORE TEACHERS ARE INVOLVED IN SOCIAL SERVICE ACTIVITIES WITH A REAL IMPACT ON SOCIETY.</p> <p>MORE RESOURCES ARE PROVIDED FOR HEIS TO FOSTER SOCIAL CHANGE.</p>
PROJECT RESULTS (THE IMPACT OF THE PROJECT ON BENEFICIARIES' NEEDS)	<p>THE EDUCATION PROJECT FOR ARTIGAS, CONDUCTED BY THE UTU, ACHIEVED ITS INSTITUTIONAL GOALS.</p> <p>THE PROJECT OPENED NEW POSSIBILITIES FOR COLLABORATING WITH OTHER RESEARCH GROUPS IN LATIN AMERICA: IN COLOMBIA, ECUADOR AND CUBA.</p> <p>A NEW PROJECT WAS DEVELOPED TO IMPLEMENT A DESIGN-DRIVEN INNOVATION PROGRAMME FOR SUSTAINABLE DEVELOPMENT IN LATIN AMERICA.</p> <p>STUDENTS, TEACHERS, DESIGNERS, CRAFTSMEN AND THE COMMUNITY WORKED COLLABORATIVELY TO CREATE NEW CONCEPTS OF PRODUCTS AND SERVICES. THEY MADE A CONSENSUS ON THE BEST SOLUTIONS.</p> <p>THIRTEEN PROTOTYPES OF NEW PRODUCTS WERE DEVELOPED. CRAFTSMEN FROM ARTIGAS, GUADALAJARA AND LA HABANA HAVE A BETTER UNDERSTANDING OF HOW DESIGN CAN IMPROVE THEIR WORK.</p> <p>THE ACADEMIC MOBILITY OF TEACHERS AND STUDENTS WAS PROMOTED.</p> <p>SCIENTIFIC PAPERS AND POSTERS WERE USED TO DIFFUSE THE RESEARCH RESULTS.</p>	<p>MORE STUDENTS GRADUATED IN ARTIGAS.</p> <p>PERMANENT MOBILITY BETWEEN LATIN AMERICAN COUNTRIES.</p> <p>THE WIDESPREAD USE OF DESIGN KNOWLEDGE BY SOCIETY.</p> <p>THE INTERNATIONALIZATION OF UNIVERSITIES.</p> <p>PERMANENT INTERNATIONAL RESEARCH COLLABORATION.</p>

Analysis

The UTU-UAM project started around June 2014 and its implementation in January 2015. A team was configured to develop the project. The project was registered as a research activity following criteria established at the UAM. Also, a social service plan was presented for approval. The operation of the project included a lot of people writing the proposal, organizing the activities, doing the administrative work required to have everything in order, and incorporating students interested in participating in this SEL experience and thus achieving their social service requirement.

Students played an important role in managing the communication part of the project. Teachers provided support if needed. Students and teachers from the UAM had a stay in Uruguay in summer 2015. Instead of concentrating the activities in Montevideo, most of them took place in Artigas, a city with a population of 70,000 inhabitants. People from Montevideo travelled to Artigas to participate.

The activities were open to the community, so craftsmen and citizens were part of it too. It was a period of intensive work, SEL and cultural exchange. A survey was conducted to assess the perceptions of participants and the results were very positive.

After the intervention in Uruguay, a group of teachers from Uruguay went to Mexico. Some workshops, seminars, conferences and meetings were organized. One of the

most significant experiences was the workshop developed in Guadalajara. The Innovation and Design Promotion Council in Jalisco managed processing all the administrative permissions required to deploy the workshops with craftsmen in the Design and Craft Innovation Centre, located in the municipality of Tlaquepaque. Craftsmen applied their knowledge and added some design concepts to create new concepts of personal accessories which will later become on products for sale. New students from the UAM enrolled in the social service plan to support the project.

The possibility to exchange knowledge between designers and craftsmen was very enriching for both parties. For the UTU and UAM it also represented the opportunity to strengthen cooperation between both universities. The teachers experienced mobility, shared their knowledge, learnt from everyone involved, produced academic outputs, improved their teaching skills and, overall, they contributed to solving social challenges. Because of the good results disseminated in different events, there was an invitation to organize a workshop in la Habana.

Findings

This paper has introduced the idea that social service practice in Mexico, understood as SEL, could be a medium for experiencing ROL. Firstly, the paper shortly presented the underlying concepts of ROL and SEL as a background to establish the relationship with the concept of social service. In the second section, the paper examined the social service perspective within the Mexican context. Furthermore, the practical nature of social service at the UAM, a public university, was also briefly reviewed. An example of a research project – provided to reflect how the social service embedded in this activity seems to be connected with the idea of ROL – was presented.

The outputs and outcomes of the above research project suggest that by embedding this kind of SEL experience in research projects, undergraduate students can become familiar with the natural process of research. Students – whether doing their social service or not – could apply their acquired knowledge to attending to an important part of a project: the communication aspects. Likewise, through active learning, all the participants learned more about design and collaboratively explored a problem in order to find solutions (new products).

From an institutional point of view, the experience also strengthened the capacity building of universities to connect with society, share their knowledge and learn from it.

Conclusions

Social service in Mexico is an important way of practicing social responsibility. ROL can be cultivated in multiple ways; social service could be an alternative way to achieve it.



To elaborate, this paper was an interesting exercise in thinking because there is a need to deepen the concepts of ROL and SEL and think how they can be applied together to improve the learning experience with a sense of social responsibility.

In order to explore this relationship between the above two concepts, social service practice in Mexico was considered. A recent research project was used as a scaffold to build some ideas on the subject. The perceived outputs and outcomes suggest a positive impact of social service in ROL.

Finally, this reflection was conducted in order to consider the need for more research in the future in order to know how the SEL paradigm is developed in other countries and if it is connected to research experiences. Good practices could be identified. Also, more evidence and more research efforts provided by different disciplines are needed.

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Miriam Losse & Roel Nahuis

PROFESSIONAL PRODUCTS AS CURRICULAR BACKBONE: A MODEL FOR CONTEXTUALIZING RESEARCH ABILITIES IN HIGHER EDUCATION

Abstract

A dynamic knowledge society requires reflective professionals who are able to apply and create knowledge in order to improve and innovate professional practices. Therefore, universities of applied sciences in the Netherlands have been assigned the task of integrating problem-oriented research into professional education. In 2014, Saxion University of Applied Sciences set up an institution-wide action research project to understand the meaning and position of research abilities in curricula and to develop a heuristic model to improve curricula. This contribution explains the foundation and application of the model. The starting point is that professional products – analysis, advice, design, fabricated products, actions – can function as boundary objects between the worlds of work and teaching. Professional products provide the contexts in which students must learn to employ research abilities. The integration model visualizes how the decomposition of professional products into partial products further specifies these contexts and how research abilities have to fit in the realization of products. The model supports individual bachelor's programmes in redesigning parts of their four-year curricula. The applications of the model are illustrated by four examples of curriculum redesign. The examples show the model's range of uses: contextualizing the training of research abilities, explicating research abilities required for particular products, coordinating the development of a learning pathway and developing assessment criteria.

Introduction

Labour market conditions are changing. The skills and knowledge required for professional work are evolving in accordance with the knowledge content of production processes and services. This means that there is an increasing need for a highly educated, innovative and adaptive labour force (Bologna 1999, ILO 2010). Against this background, Dutch universities of applied sciences (UASs) have been assigned the task of conducting and teaching problem-oriented research in addition to professional education (OCW 2001).

Saxion is a UAS in the eastern part of the Netherlands that strives for the integration of research abilities in a way that fits the focus and identity of professional education. In professional education, research is not an end in itself. It is a means to equip students to perform as reflective professionals who are able to apply and create knowledge in order to improve and innovate professional practices (HBO-Raad 2009). Accordingly, a broad definition of research abilities is adopted, comprising 1. the possession of an inquisitive attitude, 2. the ability to apply existing knowledge and outcome of research and 3. the ability to conduct an inquiry or research (Andriessen 2014).

In 2014, Saxion decided to engage all programmes in a collective learning process. The process was set up as an action research in order to understand the meaning and position of research abilities in curricula, aiming at a heuristic model to improve curricula. A community of stakeholders followed a number of theoretical and empirical activity cycles (Routio 2005; Nahuis, Losse & Bouten, 2016). This paper reports the cycle in which the model is elaborated and applied.

The starting point is that professional products, in other words the deliverables of professional practice, can function as boundary objects between the worlds of work and teaching. This starting point allows us to make three claims: first, professional products provide the contexts in which students must learn to employ research abilities. Second, the decomposition of professional products into partial products further specifies these contexts and shows where and how research abilities have to fit in the realization of deliverables. These claims provide the foundations for the integration model. The third claim is that the model supports individual bachelor's programmes in redesigning parts of their four-year curricula. The applications of the model are illustrated by four examples of curriculum redesign.

The contextualisation of research abilities

Saxion wants to bear professionals that integrate relevant research abilities in the context of their future work. Therefore, curricular contextualization is needed to integrate the contexts of real professional issues into pedagogical practice (Fernandes, Leite, Mouraz & Figueiredo 2012). Boundaries between the context of professional work and the educational context can be crossed by boundary objects

(Konkola et al. 2007; Star & Griesemer 1989). We introduce professional products as relevant boundary objects to establish curricular contextualization, because they embody the real-life and concrete processes in which a professional elaborates his deliverables (Losse 2016, Zitter et al. 2012). Professional products are key in contextualizing the relevant research abilities and are supportive in integrating research abilities into a curriculum.

A study of the different professional profiles of educations in a wide range of higher education courses has listed numerous products and skills connected to the deliverables in the daily occupational practice of the future professionals of Saxion: experiments, legal advice, crisis management, building plans, procedures, software, care, teaching, controlling etc. (Nahuis, Losse & Bouten 2016. Based on qualitative labelling, the following five types of professional products can be distinguished (Losse 2016):

- **Analysis:** Analysis as a final professional product, as well as an intermediate product, to develop one of the four other professional products. For example, a cost calculation, requirement analysis, chemical-analysis, population description, legal analysis, evaluation.
- **Advice:** Interventions and measures in order to solve a problem or improve a particular situation. For example, policy measures, legal advice, recommended treatment, communication advice, organizational interventions.
- **Design:** The elaboration of a new process, tool or artefact in order to fulfil a need. For example business plans, software architecture, building plans, interior design, flowcharts, templates, programmes.
- **Manufactured products:** The realization of a design into a functional physical or digital product. For example, software, journalistic productions, artwork, sensors, industrial products, laboratory installations.
- **Action:** The realization of a design or advice in professional behaviour towards the client, customer, audience or pupils. For example, nursing, artistic performances, teaching, negotiation, coaching, facilitation, medical treatment.

Professional products are elaborated in an iterative process in which decisions are made by stakeholders. The development of professional products becomes visible with the decomposition of that process into intermediate deliverables (Forsberg, Mooz & Cotterman 2005). Figure 1 shows general decompositions of the five types of professional products. Conducting an analysis typically comprises a problem's definition followed by the analysis itself (the first row). Advice is created in a process of defining the question, diagnosis and solution scenarios (the second row). A design is established in a more iterative process in which requirements and design drafts feed each other towards an increasingly concrete design (the third row). For

manufactured goods, various tests (like usability trials) are involved (the fourth row). Action typically comprises several analyses for the design of an action plan, the action itself and its evaluation and follow-up (the fifth row). The necessary intermediate products and the number of required iterations depend on the specific final product to be delivered.

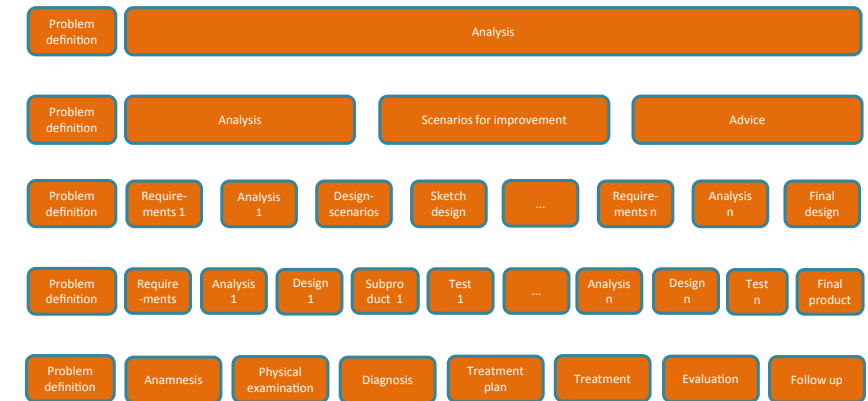


Figure 1. Examples of decompositions of different professional products

This knowledge is also profitable in educational settings. Decomposition allows students to break a process into chunks of manageable functions and this significantly serves the quality of the deliverables (Hui Hui & Umar 2012). Figure 2 shows that each specific decomposed process offers the context for positioning research abilities in a specific project, which results in a model with 1. a process of practice – a creative process in which the deliverables are elaborated and decisions are made and 2. a process of deepening in which research abilities are put into practice. Depending on the type of knowledge needed, the deepening process can cover the following: exploring existing knowledge and adding new contextual knowledge through research and reflection on the process of practice. The interaction between the practice and deepening processes results in (partial) products that are based on knowledge resources and reflective decision making. This is not solitary work but a process with stakeholders, like customers, clients, lecturers, researchers and fellow students. This process can take place either in an external work setting or in an educational setting in which

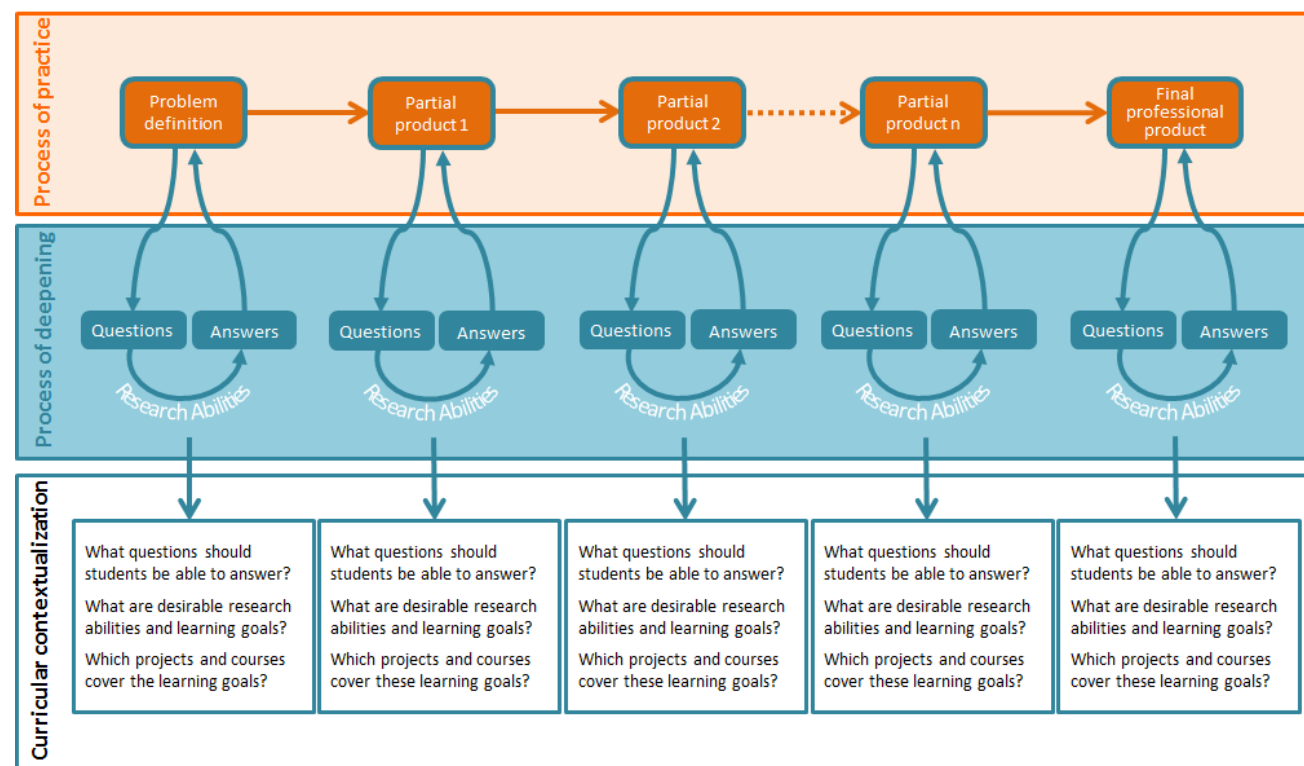


Figure 2. Two integrated processes to define inquiry skills

Four applications of the integration model

The aim of Saxion’s action research project was to improve the integration of research abilities in curricula. Representatives of all programmes were asked to apply the integration model to redesign a course, project or learning pathway together with stakeholders and experts. Thirty-nine different bachelor’s programmes participated, which yielded a variety of good practices. This section describes the revenues of four different applications (for details see Table 1).

In a physical modelling course of the Physical Engineering programme, the integration model was used to formulate concrete questions for students. The model stimulates a decomposed course design in which students find out things for themselves which they were previously told by the lecturer. The course thus becomes more a site for training an inquisitive attitude and knowledge application skills. Because students work on logically connected partial products, the tasks they have to fulfil are both doable and contextualized.

An analysis project in the Public Administration programme shows how decomposition highlights the need for demand articulation as the first partial product. Because a project in this programme is typically a collaboration with stakeholders in

Table 1. Revenues of application of the Integration Model in four examples

COURSE - YEAR - EDUCATION	PROFESSIONAL PRODUCT	REVENUES
SIMULATION MODELS INTRO YEAR 2, PHYSICAL ENGINEERING	SIMULATION MODEL	<ul style="list-style-type: none"> CLARIFYING VISUAL OF THE PRODUCT DECOMPOSITION ARTICULATION OF RELEVANT RESEARCH ABILITIES STRONGER CONTEXTUAL TRAINING STRONGER EMPHASIS ON EXPLORATIVE SKILLS AND INQUISITIVE ATTITUDE
URBAN LAB PROJECTS YEAR 3 & 4, PUBLIC ADMINISTRATION	POLICY ANALYSIS	<ul style="list-style-type: none"> CLARIFYING VISUAL OF THE PRODUCT DECOMPOSITION ARTICULATION OF RELEVANT RESEARCH ABILITIES CONTEXTUALIZATION OF POLICY ANALYSIS EXPLICIT FOCUS ON CLIENTS PROBLEM DEFINITION
LEARNING PATHWAY POLICY WORK YEAR 2 & 3, SOCIAL WORK	IMPLEMENTATION PLAN	<ul style="list-style-type: none"> CLARIFYING VISUAL OF THE PRODUCT DECOMPOSITION ARTICULATION OF RELEVANT RESEARCH ABILITIES COHERENT DESCRIPTION OF DESIRABLE COURSE CONTENT COORDINATION TEMPLATE FOR COURSE DESIGNERS
FINAL THESIS YEAR 4, INTERIOR DESIGN & STYLING	INTERIOR DESIGN	<ul style="list-style-type: none"> ARTICULATION OF RELEVANT RESEARCH ABILITIES EXPLICIT CONNECTION OF DESIGN PRODUCTS TO RESEARCH ABILITIES SET OF QUALITY CRITERIA FOR EACH DESIGN DELIVERABLE SET OF QUALITY CRITERIA FOR RESEARCH ABILITIES ASSESSMENT MODEL

an urban lab setting, a real client is the person asking. To address the client’s questions and the problem definition, students should employ an open and critical attitude, and also interview the client, collect data about existing and new policies, and interpret the results. This case clearly shows that a single partial product already assumes a little research of its own.

In the redesign of a series of courses on policy work in the second year of the Social Work programme, the integration model is applied at the level of a learning pathway.

The model works as a coordination template for the course designers and lecturers of several courses. They can align the desired content of their courses and avoid blind spots. For students, the model gives a clear picture of the interrelatedness of contents and contexts of the subsequent courses.

Applied at the graduation phase of the Interior Design Styling programme, the model enables the formulation of items and detailed criteria to assess both final and partial products. Partial products are assessed in order to give students feedback on the design process. The employment of research abilities is explicitly assessed when using criteria like ‘the consultation of relevant stakeholders, experts and sources’ or ‘the vision is sufficiently based on observations and analyses’.

Educational design from the perspective of a professional context appears to open up new opportunities to integrate research abilities in the curriculum. The four cases show that the integration model functions as a heuristic for different curricular applications in which professional products are the backbone for contextualization.

Conclusion

UASs in the Netherlands face the challenge of integrating research abilities in curricula in a way that fits the focus and identity of professional education. During the last two years Saxion UAS has developed a learning community around an action research project in which the educational courses of all domains (technology, economics, law, health and education) participate. In a joint process we have developed 1. a typology of professional products, for example advice, plans, design, realized product and 2. a model that connects the deliverables of professional practice to the necessary level of evidence, argumentation or reflection. The model visualizes the decomposition of professional products into partial products, for example problem definition, diagnosis and scenarios as partial products in the process of developing advice. The model shows where and how research abilities, as part of a process of deepening, have to fit in the realization of deliverables as a process of practice.

The integration model is applied in four cases of curricular redesign. Comparison shows that the model can be applied with different emphases: an emphasis on contextualizing the training of research abilities, an emphasis on explicating the research abilities required for particular partial products, an emphasis on coordinating the development of a learning pathway and an emphasis on the development of assessment criteria. In all cases the model provided a heuristic framework to design a curriculum that enables students to acquire the relevant research abilities in conjunction with the necessary other skills and knowledge to develop professional products. The interaction between the processes of practice and deepening thus prevents curricula from becoming two-sided and gives a logical context to students, professionals and educational auditors.

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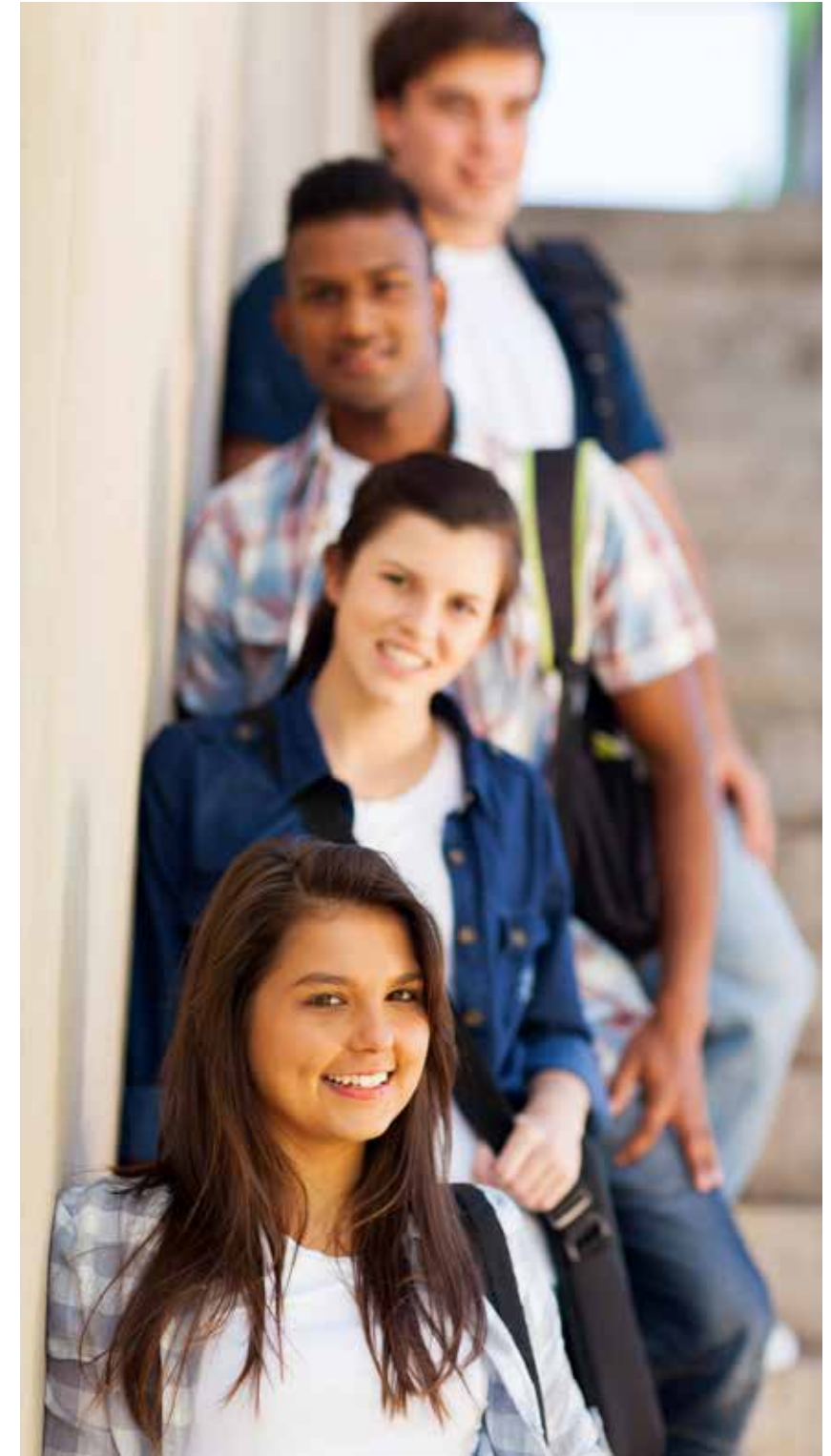
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EDUCATION AND BUSINESS THROUGH PROJECT-BASED LEARNING: A COLLEGE CASE DESCRIPTION

Abstract

The growing popularity of the project-based learning paradigm, used as an active, student-centric methodology, is related to extended opportunities in terms of knowledge attainment and facilitating the acquisition of several transversal competences such as teamwork, searching for and selecting information, and synthesis and analysis abilities.

Therefore in this paper, as a case description, the authors present experiences implementing project-based learning and identify aspects that give both students and teachers the drive to involve all parties in the learning process. Also, a discussion of the innovativeness of using project-based learning in the college study curricula is presented, leaving an open space for further considerations and possible explorations of the effectiveness of using this approach in learning and teaching.

The keywords: knowledge-based cooperation, networking, and project-based learning.

Introduction

Project-based learning (PBL) is defined as ‘a teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to a complex question, problem, or challenge’.ⁱ To many scholars PBL is seen as a model, a philosophy of teaching and learning rather than as another educational strategy (Thomas, 2000; Markham, 2012; Bell, 2014; Mapes et al., 2009). Putting it in other words, PBL is a model that organizes learning around projects. According to the definitions found in PBL handbooks for teachers, projects are complex tasks, based on challenging questions or problems that involve all the participants of a study process in design, problem-solving, decision making, or investigative activities; they give students the opportunity to work relatively autonomously over extended periods of time; and they culminate in realistic products or presentations (Thomas et al., 2000). While other defining features found in the literature include authentic content, authentic assessment, teacher facilitation (but not direction), explicit educational goals (Moursund, 1999), cooperative learning, reflection and incorporation of adult skills (Diehl, Grobe, Lopez & Cabral, 1999, cited in Thomas, 2000). Thus, according to Thomas et al. (2000), we may identify some of main driving factors that enable all parties of the education process to be extremely engaged within explorative activities in various fields of studies: i) PBL projects are focused on questions or problems that ‘drive’ students to encounter (and struggle with) the central concepts and principles of a discipline; ii) projects involve students in a constructive investigation; iii) projects are student-driven to some significant degree; and iv) projects are realistic, not school-like.

The implementation of the PBL concept addresses the European Higher Education Area (EHEA) call that urges students to be engaged in more autonomous work. The self-regulated educational process is seen as an effective pathway to involve digital-age learners and engage them in real-time problem solving through creative thinking. PBL is approached as a managed process, managed through projects that comprise a set of complex tasks, based on challenging questions or problems, investigative activities and decision making, resulting in the creation of realistic and meaningful outputs, and their presentations (Thomas, 2000; Arce et al., 2013; Mapes, 2009).

The main goal is to present and describe the PBL process and its implementation at Vilnius Business College (VBC), Lithuania.

Papers’ design and methods are mainly derived from the theoretical analysis and research of Thomas (2000) and Lidón, Rebollar and Møller (2011) on PBL models and content. The authors have chosen to analyse, interpret and summarise the educational findings on PBL’s advantages and the difficulties arising from the implementation of this method in various learning contexts and environments, and the issue of the readiness of both students and teachers.

ⁱ *Why Project Based Learning (PBL)? Interactive:* <http://www.bie.org/> [accessed 10/10/2016].

Regarding research ethics, there are a number of key phrases that describe the system of ethical protection that the contemporary social research establishment has created to try to better protect the rights of research participants and the whole environment (Trochim, 2006).ⁱⁱ Thus one of the main principles in this case description is informed consent, which means that the college academic community that is involved in PBL is fully informed about the procedures and the report, and all its members gave their consent to participate.

Concerning research reliability, the academic staff of the college who participate in PBL activities always follow with both feedback and achievements' measurement procedures as reliability, like research validity, requires that quality measurement procedures are always kept in mind (Lund Research Ltd, 2012).ⁱⁱⁱ

A brief description of the PBL model

Viewing learning from a holistic approach, PBL enables creating an integrated multilayer context composed of elements from pure educational content and activities, the practical experience of learners, and knowledge-led cooperation arising from the networking of research and educational organisations and business companies. In this way the organised and managed learning-teaching continuous process produces a qualitatively new learning environment, which ultimately not only enhances overall educational capacities and address the 21st century demands of the business world and education but also puts into practice the culture of the learning organisation (Lidón, Rebollar & Møller, 2011).

These characteristics, as Thomas (2000) stresses, can include the topic, the tasks and the roles that students play; the context within which the work of the project is carried out; the collaborators who work with students on the project; the products that are produced; the audience for the project's products; or the criteria by which the products or performances are judged. In short, PBL incorporates real-life challenges where the focus is on authentic (not simulated) problems or questions and where solutions have the potential to be implemented. In addition, along with Thomas (2000), we state that PBL incorporates three possible paradigms based on the following aspects: i) postsecondary models of "problem-based" learning; and ii) university-based research on cognition and cognitive science applications. All these components are mainly achieved and assessed by participating in real-life settings but also, in some cases, in simulative contexts. Through this model PBL incorporates and bridges educational institutions with business corporations, and integrates students into the paradigm that goes from "theory to practice" and the other way around.

ⁱⁱ More at: <http://www.socialresearchmethods.net/kb/ethics.php> [accessed 11/07/2016].

ⁱⁱⁱ More at: <http://dissertation.laerd.com/reliability-in-research.php> [accessed 22/05/2016].

Why PBL?

The main objectives of the method include increased students' motivation; the training of valuable skills, such as the planning and organisation of the research-based learning process that will build a strong foundation for their future in a global economy; encouraging creative thinking and social skills.

According to Bell (2014), a student-driven and teacher-facilitated approach to the learning rests on such core pillars as:

- Question-driven learning for building knowledge
- Student choice-based research under the teacher's supervision
- Collaborative work and communication
- Authentic projects focused on finding solutions to real-world problems

Projects as enablers combining all the mentioned aspects are seen as one of the major parts of the curriculum. Through projects learners encounter and get familiar with central concepts of the discipline. Students are encouraged to think out of the box, investigating a problem-related environment through open-ended questions. They must craft diverse activities in teams and individually. Projects support an interdisciplinary approach. They allow building connections between various themes and topics embracing two or more disciplines. Also, the projects enable to extensively exercise technological skills.

The uniqueness of the PBL not only offers greater flexibility to students but also transforms teachers' roles. In the case of PBL, teachers undertake a role of facilitators who can overcome the boundaries and limitations of traditional classes. The method empowers academicians to apply various tools, combining them in a way to boost the interest and motivation of students. On the other hand, it fosters a collaborative culture between teachers, calling on them to share knowledge and pool resources and overcome professional "silos", geographical boundaries and time zones. Admittedly, for teachers who are less familiar with a technology-rich environment, 21st century project-based teaching can be a challenge.

As Boss and Krauss (2007) admit, the implementation of PBL turns teachers in lifelong learners. They are forced to conduct more research or seek out advice from business representatives. Designing projects requires long hours of planning. Also, PBL asks teachers to rethink and redesign students' assessment methods in order to reflect multiple grades and achievements resulting from doing projects.

How it works at VBC

PBL implementation was initiated under a strategic decision taken by VBC back in 2013. It was decided that PBL was going to be implemented through a consistent approach while integrating this approach into study curricula. Later in this chapter

the authors will briefly describe PBL's strategic decisions' implementation phases and experiences at VBC:

1. **The decision.** The managerial decision was made by the VBC administration and teaching staff representatives based on the good practice of Finland (Laurea University of Applied Sciences). The gained good experience allowed the merging of other (Dutch and Polish) experiences and the creation of a vision of how we would like to see the implementation of PBL at VBC. ^{iv}
2. **Preparation.** During the preparation phase some organisational changes to study were foreseen. The goal was to involve the business sector (i.e. social partners) in the study process more actively. Thus the Centre of Project Activities and Competencies was established at VBC. In 2014, methodical material (PBL methodology) was prepared. At the same time information about new study methods was disseminated among social partners and students.
3. **The integration of PBL into study curricula.** In order to integrate PBL, the Programme Committee revised the existing study programmes at VBC. Eventually, the committee decided to move some of the programmes to the modular structure of curricula; this decision allowed PBL to become a part of study process in each semester. It was decided that in social science programmes at least three projects will be carried out, each of which will be faced with different outcomes in terms of complexity. It was also decided to implement PBL in the Hospitality and Events programme as a pilot approach.
4. **Business sector involvement.** It has to be stressed that this was one of the toughest stages as the business sector expected students to understand the whole task's content and the amount of assignments did not meet the European Credit Transfer and Accumulation System's (ECTS) values. The implementation of PBL requires a lot of effort in order to show the business sector that this is a learning process, not a free labour force created especially for commercial purposes.
5. **The preparation of teaching staff.** At this stage VBC prepared and organised original training courses for lecturers in order for the PBL approach to be successfully implemented. The aim of this was to shape rather strong teaching unity and an administrative core as well.
6. **The implementation of PBL, process monitoring and students' conferences.** At this stage, the biggest challenge has been a constant process of monitoring both student mentoring and the processes in administrative terms. As a project evaluation, the final students' conference was set every year at the end of the autumn semester.
7. **PBL is a part of all VBC study programmes and a permanent PBL process of implementing improvements.**

Presenting this scheme more visually, there is a table where we may see how PBL implementation works in the real study process during the autumn semester of the 2015–2016 academic year – Study Programme: Hospitality and Events' Management (table 1).

^{iv} www.laurea.fi/en/

Table 1. PBL implementation within the study process at VBC: 2015–2016

NO	ACTIVITIES	PARTICIPATING ACADEMIC STAFF	DUE DATE	EXPECTED RESULT
1.	SETTING THE TEAMS' AGREEMENT AND THE PROJECT'S PLAN	THE SUPERVISOR OF THE PBL METHOD'S IMPLEMENTATION	1ST WEEK: 25.09.15	A SIGNED AGREEMENT AND THE PROJECTION OF THE QUESTIONNAIRE INSTRUMENT
2.	PREPARING THE RESEARCH PLAN AND SURVEY SCENARIOS	THE SUPERVISOR OF THE PBL METHOD'S IMPLEMENTATION	2ND WEEK: 02.10.15	THE RESEARCH PLAN AND SCHEDULE, AND A DESCRIPTION OF SURVEY SCENARIOS (UP TO 500 WORDS)
3.	CONDUCTING THE SURVEY	MARKETING SPECIALISTS AND TEACHERS OF PSYCHOLOGY AND SOCIOLOGY ARE CONSULTED	3RD WEEK: 09.10.15	THE PRESENTATION OF THE DRAFT OF THE FIRST RESEARCH RESULTS: FILES, DATA SHEETS, CODES, MATRIX ETC.
4.	CONDUCTING THE SURVEY	MARKETING SPECIALISTS AND TEACHERS OF PSYCHOLOGY ARE CONSULTED	4TH WEEK: 16.10.15	THE PRESENTATION OF THE DRAFT OF THE FIRST RESEARCH RESULTS: FILES, DATA SHEETS, CODES, MATRIX ETC.
5.	CREATING THE MAP OF THE CLIENT'S EXPERIENCES AND THE MATRIX BASED ON RESEARCH DATA	THE SUPERVISOR OF THE PBL METHOD'S IMPLEMENTATION; TEACHERS OF PROJECT MANAGEMENT	5TH WEEK: 23.10.16	THE MAP OF CLIENT'S EXPERIENCES
6.	PREPARING THE DESCRIPTION OF THE PROJECT	THE SUPERVISOR OF THE PBL METHOD'S IMPLEMENTATION; TEACHERS OF PROJECT MANAGEMENT	6TH WEEK: 30.10.16	THE PROJECT'S DESCRIPTION (UP TO 1.500 WORDS)
7.	REFLECTIONS AND SIMULATION OF THE PROJECT'S DEFENCE	TEACHERS OF PROJECT MANAGEMENT AND SOCIOLOGY	7TH WEEK: 06.11.16	REFLECTION – SELF-ANALYSIS (UP TO 500 WORDS)
8.	THE FINAL VERSION OF THE FULL PROJECT DESCRIPTION, INCLUDING ALL THE NECESSARY ANNEXES	TEACHERS OF PROJECT MANAGEMENT	8TH WEEK: 13.11.16	THE PROJECT'S DESCRIPTION (UP TO 2.000 WORDS)
9.	SUGGESTIONS FOR SOME AMENDMENTS OF THE PROJECT	TEACHERS OF PROJECT MANAGEMENT	9TH WEEK: 20.11.16	SUGGESTIONS FOR SOME AMENDMENTS OF THE PROJECT
10.	PUBLIC DEFENCE OF THE PROJECT	ACADEMIC STAFF OF VBC AND BUSINESS PARTNERS	10TH WEEK: 27.11.16	PRESENTATION OF THE PROJECT – 'TO ORGANIZE THE INTERNATIONAL EVENT' (MULTIMEDIA, CD ETC.)

Summing up the experiences and good practices at VBC, it can be stated that the benefits of implementing PBL are definitely abundant for students, lectures, administration and the business sector (it is even obvious through students' employability rates, which are extremely high at the moment). However, as theoretical and practical training design implementation has shown, only the close cooperation of all interested parties in a constructive dialogue can bring multiple benefits.

The benefits of using PBL

The benefits arising from the PBL were acknowledged long before the 21st century. For instance, in 1938 Dewey emphasised that *“learning by doing has great benefit in shaping students' learning. High-quality experiences, as well as continuity of experiences, are paramount”* (Dewey, 1938). Therefore for many years the PBL methodology has been exercised in fields of technical and engineering education. Nowadays it is becoming a preferred method worldwide, across diverse discipline fields.

Also, various research studies indicate that the implementation of PBL brings tangible changes in learning–teaching experiences and the learning environment. To Thomas (2000), PBL transforms students' work habits and effectiveness. As Boss and Krauss point out, students acquire *“new patterns of thinking, they learn how to capitalize on the wisdom of the group, and, most importantly, they continually learn how to learn together”* (Boss and Krauss, 2007, p. 30). As a rule, students demonstrate a greater interest, engagement and mastery approaching various disciplines. Thus PBL contributes to the growth of the community of practice.

The professional learning of teachers differs from the peer-to-peer collaboration of students. PBL brings together like-minded people, forming teachers' learning communities. It enables the increase of a critical mass of educators who share the same goal. Innovative-thinking teachers can together lobby for seeking to decrease teachers' isolation through more extensive networking, both in and out of the educational sector, increased shared responsibility improved time and recourse management, better coping with technological challenges, and thereby gain more power, promoting time-consuming changes in a systematic way.

From the perspective of business, the PBL method is also the source of a set of benefits. Projects require real-life problems and thus open the door for business organisations to better articulate and share business needs, and test new business ideas for what is just a symbolic cost. Being the participants in a learning environment, companies can shape the teaching–learning process, specifying existing gaps in the education field, sharing special training modules and launching internships in order to grow talent for their needs. PBL enables business organisations to avoid the additional investment and risks that are related with retraining post- graduates and preventing the misuse of managers' time that is involved in the development of specialists.

Conclusions

1. PBL is a student-centric methodology that extends opportunities of all the participating parties in the educational environment. The projects themselves are seen as a major part of existing study programmes that involve a wide range of tools and the aspects necessary for a successful professional training.
2. The PBL concept is based on the close networking of student groups, research and educational institutions, and business organizations. Also, PBL learning is approached as a managed process, managed through projects that comprise a set of complex tasks and activities, oriented towards real-time problem solving.
3. Through PBL, students and teachers of VBC, as well as business partners/ companies gain different benefits, which all together create favourable conditions for addressing the challenges of a changing society in this day and age.

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II LEARNING BY DEVELOPING CROSSING BORDERS

Kaarina Marjanen & Sabine Chatelain

THE PEERS PROJECT: INTEGRATED MUSIC EDUCATION TO FOSTER PROFESSIONAL IDENTITY WITHIN THE FRAMEWORK OF THE LAUREA LEARNING-BY-DEVELOPING MODEL

Abstract

The current paper focuses on students' professional development, as supported by the Laurea Learning-by-Developing (LbD) model, within an international exchange project. PEERS (Projet d'Étudiants et d'Enseignants chercheurs en Réseaux Sociaux [Project for students and teachers collaborating in research with the support of social media]), to which Laurea was invited by the University of Teacher Education, HEP Vaud Lausanne, Switzerland¹, gave us the framework to implement a new research-oriented learning task in the professional training. The core idea of PEERS is the alternation of two periods of exchange, supported by distant collaborative learning environments based on a research task. Three kindergarten (social service's²/ primary school teacher³ students and two teachers from each institution participated in the project from 2015 to 2016, with the especially chosen theme of "Music education, creativity and self-esteem".

In this paper, the practical measures required to implement the project and discuss the outcomes within the LbD model are described. The Laurea LbD model, with the theories and experiences, support us in the analysis and the results, pointing out the effects of the project in regard to the growth of the professional development of the students. Changes in the students' understanding of theoretical concepts and professional practice could be observed. By taking into account the international dimension as a specificity of PEERS, it appears that intercultural exchange within a long-term collaboration creates added value for the teacher/socionom students' professional identity.

Keywords: creativity, integrated music education, international exchange project, Learning-by-Developing model, professional identity

Introduction

PEERS, **P**rojets d'**É**tudiants et d'**E**nseignants-chercheurs en **R**éseaux **S**ociaux⁴ is an international exchange project involving two groups of students and their teachers. The aim is to support the students' professional development with experience-based understanding. This is an initiative developed by HEP Vaud Lausanne⁵ since 2011 and implemented as a part of the world-wide HEP Vaud concept and with Laurea University of Applied Sciences (UAS) between 2015 and 2016. The current project was embedded in the idea that music, as sound-based education, would function as an integrated platform for learning.

In this article, the meta-analysis of the PEERS project provided by the teacher trainers, is presented within the framework of the LbD model. When referring to professional identity/development, it implies that of the fields of a bachelor of social services (socionom) / kindergarten teacher and the classroom teacher professions. Different steps of the project are described, including the theoretical background with the LbD dimensions. The results reveal the strengths and the potential for the evolution of the current approach.

Professional development and learning

The LbD model (Raj, 2007; Raj, 2014; Niinistö-Sivuranta, 2015) offered a basis for the project performance. The building of new competence, and individual and community learning (observed by six indicators, as presented later) can be seen as factors for the both LbD and PEERS. All the LbD indicators will be used to present and analyse the current project.

The LbD model can be considered a flexible model as it can be recreated towards the needs of various purposes, like the needs of the comprehensive school (Henriksson, Korkiakangas & Mantere, 2014) or creativity (Henriksson, Mantere & Mänty, 2014). The LbD model also serves cultural learning and professional teaching orientations, like those of a socionom/kindergarten teacher and classroom teacher. The current focus is constructed on intercultural partnership and creative experiences with LbD.

The professional development of a teacher is constructed via the general professional self-esteem and individual professional self-esteem that support professional expertise: a personal and professional orientation at work with recognition of one's core competencies, supported by prior life experiences and inner motivation (Marjanen & Cslovjecssek, 2013b; Beijaard, Verloop & Vermunt, 2000).

The project performance, LbD and the meta-research

The actual PEERS project engaged three students from Finland (from Laurea UAS) and three from Switzerland (from HEP Vaud). During one visiting week in both

universities (October 2015, April 2016), each group visited the institutions and schools in their respective hosts' countries. At the end of the first week, the students had chosen their research questions on which they would collaborate during the following seven months. The main theories were given by the teacher trainers. In between the visits, the students were supposed to collaborate with ICT on their choices. A final report, as well as two intermediate self-reflections, was provided by each student. The results were presented during the last face-to-face week in order to close the project.

The aim of our meta-analysis was to better understand the potential of PEERS to affect the students' professional development, with an understanding of the teacher and socionom studies and professions as parallel to each other. Two questions guided our analysis:

- How would this project interact with the goals of the LbD model?
- What would we learn from this international collaboration for teacher training in terms of professional development?

To access these questions, various kinds of data were collected in the form of the planning of the project and the written reports by the students during:

- the trip to Finland (reports, December 2015)
- the period between the visits (reports, March 2016)
- the PEERS week in Switzerland (reports, May 2016)

The LbD model⁶ was observed from the lenses of professional identity and development (as described later) and used to create a holistic understanding with which to identify the evolution of the students' concepts and understanding of creativity, supported by the dialogue on music education and intercultural exchange. As teacher/socionom trainers we were deeply involved in the project, which naturally affected our vision of the results that were to be presented and discussed via the categories/dimensions of the LbD model (authenticity, partnership, experiencing, inquiry acting, creativeness) in order to support the research-oriented approach towards learning and producing new knowledge (see Figure 1).

Creativity as a core concept for teaching and professional development

In this project, the core concept was creativity. Two aspects of creativity are explained: 1) creativity as a quality for professional development; and 2) creativity as a core concept and tool for music/sound-based teaching and learning. In the current perspective, creativity was defined within the educational context.⁷

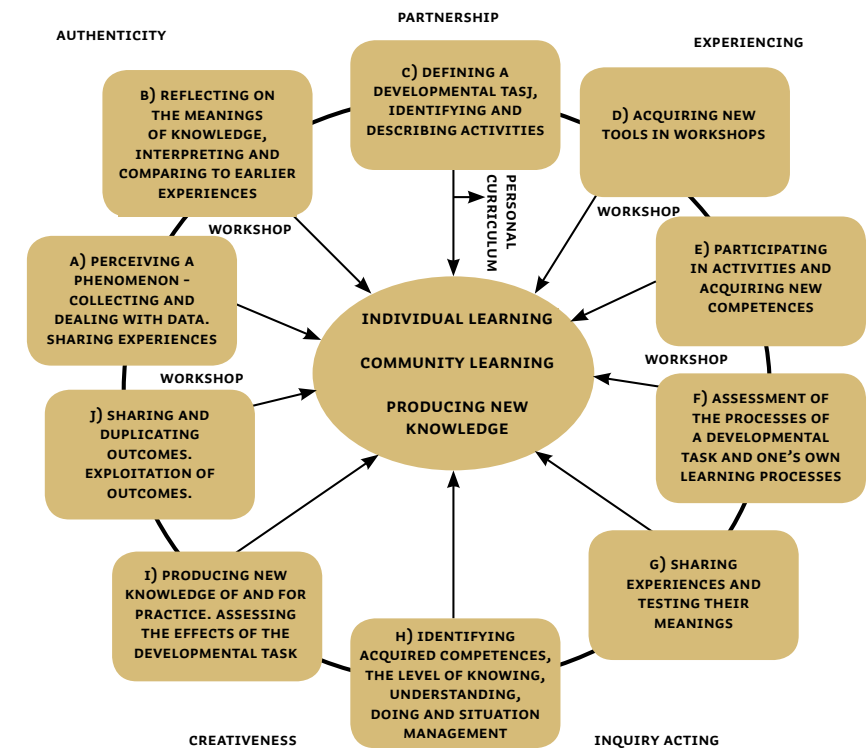


Figure 1. The LbD model structure (Raj, 2007).

Creativity as a quality for professional development

Research shows the importance of creativity as a tool to better benefit in education (Craft, 2005). It appears that creative teaching and learning sequences need specific pedagogical reflection (Jeffrey & Craft, 2004) with a clear teacher's stance (Craft et al., 2007). Teachers play a role in encouraging innovative and creative learning processes (Cremin, 2009). Therefore, their own creativity, as well as their understanding of creativity in teaching, should be fostered (Coppey Grange, Moodey & Darbelley, 2016).

The curricula in Finland (2016⁸) and Switzerland (2012) emphasize creativity as a transversal skill. As mentioned, in the LbD model creativity is also a part of professional development. Like the Finnish curriculum (2016), LbD also functions from a phenomena-based understanding. According to a cognitive perspective, creativity should be approached as a capacity to produce something new and adaptive with respect to the context or the situation taking account of variable factors (cognitive, risk-taking, emotional and environmental factors) (Lubart, 2003). In a broader sense, creativity can be recognised as a part of what it means to be human because of the ability to connect new ideas by giving them new meanings (Rubenstein et al., 2014). It represents the faculty to connect different ideas from several domains which is tightly linked to the idea of integration in music teaching and learning (Burnard & Murphy, 2013).

Creativity as a core concept and tool for music teaching and learning

The research on teachers' professional growth supports the idea of individual learning in a dialogue with peer groups, with the understanding of holistic experiences and musical integration as a tool (Marjanen & Cslovjceksek, 2013a). This can be observed as a holistic model for learning through the arts to support democracy and motivation because of the participatory nature of creative processes, in a dialogue with well-being (Marjanen & Lage, 2015).

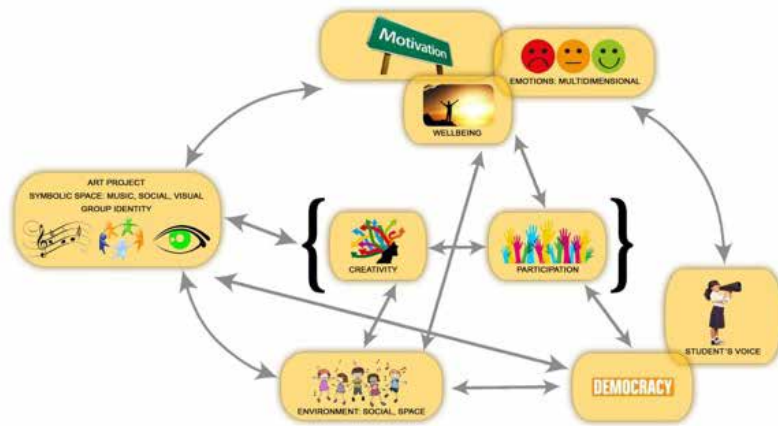


Figure 2. A holistic model for learning through the arts (Marjanen & Lage, 2015).

During PEERS, we asked the teacher students to define their understanding of creativity after discussing the theoretical inputs: risk taking (Lubart, 2003) and the flow experience (Csikszentmihalyi, 1990/2008, 1996/2013). Furthermore, interactions between disciplines can be considered as a factor for creative learning behaviour⁹ (Marjanen & Cslovjceksek, 2013a). From this starting point, students had to observe their individual links to creativity in everyday life and in teaching.

In their written reports and the final presentation, students witnessed a broader understanding of creativity in their own life and as a tool for teaching:

- Creativity was no longer found as an exceptional faculty but as a quality of everyday life. However, further awareness of these moments should be developed (vs. flow).
- Risk taking was found as a new possibility for the teacher and the learner. Creative approaches to music gave new space for a broader understanding of the power of sound and silence, encouraging their use of music without specific expertise.
- Personal experiences of sounds and music during the project had a deep impact on students' new understanding of creativity (experiencing various human, nature-based and cultural sound environments; languages; music

and silence; and musical portraits of the students). These experiences were pointed out by all the students as significant for their definition of the core concept.

The links between creativity and integrated music education were found to be easily accessible, supported by research on this topic.

PEERS as a research-oriented learning tool

In PEERS each student has to realize her or his own research project starting from a common theme. The students had the possibility to benefit from the experience in bachelor theses afterwards. An understanding based on early childhood music education also creates an excellent platform for the current project; the Finnish early childhood music educators considered the support for holistic development¹⁰ and personal qualities¹¹ even more important than the support for musical development, which was however seen as the basic factor for gaining the other goals (Marjanen, 2016).

It appeared that the collaboration on the individual research tasks was fostered by the common theoretical framework (creativity and integrated music education), which helped the students to present their results. However, collaboration via social media tools needs a stronger time schedule and tighter goal setting as real exchange occurred mainly during the two weeks in each country. In terms of research-oriented learning, we can consider PEERS a flexible approach with several possible sub-studies. The implementation of common theoretical backgrounds for the two groups is a challenge for the teacher trainers but also a chance for the understanding of various cultures - due to the cultural differences.

Partnership, authenticity and the experiential dimensions of PEERS

The experiential nature of the project is PEERS' strength. Via cultural visits and the observation of professional practice on all levels of education – from kindergarten to university – authentic learning environments could be found. In their feedback, students witnessed the deep impact of a common observation of their culture by the guests. The field of music seems to especially deepen their cultural roots and the influence of those on their teaching. They became aware of their identity as a teacher and as a human being rooted in a specific cultural background. All these processes were initiated by PEERS but were considered by the students to be a first step in their ongoing reflection.

Differences between the exchange with the curricula of the two universities were identified as challenges for the collaboration because of the differences in the credits gained (3 credits for the Swiss students; 5 credits for the Finnish students). The research tasks and evaluation had to be adapted to the situation.

Conclusion

Our analysis should be considered as a first step to pointing out the advantages and limits of this kind of international exchange. By referring to the LbD model, we were able to show the potential of PEERS as an appropriate tool for professional development in higher education, especially for research-oriented and experiential learning. This flexible structure can support different kinds of research projects in an international context. However, the project needs to be optimized according to the theoretical framework and research methods. The use of new communication technologies as a core for the project should be supported by a well-structured research design to better involve the students in long-term collaboration. The impact of intercultural awareness and a creative approach to the profession appears as a specific result of PEERS.

We can state that the project interacted with the goals of the LbD model easily and naturally. This international collaboration was rich and beneficial for everyone involved and also provided reflections of both of the university units and had impacts on the development of the professional training in both countries. A good ground for further investigation was created.

- 1) <https://etudiant.hepl.ch/cms/accueil/campus/etudes/mobilite/mobilite-des-etudiants-out/peers/peers--english-version.html>
- 2) *The degree is a Bachelor of Social Services, with a kindergarten teacher qualification (teaching children aged 0–6)* <https://www.laurea.fi/en/studying-and-applying/bachelors-programmes-in-english/social-services>
- 3) *The degree is a Bachelor of Arts with a teacher's diploma as a kindergarten teacher (4–8 year-old children) or as a classroom teacher (teaching children aged 9–12)* <https://candidat.hepl.ch/files/live/sites/systemsite/files/filiere-bp/programme-formation/factsheet-bachelor-prescolaire-et-primaire-2015-fs2-hep-vaud.pdf>
- 4) https://www.google.fi/url?sa=t&rct=j&q=&esrc=s&source=web&cd=7&ved=0ahUKEw-jrx_3nuqjQAUGFiwKHat-BhkQFghMMAY&url=http%3A%2F%2Fwww.erasmus-journal.eu%2Fwp-content%2Fuploads%2FGRAZ_definitif-Programme-PEERS.-Presentation-generale-copie.pptx&usq=AFQjCNFQh2fCvAyVPBoETX5VSErwRz1NpQ
- 5) University of Teacher Education, State of Vaud, Lausanne
- 6) *In this article, the LbD model – as a well-known pedagogical approach in Laurea – will not be described in detail.*
- 7) *The social services field also qualifies the students for teaching-connected fields (early childhood and comprehensive school organizations and projects). Thus educational understanding with creative, artistic and pedagogical approaches and tools is considered important for the professional development in the field, connected to the ability to support well-being.*
- 8) http://www.opf.fi/download/163777-perusopetuksen_opetusuunnitelman_perusteet_2014.pdf
- 9) *In this sense, it is important to approach music from a wider perspective, on the basis of music as sounds, because of the musical impacts on human behaviour and learning.*
- 10) *The most important fields: psychomotor, social and emotional development.*
- 11) *Imagination, well-being, flow experiences are the most important ones under personal qualities support.*

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Joachim Burmeister & Piia Silvennoinen

ACTIVE AGEING PROVIDED BY SENIORTRAINER EDUCATION

Abstract

This article illustrates the results of a comparative study conducted on seniorTrainers in Germany and Finland between 2013 and 2014. Altogether, 84 seniorTrainers participated in the research in the cities of Vantaa and Espoo in Finland, and in the city of Greifswald and in the province of Bavaria, Germany. The results show the importance of the education programme (the seniorTrainer Education Programme) for senior citizens in providing the competence to do voluntary work. Furthermore, the results reveal seniorTrainers' social responsibility and commitment towards their respective communities. Thus, the education and the practice of seniorTraining enhance both the social capital of the communities and the individual well-being of the seniorTrainer. All in all, the seniorTrainer Education Programme is a good example of a social innovation in the field of active ageing. The programme resulted in a collaboration between the universities of Laurea UAS and Neubrandenburg UAS, since the Finnish version is an adaption of the German model. It acts as an important example of joint collaboration among international partners, regional actors and higher education institutions.

The background of the seniorTrainer Education Programme

In 2002 the German Federal Ministry for Family, Senior Citizens, Women and Youth launched a national model programme entitled “Experience for Initiatives” (EFI) to promote the voluntary involvement of older adults in civil society. The programme was aimed at increasing appreciation of older people in society and developing new strategies for enabling them to use the knowledge they have gained through life experience as a resource for involvement in community service. The German EFI programme connected the various discourses with the conceptual approach of offering senior citizens education targeted specifically at involvement in the third sector (Burmeister et al. 2007; Burmeister & Stehr 2012). The programme initiated seniorTrainer education and activity. The seniorTrainer education programme started in 2002 in Germany, and in Finland it was launched by Laurea UAS and the cities of Vantaa and Espoo in 2006. Approximately 4000 people have concluded the education in 135 cities in Germany, and in Finland around 220 people in Espoo and Vantaa have concluded the education. The German education programme consists of 11 modules comprising approximately 50 hours of education plus a practical experience phase of two weeks, the Finnish programme consists of nine modules comprising 32 hours of education plus two to three weeks of practical training. In Finland seniorTrainer education is a trademark of Laurea UAS, meaning that the education is provided by Laurea UAS in collaboration with municipalities.

Methods and research themes

The study presented below is a continuum of the research done earlier on senior-Trainers (Braun & Burmeister 2004; Engels et al. 2007; Burmeister & Havukainen 2009). In the study, a total of 84 seniorTrainers took part in a written survey in 2013 on the basis of a questionnaire. The participants were from the German federal state of Bavaria (n = 30), the city of Greifswald (n = 31) and the Finnish municipalities of Vantaa and Espoo (n = 23). The survey questioned 62 women and 22 men and the average age of the participants was 68.5 years old.

The aim of the study was to obtain data on the following themes:

1. The scope, profile and self-concept of the seniorTrainer
2. Motivation and access to the seniorTrainer Education Programme and integration into municipal structures/organisations
3. The expectations of seniorTrainers regarding the content of the education programme
4. The existing and desired forms of support for volunteer work

The profiles, self-concept and motivation of seniorTrainers

Many respondents from both countries had already been active in community service prior to the start of their involvement as seniorTrainers. When asked to name

the structural framework in which they were active, all respondents reported involvement in local associations, clubs/organisations and groups, or church institutions. However, the volunteers were also active in the various municipalities, particularly in the large city of Munich.

The profiles for seniorTrainers can be grouped into four role profiles, described in the original programme: counselling/advice, group support, the planning and realisation of a project, and networking. However, the main forms of involvement described by all respondents were related to the personal counselling of individuals and guidance for (small) clubs, organisations and groups. Of the Germans surveyed, approximately 20% reported that they had also planned their own cultural or social projects and implemented these plans in an appropriate organisational framework.

When asked what had motivated them to act as seniorTrainers and volunteer an average of four hours (Greifswald) or seven to eight hours (Finland; Bavaria) per week, the respondents from Finland and Germany gave somewhat different answers. Decisive motives that were specified by the respondents from both countries was the opportunity to experience joy and fun (together with other volunteers) through their involvement, supporting other people in their daily lives and, in this way, also developing and maintaining social contacts. However, the answers differed on other points: while the volunteers in Vantaa/Espoo and Greifswald hoped that their work would make an important contribution to the well-being of their community, there was a stronger tendency for the Bavarian seniorTrainers to specify the promotion of the positive coexistence of the generations as an additional interest. It is also interesting to note that all respondents reported being less motivated by the prospect of receiving social recognition by others for their work.

In summary, based on the results, seniorTrainers can be described as active, older volunteers whose voluntary work is seen as valuable, both for the communities in which they live and for themselves. They are motivated by a self-concept about civic involvement that not only values individual “acts of caring for others”, but moreover sees a relevance that can be summed up in the following statement: “What I do as a volunteer, I do for myself, for others and together with others, for others.”

The expectations of the seniorTrainer education

On the basis of their experiences as volunteers, the participants were also asked if alterations to the curriculum were needed. Approximately half of the Finnish respondents stated that the curriculum needed updating. In their opinion, there should be more information about the local voluntary sector, including the existing organisations, stakeholders and voluntary activities. Furthermore, there was a need for the intensification of the practical-experience phase(s), legal topics, age-related diseases and more about interpersonal communication. The majority of the German respondents felt that not only should the existing subject areas (policies for senior citizens, images of old age, communication techniques) be covered in greater depth and breadth, but also new topics should be added (international networking, digital

media, a more practical orientation).

The results of the study confirmed the relevance of the important topics of the curriculum. The following modules were found to be relevant in both countries: the structures of the voluntary sector, communication, working with groups, project planning, public relations, fundraising and networking, as well as the preparation, implementation and evaluation (reflection) of the one or two practical-experience phases.

All in all, seniorTrainers also need constant updating and education about current societal issues alongside the knowledge they have gained through experience and from a relatively short education programme. New social developments create new issues and needs in society for professional work and volunteer service. For example, the current needs of refugees also appeal to the seniorTrainers’ sense of responsibility, a situation which – at least in Bavaria – has already led to new curricular approaches and a corresponding education module for seniorTrainers.

Support for seniorTrainers

In their volunteer work, the German and Finnish seniorTrainers demonstrate a high level of social responsibility towards other citizens and the community in which they live. The volunteers’ neighbourhood and local community are the nearby arenas in which they organise themselves and network. It can also be said that seniorTrainers make a substantial contribution to the creation of social capital (as defined by Bourdieu) by cultivating, establishing and qualifying social relationships.

When asked what type of support is important for their work as seniorTrainers, all the respondents expressed a desire to share their experiences, questions and perspectives with other volunteers, as well as with friends and acquaintances, on a regular basis. They were also interested in being able to contact professionals for advice on special topics and issues. Participants in Bavaria wished that local politicians would show more appreciation for their work. Further expectations for support are focused on local authorities, such as civic engagement agencies or senior citizens offices, which should offer support — for example, with technical issues and media and also in the creation of materials aimed at promoting the public relations activities of seniorTrainers.



Summary

Improved standards of living (hygiene, advances in medicine etc.) have prolonged the life expectancy of people in Western societies. Retirement at 70 years of age (at the latest) means that a growing number of ever healthier, more active and competent ageing people have up to 20 years with which to fill their lives with the activities of their choice. The phenomenon of active ageing can be seen as a product of positive life course capital (O’Rand 2006). Life course capital is a combination of human capital (education and work experience), psychophysical capital (physical and psychological well-being), social capital (direct and indirect social relationships and integration in social systems) and personal capital (cumulative efficacy and competence plus the successful negotiation of stressful life events over the life course) (O’Rand 2006). In the following the research results of the study will be analysed using O’Rand’s conceptualization of life course capital.

The participants of the study showed great involvement, motivation and self-conception regarding the seniorTrainer’s work and role. Their personal capital provided the core basis for this activity. Long life experience was able to be put to use in a beneficial manner as a seniorTrainer. As for education, the participants articulated the alteration needs of curricula. Their understanding of the seniorTrainer education and their ability for self-reflection are explained by human capital. Clearly the curricula should reflect the present situation of society (the immigration and refugee situation) as well as better highlight the structure and function of the voluntary sector. The seniorTrainers’ need for support, peer-to-peer support and support from the wider community, calls for the use of social capital, which O’Rand (2006) sees as a stock of direct social relationships. As Gray (2009) points out, organisational activity does not provide social support in the same manner as informal social contacts. A solution for this could be informal gatherings of seniorTrainers. All in all, the seniorTrainer Education Programme enhances the social capital of society. It is about social networks, reciprocity and trust (Silvennoinen & Järveläinen 2014). It provides a glue that hold people together and provide them with a meaningful life: it keeps society going (Coleman 1990).

The study results show a great deal of concurrence between the interests, expectations and profiles of the German and Finnish seniorTrainers who took part in the survey. One thing they all have in common is the desire to combine their interest in pursuing an active and meaningful life with voluntary work that is aimed at helping others in the form of supporting individuals, groups and organisations in their community. For the universities that were involved in the development of the education for seniorTrainers (Neubrandenburg University of Applied Sciences and Laurea University of Applied Sciences) the promotion of civic involvement for senior citizens represents an area of cooperation that can be developed further in the future.

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Mirva Alapoikela & Zsolt Bugarszki

TEACHING E-SERVICE COMPETENCES WITH THE LEARNING BY DEVELOPING (LBD) ACTION MODEL IN FINLAND AND ESTONIA

Abstract

For three semesters during 2014 and Fall 2015, Laurea University of Applied Sciences organized an experimental course on e-Service competences in co-operation with Tallinn University. The objective of the course was to improve the ability of participants to innovate and develop e-Services by generating new e-Service ideas or service processes in the field of health and social services. We followed the Learning by Developing action model for creating a space for independent development works. Students were supported through the e-learning feature of Laurea University of Applied Sciences after a face-to-face orientation day both in Espoo Otaniemi and Tallinn. The course also combined the knowledge of contemporary e-Services with the usage of CANVAS business development tool. Over the last three semesters, participants came up with creative e-Service ideas and the best ones were encouraged to be put into motion.

Participants

The course was designed in a multidisciplinary and international environment. Students in Finland came from Social Services, Nursing, Public Health Nurse, Physiotherapy and Business Management BA programmes. Students from Estonia came from Social Work and Liberal Arts and Humanities BA programmes. The program was led by Mirva Alapoikela, a lecturer from Laurea University of Applied Sciences in Finland and by Zsolt Bugarszki, a lecturer of Tallinn University in Estonia. Altogether more than 160 students participated in the courses.

The importance of e-Services

According to the national eHealth and eWelfare plans in Finland, the implementation of e-Services the introduction of nationwide online service functions is to be promoted in both social welfare and health care. (Hämäläinen et al 2011) Over the last 16 years, Estonia has been renowned for its integrated digital government services including the national eHealth system and giving access to different public services on the internet. (Widén and Haseltine 2015)

In both countries, we can expect exponential growth in the field of ICT supported health and welfare services which may bring revolutionary changes to the landscape of social work, nursing and other helping professions. The first generation of e-Services health and welfare institutions were using internet as an information board, maintaining one-way communication by running webpages, information services or newsletters. In a next phase, digitalized medical prescriptions, discharge letters, case summaries, patient and client documentations are created more quickly and more cheaply with greater access to information and a more transparent health and social care. With the involvement of interactive social media platforms and with the usage of personalized devices, new perspectives are available for eServices. Applications, gadgets, diagnostic and communication tools, fast developing robot technology and initiatives based on the sharing economy model represent the future character of services. Citizens are not passive users of our systems anymore. User-led, user oriented approaches get new meaning in the transparent digitalized area. Peer to peer solutions are challenging the monopoly of professional services, and innovation and creativity are inevitable in social work and health education.

The design of the e-Service Competences course

The course was organized as a blended learning program where students learned through delivery of content and instructions partly via online media. (Friesen 2011) Instructions were delivered in the classroom during the orientation day both in Espoo and Tallinn. Students also had the opportunity to receive a personal consultation upon request. Students were asked to create small groups, each consisting 3-4 people, to work together on their project idea offline. Other than that, all course

materials and tasks were available through Optima, an online service, through Laurea University of Applied Sciences. Students were also asked to upload their assignments and to maintain online discussions with other students and lecturers, though no formal lectures were organized.

We also followed the Learning by Developing (LbD) action model, putting a strong emphasis on individual learning, community learning and produced innovation. (Raij 2014) Students followed their individual learning styles by engaging with the course materials and discovering their own resources. Lecturers did set up milestones for different assignments while students uploaded their materials reflecting the information they received from different resources. The final assignment was to upload their introductory video making a short pitch for their idea and to show a comprehensive business plan using CANVAS model.

With modern technology we were able to arrange simultaneous orientation classes for both University's students. During their study, the students were asked to develop a new e-Service and create a selling pitch video of their idea.

Development work

The Learning by Developing action model focuses on the development process. In that model, students not only absorb knowledge intellectually but learn primarily from the process of creative development itself. Individual learning is combined with creative, multidisciplinary teamwork, where the knowledge and experience of social and health professionals are combined with business development and IT skills. While intellectual learning occurred mostly individually using online materials, the development process itself happened in the small group offline through the co-operation of participants, often from different cultural backgrounds.

At Laurea University of Applied Sciences, development work resulted number of real project ideas that were implemented by the co-operative partners of the University or by enterprises established by students. Tallinn University created outside links, to connect the academic atmosphere of the University with the vibrant life of creative development hubs of Estonia. Students were encouraged to participate in more project based processes, using their creativity to implement their ideas and turn them into a reality.

Experiences

Recruiting students for the course was challenging if it wasn't part of student's regular educational program. That was the case for Tallinn University where the course was introduced as an experimental project. Students also reported minor difficulties and challenges regarding the online individual learning process. For most of the Estonian participants, online learning was a new phenomenon. The

lack of traditional academic lectures and having complete freedom to operate while still requiring deadlines was challenging to those experiencing it for the first time. However, majority of students managed to adjust to the Finnish online learning system and very few students failed to finish the course.

Originally we wanted to create an interdisciplinary course, but at the beginning of the co-operation, Tallinn University was still at the beginning of a large structural reform. Traditional academic teaching was the mainstream method of education, divided into parallel disciplines with very little interaction with each other. Over the last 2 years a lot has changed, but for this experimental course we were unable to invite students with different backgrounds into a single course. We bypassed the administrative and educational difficulties with involvement of outside resources. For example instead of being able to rely on the expertise of our own IT students we needed to invite independent IT experts, or business developers to Tallinn University who helped to implement the ideas of social work students.

Later on, these outside links turned to be extremely useful as even the most creative and innovative ideas remain nothing more than a school assignment in a traditional academic environment. Creative hackathon events and competitions for entrepreneurs helped us to implement different ideas, and most of these events are currently organized out of the academic areas.

A hackathon is usually an event in which computer programmers and other professionals like graphic designers, project managers and business developers are involved in intensive collaboration to develop software or hardware projects.

In Estonia, hackathon events are connected not only to traditional IT topics but different creative hubs and are organized around relevant economic or social issues. In autumn 2014, an "Enable" Hackathon was organized in Tallinn with the support of the Estonian Ministry of Social Affairs with the aim of developing creative ICT based projects to increase the quality of life of disabled people in the country. Tallinn University also participated in this event using our new experiences with the LbD model, participating in the implementation of different projects. Two concrete, implemented development projects were connected to the experimental course with LbD action model at Tallinn University between the Autumn 2014 and Autumn 2015 semesters.

At Laurea University of Applied Sciences, I was happy to start collaborating with Tallinn University. Adding a partner to a study unit always makes more interesting. Having students from various fields and two different universities in two different countries is an opportunity that should be utilized more in an online course like e-Service Competence. Most students followed the recommended schedule for completing the study unit tasks and a majority of the tasks were completed well, meaning that the references were chosen using critical thinking and the tasks contained reflection in relation to the chosen references. The students' questions often concerned the given guidelines or the links to materials, which sometimes failed to open.

In the future, the tasks could be designed to integrate the Estonian and Finnish students more closely together through their work. Adding social media elements to the Optima workspace environment might bring out even more great ideas for future service design and bring out the best for the service users.

We plan to extend the course in different ways. We plan to involve more Universities to create an international network, using blended learning methods combined with Learning by Developing approach. We also plan to create new outside bounds, participate in creative development processes, and promote greater implementation of our students' project ideas.

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III

CREATING FUTURE COMPETENCES

Kaija Koivusalo, Seppo Luode &
Päivi J. Tossavainen

THE CO-DEVELOPED CONCEPT FOR MANAGEMENT ACCOUNTING EDUCATION: CASES AND EXPERIENCES FROM CAPITAL BUDGETING COURSES

Abstract

This article is concerned with accounting education in a higher education context. It outlines an intensive teaching case.

Accounting education is considered to be important for all future business professionals. However, there is also a wide variety of professions other than accounting that could greatly benefit from understanding accounting. Accounting courses are generally considered difficult (technically, theoretically, and language-wise) by many students. To understand the key concepts, the language of accounting, and how to interpret the financial statements and management reports could be a key competence for all practitioners with a higher education.

This case provides a detailed encounter of experiences in building and executing capital budgeting teaching. The course was developed together with an external partner (who provided the accounting software) and Laurea University of Applied Sciences staff. Further, the case was tested with students at Laurea UAS in Leppävaara, Finland, and at Hanze UAS in Groningen, the Netherlands. The main idea was to link management accounting with other business decision activities, such as strategy planning and business modeling, in order to provide a more meaningful context and experience for the students. This case serves as a trigger for considering how to embed management accounting teaching in order to strengthen business practitioners' future accounting capabilities.

This article describes an intensive teaching case showing how management accounting, and more specifically cash flow modeling and capital budgeting techniques, can be introduced to students with no background in accounting.

Keywords: accounting; teaching; cash flow modeling; capital budgeting; business modeling; case

Introducing the context of management accounting education

In today's business life, non-accounting professionals are frequently working with business controllers and managers in decision making. Business economics thinking, and especially accounting, is increasingly becoming decentered from the accounting department in many organizations. Managers with non-accounting backgrounds are expected to prepare budgets and develop business cases for capital investments. Managers are also expected to be able to analyze and interpret accounting information and understand the financial consequences of their decisions (Collier 2012).

Learning the basics of management accounting is learning to speak the language of management. Management accounting courses usually include topics such as cost-volume-profit analysis, budgeting, capital budgeting, cost accounting and pricing. For example, capital budgeting focuses on long-term planning and estimating the future cash flows of an investment project. In order to be able to convince the decision makers about the feasibility of an investment, the practitioners need to build a cash flow model and calculate criteria such as net present value (NPV), internal rate of return (IRR), and the payback period.

This article addresses the important question of how to teach cash flow modeling and capital budgeting to non-accounting professionals. Accounting education is normally only considered important to accounting professionals. However, there is a wide variety of other professions that could benefit from accounting education. Understanding the key concepts, the language of accounting, and how to interpret financial statements and management reports are a key competence for all business practitioners with a higher education.

The aim of this article is to describe how the management accounting principles, cash flow modeling, and capital budgeting techniques can be introduced to students and professionals with no background in accounting. They might be marketing students, service designers or engineers who are motivated to learn the language of management accounting in order to be able to present their projects to business decision makers.

The students at universities of applied sciences (UAS) are of different ages and come with different backgrounds. At bachelor's level, students enter the programs shortly

after concluding their secondary education. At master's level, there is a wider variety of students of different ages and professions. This poses challenges for teaching.

At the same time, bad experiences of learning accounting or prejudice towards accounting or the accounting profession may influence students' choices of courses and learning. Many students perceive accounting too difficult (too technical, too theoretical and too difficult language-wise). In many accounting courses, a lot of time is spent learning the terminology, such as debit and credit. Likewise, it takes some time to learn the rules of the "accounting game"—e.g., how to do double-entry bookkeeping—before you can call yourself an accounting professional. From our point of view, financial accounting is not as important as management accounting for the non-accounting professionals. Their major challenge is to know how to apply accounting information in decision making. Therefore, they require a different kind of expertise beyond mastering the techniques of accounting.

In this article, we focus on modernizing the education of accounting, and especially management accounting. This limitation is relevant for the above-mentioned reasons and because management accounting has a key role in decision making in most organizations. The underlying question is how to teach investment planning to non-accounting students and professionals.

This article describes how a business-oriented capital budgeting course was co-developed and tested. Further, it concludes that capital budgeting and cash flow modeling can be directly linked to education about business strategies and business modeling. Therefore, understanding strategy planning's and business modeling's impact on financial planning and vice versa is an important aspect of the teaching-learning process.

Research on active teaching methods in the area of accounting is scarce (de Araujo & Slomski 2013). While education and teaching in other subjects are evolving (see for example Schmidt-Wilk, 2011; Rajij 2007; 2014) accounting seems to be less focused. DeAraujo and Slomski (2013) remind us that the student body has also transformed: Students are more interested in how to apply teaching and interact with reality rather than in learning how things work. Hence, the development of management accounting education is warmly welcome.

How the management education course was co-created

Both financial accounting and management accounting courses are offered at Laurea UAS. These courses are mandatory in some study programs and complementary in others. Based on the fact that master's level education at Laurea UAS is conceptualized to contain only three contact teaching days for each course, some modernization of the teaching was called for.

The main proposition is that the intensive concept of the management accounting education course provides non-accounting professionals with enough competence

to understand the relevant accounting issues and to actively contribute to decision making with the accounting professionals. The model structure developed during this course provides both links to other business studies and the preliminary knowledge required to continue an accounting education if a student so chooses. Therefore it is important to start with concepts familiar to non-accounting professionals. These are business strategy and related business models. Then capital budgeting will also have a meaning for the students.

A small development team was set up to discuss what could be done. Following the principle of co-creation (see for example Prahalad & Ramaswamy 2004; Ramaswamy 2011), the accounting teacher invited teachers from other disciplines to develop the course.

First, the team looked at how the teaching has been executed; what has been the feedback from students and the experiences of the teachers? Second, it discussed what is important for the non-accounting professionals to learn. Thirdly, it discussed how teaching on other courses and the context of business life could be better incorporated into management education. As management and business studies include strategy and business development teaching, the team decided to link that fairly well-known managerial context to the accounting world.

For the benefit of students from different backgrounds and disciplines, the case organization used in teaching needs to be easily understood so that valuable time is not spent on learning about the business sector, industry, or the firm's details. Therefore, a fairly common business - a hotel - was chosen as the case company.

The new course concept was jointly co-created. It is based on teamwork and consists of three elements (see figure 1). The elements form a process that is based on iteration and continuous feedback between the elements. First, a strategy decision is followed by creating a business model for the case organization (a hotel) using either business modeling or the service business modeling techniques. In the second element, the profitability of the planned business model is analyzed using specialized, easy-to-use software. The key learning expectation set before the course development effort was to teach students how to use accounting information in management decision making in order to understand that strategy and business decisions need to be backed up with accounting facts. The case deals with the question of how much the renovation of the hotel would actually cost (based on the new strategy and business model) and how much money the strategy and business model's execution would require.

Therefore the outcomes of the course are not only the financial reports and calculations but also the presentation of them in a pitching session to a potential investor (the third element). For each element, a teaching objective, information, method, and outcomes were defined. Through pitching, the students learn to communicate management decisions and justify the choices they have made. The pitching session time is limited and requires a short but comprehensive presentation.

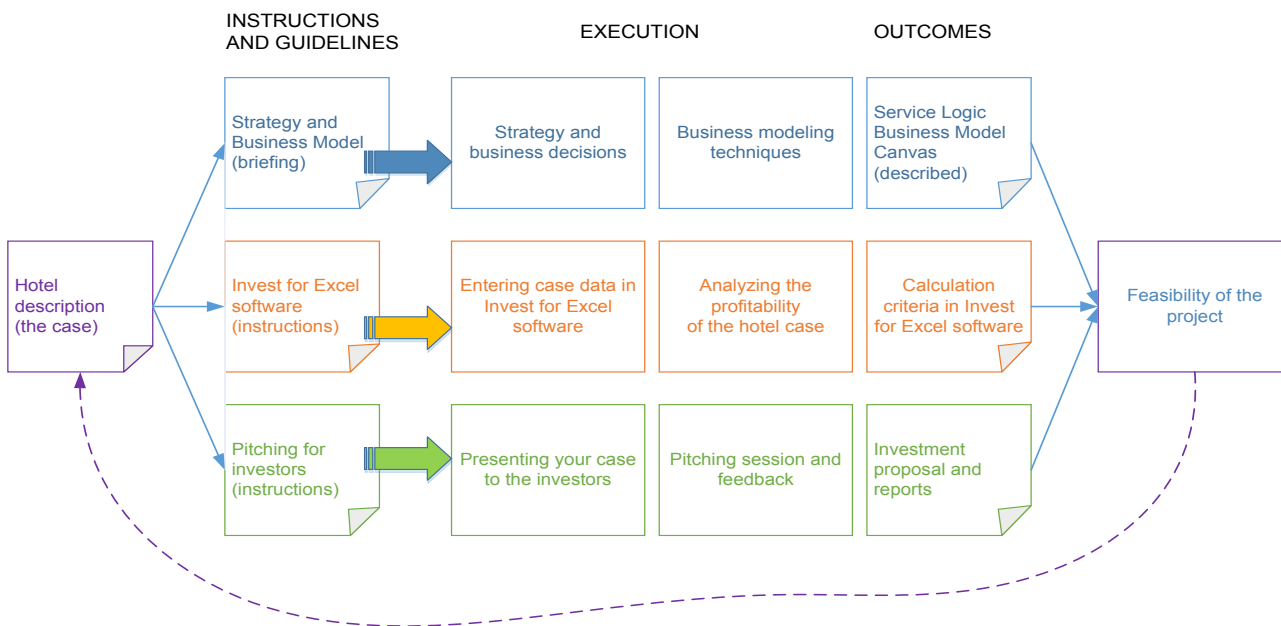


Figure 1. The elements of the management accounting course

The novelty of this concept is that the management accounting issue is linked to strategy through business modeling and also linked to communication through pitching. The decision maker (i.e., the manager) needs to understand the holistic view of the business and the strategic choices and their implications. Pitching sessions develop the communication skills of the non-accounting students as the student must explain his or her calculations and conclusions. Next, we shortly introduce the elements.

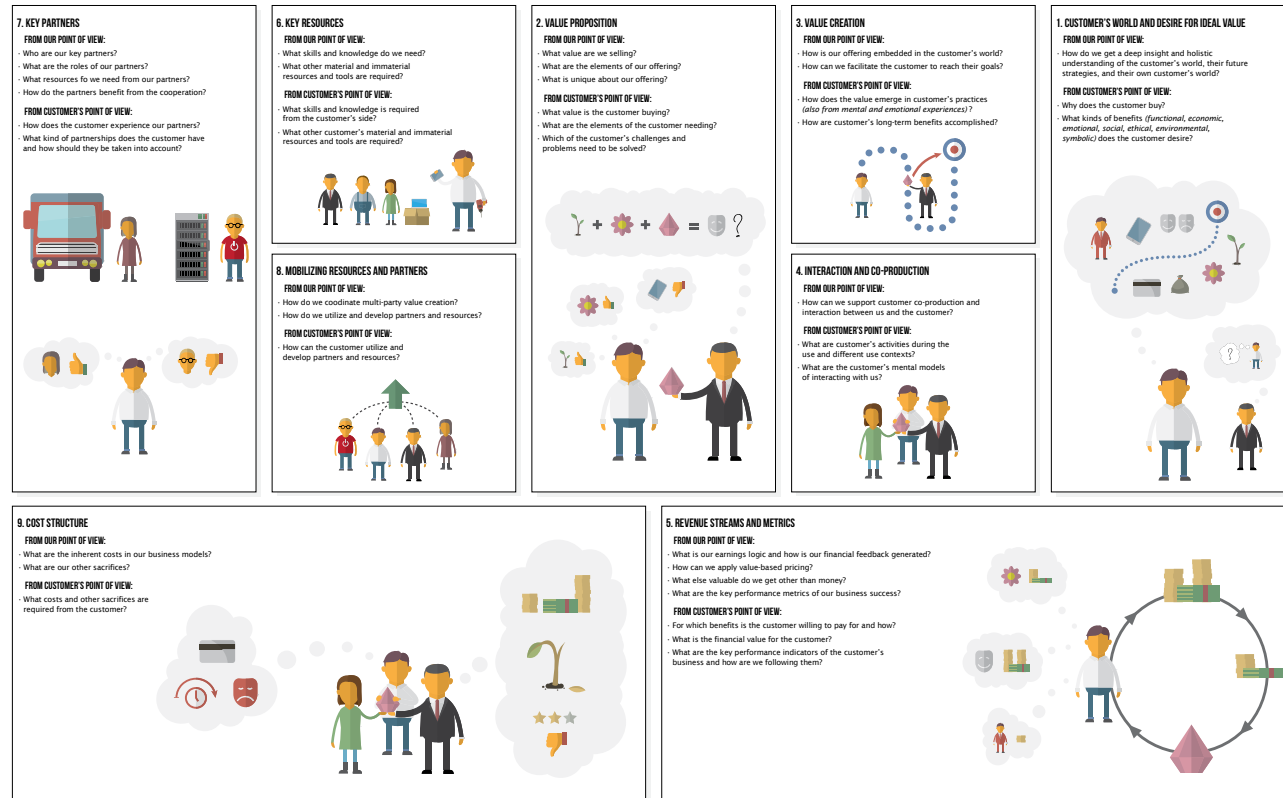
It is critical that the cash flow planning is directly linked to the strategy of the enterprise. Once the strategy is decided, the appropriate business model must be designed. Business modeling helps students to understand important business elements from the customer value point of view, to describe how the organization functions, and how to facilitate discussion. When the business model is created together, it is a shared model with a shared language within an organization.

The holistic view of the business helps to estimate different risks associated with the future options. For this, accounting needs to be closely linked to strategic level and futures thinking. The strategic level of business planning is facilitated through business modeling.

A business model aims to explain, with a certain set framework, how business ideas and technologies are linked to economic outcomes through a variety of functions (Chesborough 2006). The concept of a business model emerged heavily in management literature especially through the work of Osterwalder and Pigneur (2010). They created the business model framework, which operationalizes strategy through business development, provides a systematic approach, and facilitates needed discussions. A canvas technique is typically used, although software applications that create the business model are also available. The business model canvas (BMC) template (Osterwalder & Pigneur 2010) consists of nine elements that management needs to describe. These are key partners, key activities, key resources, value propositions, customer relationships, channels, customer segments, cost structure, and revenue streams. The left part of the canvas focuses on achieving operational efficiency and costs, whereas the right side focuses on customer value and revenue.

The BMC technique is based on industrial, product-driven so-called industrial/goods dominant logic. Ojasalo and Ojasalo (2015) point out that the popular business tools that direct companies' planning and decisions are still based on it (e.g., Viljakainen, Toivonen, & Aikala 2013; Lüftenegger 2014). The transformation of service business and the rise of the service thinking approach (see e.g. Vargo & Lusch 2004; 2008) in the marketing and management discipline mean that industrial logic should be replaced by the service logic approach. For this purpose, a template that encompasses service thinking was required. To build a service-centric business model requires new knowledge and capabilities in companies. The Service Logic Business Model Canvas (SLBMC) identifies value capture and value creation, in other words, both the provider's and the customer's viewpoints (Ojasalo & Ojasalo 2015). Accordingly, in the SLBMC, business model thinking is adapted to service logic (see the following figure, figure 2).

SERVICE LOGIC BUSINESS MODEL CANVAS



- Based on: Ojasalo, Katrin and Ojasalo, Jukka (2015) forthcoming). Adapting Business Model Thinking to Service Logic: An Empirical Study on Developing a Service Design Tool Customers' World - www.customers.world

Figure 2. The service logic business model canvas (SLBMC) template by Ojasalo and Ojasalo (2015).

Although the SLBMC template resembles the original BMC, there are some major differences. The SLBMC considers and describes the business from the provider's viewpoint ("from our point of view") as well as the customer's viewpoint ("from the customer's point of view"). The SLBMC takes into account contemporary business logic and the multiple stakeholder perspectives of service value co-creation, namely the provider's viewpoint as value capture and the customer's viewpoint as value creation. This approach includes customer-dominant logic (Heinonen et al. 2010; Voima, Heinonen, & Strandvik 2010), which changed the understanding of business thinking and value creation from being firm-centric to being customer-centric.

After the decisions regarding the strategy development and business modeling are made, the student teams start building the financial model using Invest for Excel software. The teacher is responsible for providing the relevant basic information for the students. Once the students are satisfied with the information they want to use as the input, the software does the calculations and analysis, and creates the needed

reports. Although, the software is fairly intuitive to use, the teacher is required to help the students in using the software. Then, the student teams interpret and analyze the results and prepare their presentations for the investor pitching session.

Experiences from the case experiments

In this chapter, we introduce recent experiences of the modernized management education accounting course. From the teaching point of view, it is important that the same concept can be easily modified to fit many purposes. We included three case experiences that show how well the course fits different student groups, teaching types, and teaching environments. The cases were carried out at universities of applied sciences in Finland and the Netherlands.

Case A is an elective course called Capital Investment Analysis for the Master's Degree Program in Service Innovation and Design (SID) at Laurea UAS. Case B describes the experiences of an elective course called Capital Budgeting, which is an undergraduate course for Finnish and international business management students at Laurea UAS. Case C is an intensive course on capital budgeting for the second year international facility management program students at Hanze University of Applied Sciences in the Netherlands. The development team collected feedback from the courses informally and formally; through observation, structured formats, videos, and photos.

In each case the concept and the structure of the course remained the same, but the development team took into consideration the experiences of the teachers and the students on the detailed level of the pedagogical aspects and instructions. As such the course is developed through empirical experimentations and interventions.

CASE A: Capital investment analysis for the Master's Degree Program in Service Innovation and Design (SID) for students at Laurea UAS in Finland

Capital Investment Analysis is a five credit elective course for students studying in the Master's Degree Program in SID. The students come with a wide variety of work experience. The program trains students from diverse backgrounds to become practicing service developers. The course has an international student body and is offered in English.

The students learn to develop hotel service business. They also learn that in order to get a development project approved in an organization, they need to identify the future cash flows generated by the development project. During this course, the students are introduced to the investment planning and decision-making process. They learn to identify the cash flows associated with capital budgeting decisions and to understand the discounted cash flow (DCF) concept. They learn to use the different investment decision criteria to determine whether or not a project is viable. They also learn to understand the concepts of scenario, sensitivity, and risk analysis. MS

Excel and Invest for Excel software are used to estimate the cash flows, make sensitivity analysis, and generate management reports. Assignments include the theory of capital budgeting, writing an essay on a chosen topic, and calculating examples using the MS Excel financial functions.

The students get information about the hotel case, including information about the city and the area where the hotel will be built. They have to find out the current market prices in that area. They also get rough estimates of the investment costs as well as of the operating cost structure of the hotel. Based on the given information, their own market intelligence and estimates, as well as using their business model developed earlier using the BMC, they are required to build a cash flow model. The results are summarized in several reports and in a management presentation. The final pitch is given during the last contact day with one of the teachers or some outside expert playing the role of an investment banker.

The course has been executed five times. Each time feedback on the courses was collected. The teacher is active in taking notes during the course, and formal feedback has been collected after each execution. The student responses include the following:

“I enjoyed the session where we had to present our project and we got feedback”

“A good course where we started from the basics, discussed different criteria, and also design ROI, and we had to write an essay based on literature”

“The hotel case was interesting, especially because we had to find out information and change the values for our project, and at the same time we learned to use a new software”

“The hotel case was very useful, and I learned a lot”

“The pitch presentations are good practice”

In this case discussion was raised on the different criteria used by management in business decisions. Service design and new criteria, such as design ROI, were discussed from a profitability point of view.

CASE B: Capital budgeting for the Finnish and international business management undergraduate students at Laurea UAS in Finland

Capital Budgeting is a five credit elective undergraduate course for Finnish and international business management students. There are typically between 30 and 50 students taking this course. This case experiment shows that the concept works with different contexts. This course has been executed both as a 10-week course with weekly workshops and as an intensive course. The intensive course started with a kick-off session in March, followed by online studies for two months and three days of intensive case work in May. The hotel case was the same as above.

Feedback from the 10-week courses:

“The course gives truly practical accounting knowledge”

“We have learned both theory and real world examples in order to achieve the most comprehensive know-how of capital budgeting”

“The use of diversified material in the teaching method is very useful and inspirational”

“Very good Excel and Invest for Excel implementation, which was the heart of the course.”

“The project cases were nice, different than usual and quite interesting to work on”

“The teaching is really efficient as we were able to learn and use Invest for Excel software”

“The Invest for Excel cases were very helpful and practice oriented”

Feedback from the intensive one-week course:

“The structure of three intensive days with [2] pre-assignments worked well”

“There was a ‘positive feeling’ during the course. An intensive course helps to concentrate and focus on one subject (although days may get long)”

“The hotel case with pitching worked well: The case was easy to understand and fun, and it was interesting to collect information for the case”

“Working on a real project was a very hands-on way of learning”

“Pitching was a good learning experience”

“Invest for Excel is an excellent tool—it was quite eye opening and fun to play with different calculations”

These cases show that the concept can be executed as both an intensive course or one taught over a longer period. The intensive week seems to be better for keeping up the spirit of learning and fun. There is less theoretical lecturing and more focus on the case exercise. To learn to use the software better requires time and can be better achieved with the longer course execution.

CASE C: A Laurea intensive course for international facility management students at Hanze University of Applied Sciences in the Netherlands

Hanze University of Applied Sciences in the Netherlands invited Laurea teachers to visit in 2015 and run a three-day intensive management accounting course for the second year international facility management (IFM) program students. The student group, consisting of 29 Dutch and international students, were finishing a 15-credit study block on sustainable buildings, covering different aspects of housing, sustainability, and project management.

The intensive one-week course was executed jointly by the development team of the management accounting course. For the course, the teachers prepared instructions and guideline booklets, the canvas templates, and other relevant material (such as the course brochure with highlights; a schedule overview; business modeling information; the hotel case details; and the quick guide to Invest for Excel software).

The investment case given was to plan a hotel business that is profitable and financially viable. The students worked in teams, with each team first creating their own business strategy for the hotel. As the Hanze students were already familiar with the original BMC (Osterwalder & Pigneur 2010), the Laurea team introduced the upcoming SLBMC (Ojasalo & Ojasalo 2015), which emphasizes a deeper understanding of the customer needs, both implicit and explicit. Further, the students used the same software (Invest for Excel) as the students at Laurea UAS to analyze the cost structure and revenue streams, and metrics of the business. The course ended with a pitching session in which the students presented their investment case and the justifications for the choices made to a group of investors (i.e., Laurea teachers). The experience for the Laurea teachers was very positive; the students were active and worked hard. Their own teacher followed the sessions and provided positive feedback too. Feedback from the students was recorded on video.

Feedback from intensive one-week course at Hanze:

“It kept us focused and into the topic. Hectic, long hours but fun.”

“Yes it is a good case. It is easier to deal with a hotel than, for example, a shopping mall.”

“The computer software we used was especially helpful.”

“I found the course helpful for my future—to structure the amount of information.”

“Now I understand how these [investment criteria] are used in practice.”

The Case C experience was positive for both students and teachers, and the Laurea teachers have been invited back to Hanze. The case concept is now co-developed with Hanze to better fit the curriculum of both universities.

Lessons learned in linking strategy and business modeling into management accounting

Typically, strategic decisions are excluded from teaching management accounting and investment planning, which means that the students do not see the holistic decision-making structure behind the business planning. Further, they might not understand the importance of linking the strategy to financial planning or why these calculations are important in practice.

First, the business case to be used on the course needs to be identified. It is suggested that a well-known business sector or industry is chosen. We used a hotel as a case,

which has been an excellent choice because most of the students know this context (hotel business and operation), at least from a customer's point of view.

It is important that the teachers create and present the case as a story. They must also provide the basic financial data of the hotel and its operations. For investment calculations, suitable software is needed because software designed for cash flow analysis, such as Invest for Excel, can easily create various calculations, graphics, and reports for students to interpret. The technical entry of the figures into the software shows that the students already learn the process of financial planning. Students are not given all the necessary information at the beginning of the course. They are only given basic information that helps them to get started. Just like in real life, they need to learn to ask the right questions, find relevant information, and also to make rough estimates in some cases. Because of this, every student or student team has different outcomes. This improves the motivation of the students towards the case. The students also learn to present their ideas, the business model, and the investment plan in a numerical format. Learning to summarize, present, convince people, and keep presentations short is important as the investors or managers typically do not have much time. The pitching time is limited only to two to three minutes, and the students can use posters or audio-visual aids in the presentation. After the pitch, the investor gives them immediate feedback, which is a great learning experience for the students.

This generic model for developing intensive teaching supports also the Learning by Developing (LbD) model which was developed at Laurea UAS. The LbD action model emphasizes acting together in projects connected to real-life situations and centers on development projects that are genuinely rooted in the world of work (Raj 2014). During the past years many students have chosen a capital budgeting case from their own workplace and during the course they have prepared cash flow estimates for their own project instead of the hotel case. We have seen that the developed model can be used for many different types of projects in all kinds of organizations.

The lessons learned from co-developing the new concept and modernizing the case of management accounting shows a variety of promising outcomes. First of all, the co-developed concept works. The team has verified the concept at two levels of education. The concept works at both master's and bachelor's levels. Secondly, the concept works in different geographical areas and as part of diverse curricula (those of Finland and the Netherlands). The third lesson is concerned with the holistic and multidisciplinary view on managing organizations; strategic decision making and business modeling are linked to the financial planning process. This shows the students that strategies and business models need to be feasible and fact based. The fourth lesson is that the intensive week seems to work better. The spirit of learning, the storyline, and the playfulness of the case are easier to keep up in an intensive course. The case shows that teaching over a longer period is also possible. Finally, the non-accounting students and professionals learn to understand the need for management accounting. As stated by one of the students:

“Now I understand how these are used in practice.”

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Kaisa Puttonen & Erja Huovila

INFORMATION SPECIALISTS AS PARTNERS IN LEARNING BY DEVELOPING

Abstract

Laurea Library has various roles as a partner when the pedagogical action model LbD (Learning by Developing) is put into practice in Laurea. The library's role as a partner within the LbD context is realized in: multidisciplinary guidance, project partnership and acting as a working-life client. This article presents some examples of these partnerships. The library staff is a specialist group within an educational organization. Collaboration is at the core of the library's LbD involvement. The possibility to share expertise in different contextual settings results in the library staff having a better understanding of students' needs, lecturers' work, Laurea's pedagogy and regional working life.

The purpose of this article is to present how Laurea Library is a partner when the pedagogical action model LbD (Learning by Developing) is put into practice. The library staff has been involved in implementing the model from the start. The ways and depth of the involvement has matured during the years and produced new working practices in the library. The library staff does not represent Laurea's teaching staff. It is a specialist group within an educational organization. Therefore, in the LbD context, the library staff can be categorized as working-life representatives. The lecturers' roles have been discussed related to the LbD process, but the roles of other expert staff groups have received less attention. The library has a unique position in Laurea. Officially 'Information and publication services' is a team in the Development Unit (Education and Regional Development), which offers a daily crossroad for information and interaction for students and staff.

The core characteristics of LbD – authenticity, experience, research orientation, creativity, partnership – exist in the library's multidisciplinary and multiprofessional collaboration. The characteristics' importance varies according to the ongoing collaboration. The core characteristic for the library is partnership. Therefore, this article concentrates on partnership. An essential outcome is professional growth via learning in a community. Furthermore, experiences from LbD partnerships are shared among the library staff.

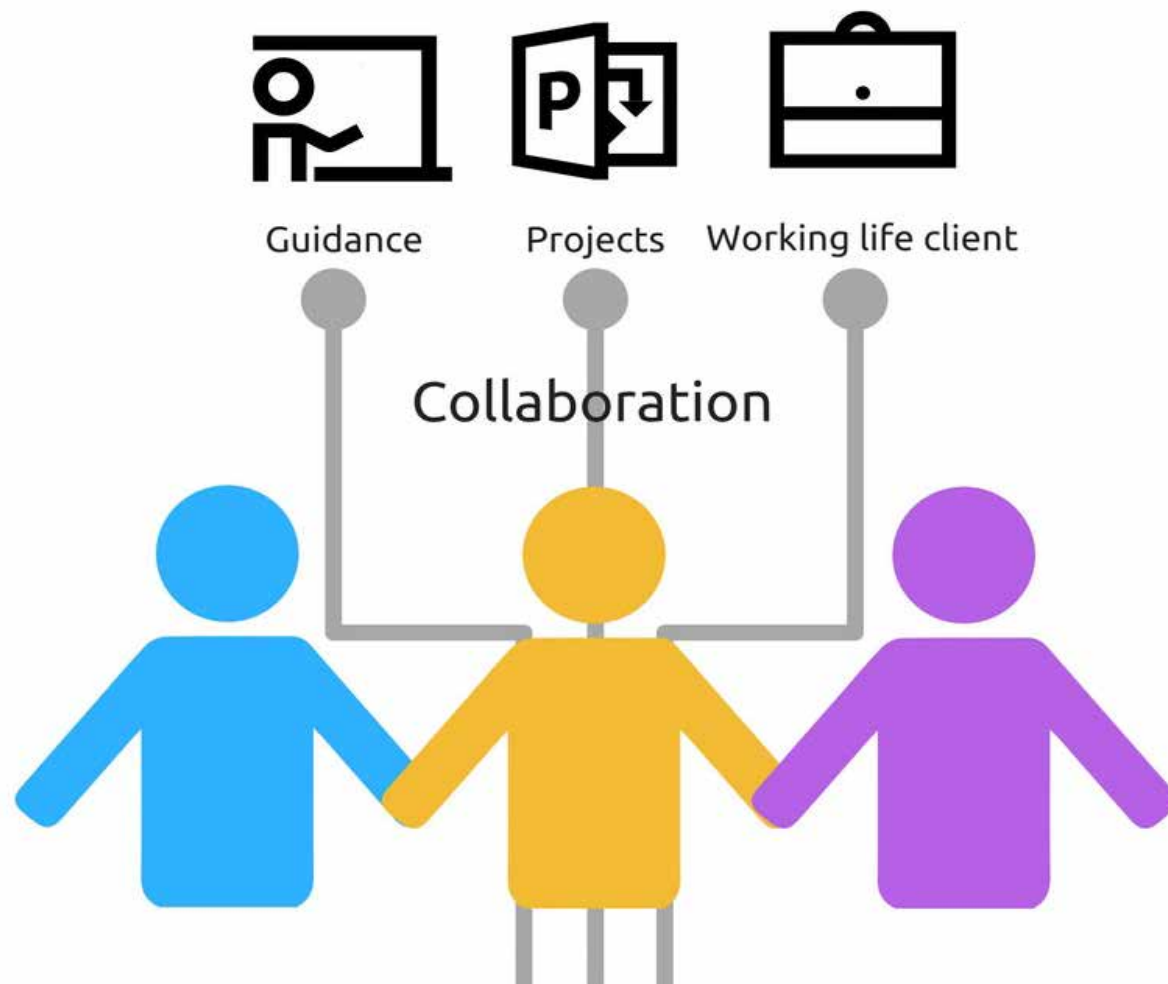
Grodal, Nelson and Siino (2015) and Bruns (2013) studied working together across domains of expertise. In both cases the work was innovative, required collaboration and aimed at creating new knowledge. The same elements are essential in LbD's equal partnership. Grodal et al. focused on help-seeking and help-giving as organisationally embedded processes. They found that the processes can be dyadic or it can involve several individuals with shifting roles. Helping clusters could evolve in the long run. The researchers suggest that 'helping is a process through which participants come to a new and shared understanding that can benefit all participants.' Being a part of the process also expands the understanding of colleagues' tasks and may create a positive feeling of joint achievement and strengthen the organizational helping culture.

Based on our experiences, we noticed resemblances to our involvement in LbD partnerships. Help-seeking and help-giving in multidisciplinary collaboration lay the foundation for building knowledge in our community learning. Gradually, expanding our involvement has begun by creating helping clusters from other fields. In addition, joint experiences have strengthened the bond for future multidisciplinary collaboration.

Bruns (2013) analysed working alone and together during cross-boundary scientific work. She concluded that partnerships and creating knowledge can close up during the phases when participants work alone. These phases, namely counterprojection and alignment, are collaborative practices which enable participants to contribute to the ongoing work. Counterprojection means that knowledge of other domains is taken into account and experts ponder what effect their own expert practice will

have on other domains. “Can you?” questions changes to “Can I?” Alignment refers to modifying one’s expertise into a novel one which meets the requirements of another domain. Collaboration when working together appeared in the study as joint assessment and consultation.

Everyday encounters between information specialists and lecturers are not as frequent as encounters among lecturers themselves. We see that this does not weaken mutual commitment or trust during ongoing LbD projects. Working alone during the LbD process offers time to analyse one’s expert practices compared to others. The insights can be intertwined and integrated during collaboration when experts work together. The result is that practices are transformed and new working habits originate.



The information specialist as a partner in different contexts

The library’s partnership in the LbD model is grouped into three categories: multi-disciplinary guidance, participation in projects and acting as a working-life client. In all categories there is a culture of partners helping each other and varying between working alone and together. Moreover, both individual and community learning and creating knowledge are part of the partnerships. Next, the partnerships in the categories are clarified through examples.

Multidisciplinary guidance with Laurea lecturers

In learning situations, the information specialist is the expert on information sources, the lecturer of the substance. When the ideas of other participants are added to the situation, it is possible to co-create among LbD partners. All the participants learn together.

The first example of multidisciplinary guidance is from 2005 when guidance commenced during a nursing care project called ‘Primary nursing care and documentation’. Nursing lecturers and an information specialist co-guided students and hospital staff concurrently in information searches. This meant that two working-life groups interacted during the learning situation: nurses and information experts. Information retrieval in the hospital computer class focused on evidence-based nursing and other scientific articles (Puttonen & Huovila 2015). The information specialist’s approach to scientific information was introduced to all participants: students, lecturers and nurses, and thus complemented the lecturers’ approach. The expertise of the nursing staff contributed to creating new knowledge when all were equal partners in the working place context. The added value of shared expertise and cumulative knowledge were recognized in community and individual learning. Thereafter a similar model of guiding together, which emphasizes finding and sharing scientific information, has been adapted in numerous information retrieval workshops (Puttonen & Huovila 2011).

The second example is about multidisciplinary co-guidance in online environments. An ICT lecturer and information specialist have been running a course together on a virtual learning platform since 2011. It is for distance learning students to complete their bachelor’s degree online. The course combines asynchronous learning in an online environment and synchronous online real-time co-guidance in a virtual classroom. The partnership has created a new working practice for dialogical guidance, online and in real time. The partnership also prepared the library for the challenges resulting from Laurea’s trend of increasing online studies. From the students’ point of view, the information specialist was an expert of an important working-life skill, managing the flood of information (Puttonen 2014; Haikonen & Puttonen 2016).

Partnership in co-guidance reinforces the capability to recognize, communicate and share expertise with other professionals. In other words it strengthens the openness

to multiprofessional views and expertise. It also increments both pride about one's know-how and respect of the expertise of others. However, results from successful partnerships require active networking outside the library, long-term commitment and the boldness to be agile and take advantage of possibilities.

Project partner

Laurea's information specialists have worked in multidisciplinary groups, not only as information seekers but also as knowledge constructors. According to Lahtinen (2016), the information specialists' work is 'interwoven with the practices of knowledge sharing, creation and use in learning communities'. The first experience for information specialists was in a project creating an innovation strategy for the Uusimaa region (2006–2007). All of the participants were expected to represent their working-life expertise and contribute to co-creating new knowledge in working groups with different themes. This experience laid the foundation for future participation in LbD projects.

The following involvement was in a national project developing working-life practices in health care nursing documentation (eNNI 2008–2010). In evidence-based nursing, it is very important to use and understand research information when developing nursing in health care. The information specialist was an equal partner in planning, implement and evaluating in this project and its workshops. The participants were nursing students writing their theses, hospital nurses, nursing lecturers and a clinical nurse specialist. Learning together in the versatile, interactive situation provided all participants with information about existing health-care information practices, current working practices at hospitals, and know-how on information sources and the newest trends in health care. Simultaneously the project enhanced experiential understanding of the regional working-life needs. The newest trends in health care and evidence-based information were shared with hospital wards. Regarding knowledge creation, many lecturers of nursing care, an information specialist and bachelor students in the Lohja unit have been involved in the process of the development of a dissemination method (Ora-Hyytiäinen, Ahonen & Partamies 2012). Working together in the LbD way has been presented in Denmark, Latvia and Estonia. In her dissertation Rajalahti (2014) suggests that intensifying collaboration between nursing lecturers and information specialists helps to develop and keep the lecturers' information skills up to date.

The following two examples are from EU projects. Laurea was a partner in a European Commission Marie Skłodowska-Curie action that funded a Marie Curie project 'European Researchers' Night' in 2011. Tourism students could earn study credits by participating. The information specialist represented the working-life approach to EU information when she discussed the expected workload and outcomes with the responsible tourism lecturer. One assignment was to set up the compulsory European Corner for the event. This was done under the theme 'Tourism is research too' in collaboration with Europe Information in Helsinki and Visit Finland. The

project was useful for all in updating skills on EU information databases and websites. The experience as a member of the project planning group provided hands-on information on how the project cycle works in Laurea. This information was essential to share with library colleagues (Matilainen & Rönner 2011; Huovila & Puttonen 2012).

The other EU example is a national ESF funded project which designed an online course on sexual health. Laurea's information specialist was the only representative from the information field among university of applied sciences' lecturers and pedagogical experts. This project did not include students. Still, the participation provided useful information on project management to the library staff. Also, the multiprofessional collaboration with partners from health-care non-governmental organizations gave rise to a help-seeking cluster (Kalema 2013; AYYOT 2013).

In the above examples, information specialists stepped outside their comfort zone and had to find a new role as experts of information. The experience of project participation has widened the understanding of how to utilize our professional expertise, both among the library staff and others. Networks have widened as a result of this new kind of partnership.

Working-life client

The last partnership category is the working-life client. In this case, the library negotiates with the lecturers on how the library's premises can serve as an authentic workplace environment. Students gain credits when they develop the space and services as part of their studies. In other words, the students contribute to developing their own everyday learning environment. Consequently, the library services benefit from true users as developers.

The library space offered an authentic environment for testing a new method involving eye tracking in user research. A master's degree student developed a see eye to eye (cizi) model, which combined qualitative data with gaze replays in a service design process. The data from this study was used to improve the library space. Later the researcher taught eye tracking to students on a methodology course. She then guided a student group in conducting a follow-up study in the library space. The follow-up (with the same research questions) provided information for the library on how the changes after the first study have affected the use of the library space (Hyökki 2011; Hyökki & Puttonen 2012; 2014). Recently, the library has acted as a client in a service-design project and co-created library services with students using service design methods.

The role of a working-life client can also be included in a course as an assignment. An example of this small-scale collaboration is ordering leaflets and posters from a graphic planning course or a video from a media course. When the library acts as a working-life client, it is easy for the lecturer to discuss the expectations and

schedule the assignment. The information specialists can interact with students in a new role, which has received positive student feedback. Students see the concrete results of their development work in their learning environment. It would be important to increase partnerships as working-life clients, because it is an efficient way to develop services with users.

Conclusion

This article demonstrated Laurea Library's roles in LbD partnerships. Multidisciplinary guidance has evolved the most and some new practices have changed into common ones. Integrating into projects is difficult because the partnership should already begin when the proposal is written. When the library has succeeded in this, the helping culture has significantly increased the know-how on project management. The role of a working-life client is a good way to engage in the campus's learning processes.

Being a contributor and receiver of knowledge and experiences in collaborating practices has opened the possibility to think outside the box. Facing new challenges in new roles leads to professional growth. Overall, the possibility to share expertise in different contextual settings results into a better understanding of students' needs, the lecturers' work, the organization's pedagogy and regional working life. At its best, the result of LbD partnerships is learning together in innovative collaboration, which in turn results in creating new knowledge and practices.

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Teija-Kaisa Aholaakko & Outi Ahonen

THE OUTCOMES OF LEARNING BY DEVELOPMENT-ORIENTED CANCER NURSE EDUCATION

Abstract

A postgraduate cancer nursing education at European Qualification Framework level 6 was completed by a group of professional educators working in the Federation of Universities of Applied Sciences. Use of the Learning by Developing approach enabled the working-life integrated studies to be pursued according to personalised learning contracts and facilitated meeting the actual and regional needs in the care of the cancer patients. It empowered the dialogue between clinical and theoretical nursing, and encouraged students to use evidence and development methods. Learning was assessed by The Cancer Nurse Competence Profile. It was constructed to give structured and personalised feedback both during and at the end of studies. It gave continuous feedback for the student, employer and teachers and measured the progress in chosen generic and clinical competences in a reflective manner.

The self-reported data was collected within two of three institutions. Thirty-six nurses were assessed for patient-oriented clinical competences; innovative development; empowering cancer nursing; and guidance, consultation and professional communication competences. Summation variables were constructed by the competence areas. The improvement in competences, and the differences between students' learning goals and self-reported improvement in competences were analysed by paired sample t-tests comparing the mean values of the summation variables. The quality of all the four scales measured by Cronbach's α reliability coefficient was very good.

The postgraduate cancer nursing education was effective in producing significant improvement within all the four competence areas. The stated goals of students were realised in one competence area: innovative development. Students' self-assessments were more critical at the end of the studies than in the beginning.

Keywords: cancer nursing, competence assessment, higher nursing education, Learning by Developing (LbD)

Background

The Learning by Developing (LbD) pedagogic model – combining research, development and innovation (Kallioinen 2008, Taatila & Raji 2012) – was used in developing evidence-based and patient-oriented regional cancer care within two postgraduate nursing groups. The studies were completed in 2013 and between 2014 and 2015 within three universities that were members of the Federation of Universities of Applied Sciences (FUAS). The ideas of Nonaka and Takeuchi (1995) – combining theoretical and practical knowledge in practice, of practice and for practice (Raji 2007, 2013, 2014) – were used in generating innovative solutions and models for regional cancer care. The education was targeted at professionals who had long work experience but not necessary the required digital learning skills. By applying the LbD action model it aimed to empower the dialogue between clinical and theoretical nursing, and encourage the students to use evidence and contemporary methods (Ahonen, Peippo, Päällysaho, Pirilä & Murtola 2015). The LbD model inspired and encouraged all the participants (the various UAS's staff, students and partners) as learners working together through joint efforts and gaining new competences (Kallioinen 2008, Raji & Niinistö-Sivuranta 2011).

'The Developer of Cancer Care' was a 30 grades postgraduate nursing education course enhancing competences in cancer nursing and in work development at European Qualification Framework (EQF) level 6 (EU 2008, 2013/55/EU). To fulfil the main target for the course, set by Ministry of Education and Culture, the urgent and contemporary regional needs in cancer nursing were identified in close co-operation with public and private employers, students and educational specialists in FUAS. The competence assessment was based on a holistic model of professional competences identified as the integration of knowing, understanding and acting, and situation management (Raji 2000). In terms of the various types of knowledge, the competences were seen as an integrated whole that combines 1) knowledge written in theories and models, 2) knowledge embedded in skills and abilities, 3) moral knowledge and 4) experiential knowledge (gathered by acting and experiencing).

The situation-specific and context-related cancer nursing competences (Im & Meleis 1999) included criteria from the globally accepted competence descriptions (American Associates of Colleges of Nurses 2008, Nursing Council of New Zealand 2012, College of Nurses of Ontario 2014), standards (ICN 2009, WHO 2009) and

research results (Eriksson, Korhonen, Merasto & Moisio 2015) applied for regional purposes. They followed Oncology Nursing Society's (2016) generalist oncology nurse competences: teamwork, professional development, clinical care, financial and quality of care. The used criteria for patient related nursing, organizational and developmental competences (Nilsson et al. 2013) and cancer nursing quality of care respected the patient's perspective (Charalambous & Adamakidou, 2014).

The 'Cancer Nurse Competence Profile' (CNCP) was constructed to enable learning process and outcome assessment, and to give continuous feedback during education. The CNCP was used as a tool for structured and personalised feedback both during and at the end of the studies. It was also used to enhance the performance of the clinical development project in line with the learning contracts between the student, employer and teachers. This study was completed in order to report both the CNCP development process and the learning outcomes of the cancer nursing students.

The study questions were as follows:

1. Were there improvements in cancer nursing competences?
2. Was there any difference between students' learning goals and self-reported improvement in competences?

Competence measurement

The evaluation was completed as part of a natural assessment of postgraduate nursing studies completed within FUAS in 2013 and between 2014 and 2015. The self-reported competences were measured by the CNCP at EQF level 6 at the beginning and end of the 30-credit studies. The process for defining the CNRP assessment criteria in close co-operation with nursing managers in regional health care organizations followed that of for the developer of surgical patient care education in FUAS (Aholaakko 2011, 2015, Aholaakko, Ahonen, Korhonen, Maksimainen, Peippo, Tuominen & Vikberg-Aaltonen 2013, Aholaakko & Korhonen 2014).

Of the 84 potential respondents in two UASs altogether 36 nurses gave their informed consent. In 2013, of the 22 respondents eight were from Lahti UAS and 14 were from Laurea UAS. Between 2014 and 2015 all 15 respondents were from Laurea. The students had previous college-level education at EQF level 5, a UAS's bachelor's degree at level 6 or a master's degree at level 7. They had to be employed during the education.

The 1) patient-oriented clinical competences (11 criteria), 2) innovative development competences (3 criteria), 3) empowering competences (2 criteria) and 4) guidance, consultation and professional communication competences (3 criteria) were measured by a four point scale (1 = clinical experience; 2 = evidence-based practice; 3 = development inside the organization; and 4 = critical and innovative regional

development). Summation variables were constructed by competence areas. The improvement in students' competences and the difference between students' learning goals and self-reported improvement in competences were measured by paired sample t-tests, even though some of the scales were somewhat skewed. The results were in line with the results from the Wilcoxon Signed Rank tests. The quality of the assessment tool was analysed as a Cronbach's α reliability coefficient. In qualitative self-reflections the students described their learning. In using the CNCP scale, the evaluative sentences were recognized before and after (\Rightarrow) the education.

The ethical board of FUAS reviewed the study plan before the permission was gained from the individual UASs. The study was considered as relevant through providing important information about the future development of postgraduate education's evaluation.

Results

There were statistically significant improvements in all four cancer nursing competence areas (Table 1). The students reported the highest improvement in innovative development and the lowest in patient-oriented clinical competences. This was also visible in the reflections documented in the CNRP. The students described the content and context of their learning within three of the four competence areas. Concerning clinical competences, the reflection was minimal or lacking. Some reflection concerning the knowledge base of cancer nursing existed.

RN 19: 'consider that I have, to some extent, developed my preparedness in cancer nursing competences...'

RN 3: 'I do a lot of patient education in my work... also consulting the family members too...'
 \Rightarrow *'There were some lectures but not much concerning my own work... Of course you can apply...'*

RN 1: 'Currently I give guidance for patients with everyday memory problems...'
 \Rightarrow *'I have participated in group guidance education... I think the multi-professional cooperation is working...'*

RN 2: 'Patient education is one of nursing's cornerstones... I consider it interesting and challenging.'
 \Rightarrow *'Through the development project I have gained contacts and networks...'*

RN 7: 'There was not much new in this area...'

RN 6: 'The real guidance occasions have been few...'

The students stated goals for their learning outcomes that were higher than the achieved learning outcomes in three of the four competence areas. Within the innovative development competence area the learning outcomes were reported to be higher than the goals. The differences were not statistically significant.

Table 1. Improvement in cancer nursing competences during postgraduate education.

COMPETENCE-AREA (NUMBER OF VALID RESPONSES)	SELF-REPORTED PRE-EDUCATION COMPETENCES	SELF-REPORTED POST-EDUCATION COMPETENCES	PAIRED DIFFERENCES	
	MEAN (SD)	MEAN (SD)	MEAN (SD)	T-TEST (P)
PATIENT-ORIENTED CLINICAL PRACTICE (N = 25)	1.83 (0.396)	2.80 (0.585)	0.97 (0.114)	8.48 (0.000)**
INNOVATIVE DEVELOPMENT (N = 24)	1.60 (0.389)	2.820 (0.627)	1.22 (0.628)	9.52 (0.000)**
EMPOWERING CANCER NURSING (N = 24)	1.77 (0.442)	2.94 (0.648)	1.17 (0.602)	9.49 (0.000)**
GUIDANCE, CONSULTATION AND PROFESSIONAL COMMUNICATION (N = 23)	1.52 (0.578)	2.72 (0.671)	1.20 (0.685)	8.37 (0.000)**

** STATISTICALLY SIGNIFICANT

RN 4: 'There is always something to develop in patient education...'
=> 'The education went well... The description of the chain of patient care was well managed... The feedback about our poster was very positive... Our article was actually and easy to read...'

Some students reflected on their progress within the LbD project and the development of the cancer nursing knowledge base:

RN 21: 'I am searching for new evidence-based knowledge more than before... I have got new knowledge of my colleagues' prograde and support for my own practice.'

Table 2. The difference between cancer nursing students' stated learning goals and their self-reported improvement in competences.

COMPETENCE-AREA (THE NUMBER OF VALID RESPONSES)	STATED GOALS	SELF-REPORTED LEARNING OUTCOMES	PAIRED DIFFERENCES	
	MEAN (SD)	MEAN (SD)	MEAN (SD)	T-TEST (P)
PATIENT-ORIENTED CLINICAL PRACTICE (N = 23)	2.89 (0.586)	2.84 (0.592)	0.05 (0.722)	0.329 (0.745)*
INNOVATIVE DEVELOPMENT (N = 21)	2.73 (0.520)	2.91 (0.678)	0.18 (0.623)	1.342 (0.195)*
EMPOWERING CANCER NURSING (N = 20)	2.95 (0.394)	2.92 (0.693)	0.02 (0.697)	0.160 (0.874)*
GUIDANCE, CONSULTATION AND PROFESSIONAL COMMUNICATION (N = 21)	2.94 (0.5123)	2.786 (0.512)	-0.15 (0.693)	-0.997 (0.331)*

* STATISTICALLY NOT SIGNIFICANT

RN 22: 'Through my development project I have got much new knowledge with which to meet patients. Earlier I considered that it was not possible to develop by interacting with patients, now I understand that I was very wrong. I have read varying studies and deepened my theoretical knowledge concerning patients' feelings and crisis experiences. During the discussions with my mentor and working in society I have reflected on my ways of working and I have also learnt something about myself...'

RN 26: 'After the education I am able to discuss with patients about their situation and I am able to mentally support them. The feedback I have got from patients has been encouraging. It is easier to express my views after being made aware of my own resources and being able to assess my knowledge base and trust in it.'

RN 30: 'During the education I created a holistic approach to cancer patient care. Developing my own patient reception has been interesting and my patient-orientation has been deepened.'

The reliability of the study

The CNRP was based on the 'reflection profile' assessment tool, the construction of which started in the beginning of the surgical nursing education in 2010 (Aholaakko 2011, Aholaakko et al. 2013, Aholaakko & Korhonen 2014). In this study the response rate was low. Due to the lacking participation and high number of missing values it is not possible to generalise the results. Despite this, the statistical analyses revealed reasonable feedback both for the educators. The publication of these vulnerable results is aimed to facilitate future more systematic competence-based evaluation. In addition to that, it was considered important to reveal the urgent need to improve the adherence of both teachers and students to real-life competence evaluation. According to the spirit of LbD, reliable process and outcome evaluations are prerequisites for continuous competence assessment and the learning of all participants. Continuous improvement with relevant evaluation indicates targeting in the direction of high-quality education.

The reliability of the scales were assessed by Cronbach α values measuring the internal consistency of the scales (Table 3). All α values were high despite the value for the empowering cancer nursing scale. The low response rate weakened both the analysis and the interpretation of the results. The scale was not used in a very coherent manner. It is important to improve the face validity of the questions and the measurability of the competences (National Council of State Boards of Nursing [NCSBN] 2010) in the future. Some criteria were excluded from the analysis due to zero variance. This may indicate coherent reflections or the poor face validity of the competence descriptions in the CNRP (Charalambous & Adamakidou 2014). It may be that some expressions like 'service design' were difficult to understand or apply to one's work.

The validity of the competence criteria and areas were based on the selective use of international competence studies (Meretoja 2003, Meretoja, Leino-Kilpi & Kaira 2004, Meretoja, Harjula, Lehto, Timonen, Kallakorpi, Orvoma, Kotila & Kangas 2009) and clinical descriptions (Ahonen et al. 2012) in order to meet the regional

needs. Also the long experience of educational experts was used. Despite that, both the face validity and content validity of the scales need to be improved before future use.

Qualitative data supported the competence evaluation by opening the content and context of cancer nursing during the education and the knowledge base the students developed. In the evaluative texts the students reflected the essence, sources or qualities of the knowledge they used. The structured CNCP scale, combined with open reflections, facilitated the assessment of the competence levels of the students related to EQF level 6. In the future it is essential to retest the psychometric properties of the reviewed evidence-based competence scales in a larger study group (Meretoja, Leino-Kilpi & Isoaho 2004, NCSBN 2010, Nilsson et al. 2013).

Discussion

The CNRP personalised the process and outcome assessment and supported the professional growth of the students in line with the stated competences. The improvements in all competence areas were statistically significant, even though not all of the ambitious goals of the students were realized. The reflections concerning the learning outcomes varied between students. One reason for this may be the differences in the students' previous education, work experience and working environments.

Table 3. The reliability of Cancer Nursing Competence Profile (CNCP) scales

CNCP SCALES (19 ITEMS)	GOALS	PRE- EDUCATION	POST- EDUCATION
	M = 2.04 α = 0.944 N = 3* ITEMS = 16***	M = 0.40 α = 0.922 N = 6* ITEMS = 18***	M = 2.92 α = 0.942 N = 4* ITEMS = 18***
PATIENT-ORIENTED CLINICAL CANCER NURSING (11 ITEMS)	M = 2.4 α = 0.914 N = 4*	M = 1.714 α = 0.931 N = 7*	M = 2.79 α = 0.837 N = 6*
INNOVATIVE DEVELOPMENT (3 ITEMS)	M = 2.54 α = 0.831 N = 4*	M = 1.68 α = 0.848 N = 22*	M = 2.87 α = 0.721 N = 20*
EMPOWERING CANCER NURSING (2 ITEMS)	M = 2.77 α = 0.932 N = 22*	M = 1.75 α = -0.049** N = 28	M = 2.89 α = 0.799 N = 24
GUIDANCE, CONSULTATION AND PROFESSIONAL COMMUNICATION (3 ITEMS)	M = 2.83 α = 0.892 N = 22*	M = 1.47 α = 0.814 N = 22	M = 2.69 α = 0.610 N = 22

M = mean; α = Cronbach's reliability coefficient; *Number of valid responses; **The value is negative due to a negative average covariance among items: this violates reliability model assumptions; ***The determinant of the covariance matrix is zero or approximately zero: statistics based on its inverse matrix cannot be computed and they are displayed as missing values in the system – items with zero variance were removed from analysis.

Some were working in home care or primary health care, some in specialized tertiary care. The reflections concerning clinical care were few. This may indicate that some topics in cancer care, like chemotherapy, did not feature the everyday work of the students or that the CNRP did not enable the measurement of the relevant clinical competences (Charalambous & Adamakidou 2014). The role of the teacher in the LbD project was found to be challenging. The need for the stronger backing up of students towards continuous competence-based evaluation was evident. In the application of the LbD action model one of the reported weaknesses is the inability of the teacher to motivate the student to do independent work (Kallioinen 2011).

The students reported not achieving their stated goals within every competence area. Even if the differences were not statistically significant, they were visible. One reason for not improving the competences may be that the critical thinking of the students progressed. The results of previous Finnish competence studies – according to which nurses reflected their professional competences more critically than nursing managers did (Meretoja & Leino-Kilpi 2003, Meretoja et al. 2009) – support this interpretation. Another reason may be that the workplaces did not commit to the projects (Kallioinen 2011). The targets of the development projects were stated at the organizational level. It may be that the students thought about not achieving these highest rankings of the competences at the level of critical and innovative regional development. After all, they revealed professional competences at a national level by producing articles about their development projects in an e-publication (Ahonen et al. 2015). Within a research, development or innovation project the goals are usually directed either to solving workplace problems or to improving students' competences (Kallioinen 2011). Within this education the goals were focussed on both learning (developing competences), and developing processes and practices in the students' workplaces.

Conclusions

The results showed that the outcomes of the education were positive, even if the reliability of the evaluation was to some degree compromised. The use of both qualitative and quantitative data facilitated the learning process's evaluation and made visible the learning outcomes. In the future it is essential to improve the reliability of the CNRP by better wording the competence criteria and by improving the applicability of clinical cancer nursing descriptions. In the future the response rate could be increased by using an e-questionnaire and by implementing the evaluation as natural part of the studies in a more efficient way.

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Authors' contributions

Study Design: Aholaakko, Teija-Kaisa; Data Collection: Ahonen, Outi and the Cancer Nursing Education teachers in Lahti University of Applied Sciences –Maksimainen Anniina and Tuominen Maria; Analysis: Aholaakko, Teija-Kaisa; Manuscript Preparation: Aholaakko, Teija-Kaisa and Ahonen, Outi.

A process of multi-dimensional integration of research, regional development and student work was realised in Case Porvoo, producing visions, knowledge and competence for all parties. The vision for the well-being of families is, now and in the future, based on a citizen-centered approach where proactive child protection starts at the prenatal clinic. The group of actors in the area believes that the proactive approach and data modelling offer new possibilities whose utilisation and development together with Laurea UAS should be continued.

Introduction

The basic principle of futures studies is that the future cannot be predicted, and that it is not predetermined as it can be influenced by our choices and actions (Amara, 1981). Perceiving what is possible, what is probable, and what is desirable and practicable is essential. It is important that these three tasks are performed separately so that, rather than getting possible, probable and desirable futures mixed up, we can come up with a comprehensive set of alternatives that describe different possible worlds. The actors' perspective is essential in futures studies; it ensures that the alternative futures will be used to make decisions concerning the future and to take actions affecting the future. Alternative scenarios allow the actors to look at the world through different spectacles and assess the situation through 'what if' type evaluations (Meristö, 1991). Besides being completely theoretical in nature, futures studies also comprise practical work that influences real actions (Masini, 1993). Action scenario work (Meristö, 1991) combines research and development in an effective process that produces not only alternative future scenarios but also actions based on these scenarios. (Meristö, 1991, see also Bell, 1997)

The framework of Learning by Developing (LbD) used in Laurea UAS (Raij, 2014; see also Kallioinen, 2013) combines theory and practice, to which the students and the work carried out by them add spice. The actors in Case Porvoo included child protection ecosystem actors (practice) representing society, companies, NGOs and individuals, Laurea's team of researchers (multidisciplinary theory) and a student team (practice + theory). Laurea's multidisciplinary research team had expertise in such fields as pedagogy, sociology, business studies, futures studies and nursing science. This made it possible to take into account a broader societal frame of reference and changes in the work, including the social and health services reform or economic development, but also issues and perspectives that play a key role for the well-being of individuals and families.

The work discussed in this article was carried out in connection with Case Porvoo as part of the MORFEUS project funded by the Finnish Funding Agency for Innovation Tekes. The aim was set at proactive promotion of well-being in families with young children, reducing and gradually even eliminating the need for child protection work. The results of the work were discussed in different phases by the project's steering group, in which child protection actors and stakeholders from different sectors involved in child protection work were represented: Save the Children Finland,

Tarja Meristö & Tarja Kantola

ACTION SCENARIO WORK AS RESEARCH-ORIENTED LEARNING – CASE PORVOO IN THE MORFEUS PROJECT

Abstract

Future child protection ecosystems will change as a result of societal change (health and social services reform), technological change (digitalisation) and changing market structures (customer's freedom of choice, multi-actor supply network). The increasing diversity of families will also set new requirements on the well-being service ecosystem, which will have to be taken into account individually, yet cost-effectively and drawing on the possibilities of data modelling.

In a predictive section realised by Laurea University of Applied Sciences (UAS) as part of the MORFEUS project, we implemented a workshop process with the child protection actors of the city and area of Porvoo, in which child protection ecosystem actors, experts by experience, Laurea's project researchers as well as teachers and students came together to seek answers to the following questions among others: What is our vision for the welfare of a family with young children, now and in the future? Which change factors in the operating environment affect the future outlook and developments? Which factors will block or slow down the renewal of the child protection ecosystem and services? What kind of a child protection operating model, and data model that supports it, will be needed to ensure that the child protection service ecosystem can collaboratively empower families to maintain their grip on everyday life?

Finnish Central Association of Mental Health, City of Porvoo, Kalliola Settlement, A-Clinic Foundation and Sosiaalitalo Oy.

Futures studies throw light on issues of which we have no experience or solid evidence as yet (Meristö, 1989). In order to glean knowledge about the future, weak signals must be recognised, early signs of change must be interpreted, and taboos must be exposed. Child protection is an area where early intervention is particularly vital. When can you say with certainty that there is cause for intervention? (Kantola & Meristö, 2016).

The method used in Case Porvoo was action scenario work (Meristö, 1991). The knowledge base was built on interviews with experts, results of an online survey addressed to the actors, and the production of perceptual knowledge in workshops. Laurea students took part in the work in a variety of ways: they conducted interviews with experts to draw attention to viewpoints that were overlooked in the workshops and tacit knowledge, participated in the workshops and produced theses and project work. The students also produced thematic material on both the theory of child protection and its practices in the work of school social workers and special-needs kindergarten teachers as part of their projects in the study unit Service innovation development. Research-oriented learning was perceived as a multidimensional and multi-level phenomenon in the project, which included regional learning (cf. Ahonen et.al., 2014).

A case as a learning space

In this article, we look at Case Porvoo as a learning platform and a learning space (Kantola, Lassila, Mäntylä et al., 2010; Kantola, Lassila & Sipilä, 2011), in which the object of research and development is the child protection ecosystem and its practices. Learning is thus understood as practice-based learning (see e.g. Gherardi, 1999; Nicolini, 2011; Orlikowski, 2000; 2002), in which research plays an essential role for



producing knowledge and as part of regional co-development (Kantola, Hirvikoski, Lehto et. al., 2014; Rantanen & Kantola, 2011).

Case Porvoo offers learning opportunities and spaces at multiple levels: firstly, at the ecosystem level, where different child protection actors are peer learners but also learn from the research group and the students. Secondly, at the level of students where, in line with LbD pedagogy, the students learn about the theory and practice related to the actual substance (child protection) but also about research methodology, networking and team work. Thirdly, the research team learned to recognise different roles as a community together with the ecosystem actors, and the research team members also learned from each other about the perspectives of different disciplines and their methods for approaching issues related to the problems of child protection. Members of the case families also learned new things not only about the service ecosystem, its different actors and the services offered by the actors but also about themselves and each other when they processed their personal situations and the reasons that had led in the need for child protection measures in interviews together with the members of the research/student team members (Meristö, Kantola & Lankinen-Lifländer, 2016).

In Case Porvoo, the examination was based on mapping taboos (Kettunen, 2007) that can prevent those involved from seeing the real situation or need for change. Taboos have often come into existence over a long period, and they thus reflect historical progress, the impacts of which extend to the present moment and may overshadow the future, even preventing those involved from seeing future opportunities. Based on online survey data, Case Porvoo also investigated the differences between the current status and the desirable future status using so-called matched pairs. The findings indicate that the voices of the customers/families should be heard more clearly in the future, responding to the earliest signs of change, or the so-called weak signals or worries, rather than correcting mistakes or shortcomings. Looking into the future opened up a perspective of visionary management to the entire ecosystem, which puts a lot of emphasis on foresight knowledge, rumours, weak signals or, in case of child protection, worries, and we thus referred to visionary management of the ecosystem as worry management (Kantola & Meristö, 2016; Meristö, Kantola & Tuohimaa, 2016, in print) in the context of social and health services. When a worry is perceived as knowledge, feelings become a key part of knowledge and thus also an object of collective learning in the context of research-oriented development. (see e.g. Gherardi, 1999) Management is here seen as a key function that enables a multi-actor ecosystem to pull together (see also Rauhala, 2014).

A future-oriented case made it possible to formulate the research questions more accurately as follows: Q₁ In what kind of a world and operating environment will families with young children be encountered and the needs for child protection be defined in the future?; Q₂: What service concepts will be used to meet the different future needs?; Q₃: How can data modelling be used to improve the functioning of the well-being service ecosystem in practice, remove bottlenecks and strengthen enablers?

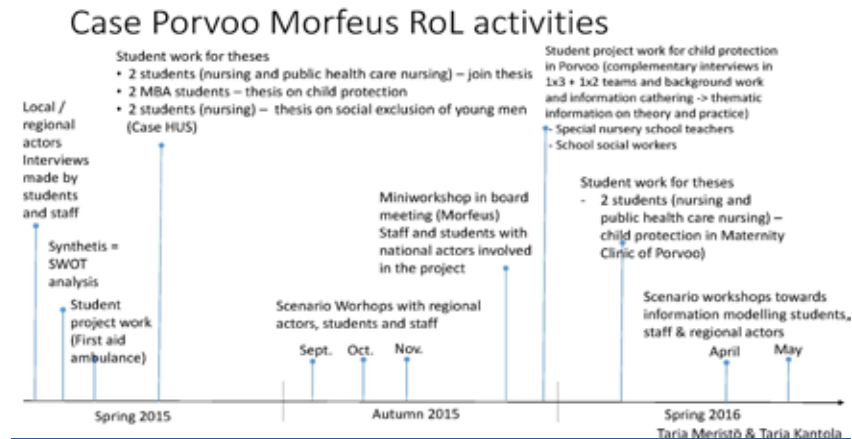


Figure 1. Case timeline and Research-oriented learning activities in Case Porvoo.

The students' multilevel and key role is seen in the timeline shown in the figure as different activities associated with learning. The students acted in the role of researchers under guidance but independently; at the same time, they were also learners, and to some extent performed the same tasks as employees engaged in the practical work when participating in Case Porvoo workshops.

The essential aspect of the integration of students in research and development is for them to build their personal researchers' and developers' identities as part of their professionalism, which they also mentioned in supervision discussions. (see Bruni & Gherardi, 2002; see also Ahonen et al., 2014).

Insights: Research questions (Q) and Carriers of learning (CL)

The research questions were summed up as the following three entities:

Q1: In what kind of a world and operating environment will families with young children be encountered and the needs for child protection be defined in the future? (world view/operating environment = scenarios);

Q2: What service concepts will be used to meet the different future needs? (child protection/services = concept design);

Q3: How can data modelling be used to improve the functioning of the well-being service ecosystem in practice, remove bottlenecks and strengthen enablers? (WIM [Wellbeing information modeling]/ecosystem practices/enablers/bottlenecks)

Firstly, we sought answers to the question of how the world and the operating environment of well-being services will change and described them through different scenarios. Secondly, we identified new needs and opportunities for child protection services now and in the future by conceptualising well-being services for a case family and its members in the different scenarios. Thirdly, we built a foundation for data modelling as part of the area's ecosystem and described ecosystem practices, both enablers and bottlenecks, and looked for alternative solutions that would enable streamlined operation in different cases.

The future scenarios work in Case Porvoo served as a mediator of multi-level learning in the child protection ecosystem. (Jyrämä & Äyväri, 2007). To ensure that the new understanding of the child protection ecosystem and its actors created through this work would also extend to the daily child protection work, carriers of learning are also needed (see e.g. Miettinen & Virkkunen, 2006). They play a key role in ensuring that the insights and new visions are mainstreamed in everyday practices and form a sound basis for the activities in the future.

The challenges to creating Carriers of learning (CL) in Case Porvoo can be simplified and placed in four groups:

CL1: Future-orientation: from future to the present; solution-centric revolutionary approaches needed

CL2: Real-life multi-voiced process with real-life context activities -> from data and worries towards visionary knowledge (1-year period); students' essential role in producing data, especially on blind spots

CL3: Continuous feedback/participatory design (scenarios/concepts/WIM)

CL4: Shared visibility/deeper understanding/empowerment/motivation

Learning based on future orientation "from future to the present" stresses a solution-oriented approach and even radical operating models that enable us to respond to future challenges already today. A future-oriented, multi-voiced practical process expands the concept of knowledge from verified knowledge to also include hints that anticipate change and minor signs of change, weak signals or expressions of worry, and emotions. Continuous feedback is a possibility that will allow us to constantly update our ideas of changes in the operating environment, new service concepts and their effectiveness, and the effectiveness and modelling of the entire well-being service ecosystem alike. Transparency and trust are elements that promote a better understanding of not only those needing services but also the service ecosystem actors. Motivation and empowerment are highlighted, and possibilities for implementing new solutions, also radical ones, are improved when the different actors, including the customer, are subjects rather than just objects of changes and actions.

Conclusion

Future orientation as the guiding principle of Case Porvoo has enabled achievements that could not have been reached by only keeping to the present time and the past. The uncertainty of future knowledge and tools for processing it have enhanced the possibilities that all ecosystem actors and also the members of research teams in different disciplines have to focus on hints that indicate change and to develop a foresightful approach. Worry management (see Nanus, 1992) as an operating method gives the actors permission to bring up issues and take action when it is still possible to do something, before it is already too late. Futures studies also systematically bring a forward-looking time span to bear on the examinations, which helps determine the direction of development and also carry out temporal prioritisation, even if the resources did not stretch to everything here and now. Future orientation creates hope and helps to perceive the desired strategic intent of the future, a vision for further ahead. A vision ladder is another tool that shows in concrete terms what should be done and at what stage to help actors progress in the right direction.

In Case Porvoo, authentic links were wrought between theory and practice. The facilitators mastered the theory, and the theory was implicitly present every moment, integrated in the processes and tools that were based on research knowledge and science. While practice was not fully present, it also had an explicit presence as the object of the work was a real Case Porvoo and the authentic ecosystem actors were always in the lead role in the workshops, interviews and online surveys alike. Whereas the researchers naturally were always present, they played a minor part. The researchers considered the preconditions for success of this setting and concluded that "attitude matters". Rather than striving to assume the main role, the research team thus genuinely listened to the actors, giving space to their ideas and thoughts and enabling interaction between different actors, which was creative and produced weighed and visionary knowledge.

A case as a learning environment naturally also has its shortcomings. It was not possible to ensure the participation of all actors, and not all participants were able to attend all the workshops. The blind spots in Case Porvoo were covered by means of separate thematic interviews in which the students played a key part as producers of complementary data and also new knowledge. The case implementation was multi-voiced and multilevel to ensure that all voices were heard. The case was built on a fractal structure where the actual case and the constructed case in the authentic ecosystem environment produced visions for both the practice and the theory. In addition, the case constructed in the project environment as part of the steering group's work produced views that promoted generalisation, ensuring that the data modelling could be applied more widely. Key change factors in the operating environment are associated with digitalisation and the changing responsibilities and resources of municipalities, but also helplessness in the face of difficulties. Obstacles to using a foresightful approach and virtual solutions included outdated attitudes but also the inability of various ecosystem actors to reinvent themselves and engage in multi-lateral cooperation.

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The authors are four years of age in the photographs, both happily ignorant of child protection needs.

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Leena Alakoski & Sari Jääskeläinen

STUDENT START-UPS EMPOWERING THE LEARNING ENVIRONMENT

Abstract

The background to this case study is a joint project of three educational institutes and the City of Espoo, Finland: the InnoEspoo project. Entrepreneurship education is in need of some kind of revolution that can be managed within a university. The InnoEspoo project has been funded by the European Social Fund through the period 2013 to 2015.

The objective of this work is to make entrepreneurship education more efficient and develop new activities to support student entrepreneurship at Laurea University of Applied Sciences. In addition, it has co-created a new way to combine the capabilities of the three institutes, with each representing different educational levels, while at the same time engaging local small-scale enterprises and student start-ups so as to enrich the learning environment.

Learning by Developing (LbD) is a pedagogical model developed at Laurea University of Applied Sciences. It is based on learning through research and development in different studies and projects. Both students and teachers can develop their competences by participating in learning projects that address the phenomena and problems of real-life workplaces and enterprises.

The new learning environment has been co-created with partners. In the planning of the new environment, accessibility was made a key feature. It offered multiple ways to participate, included multiple levels of expertise in the community, and encouraged support for learning from each other. The target groups for the InnoEspoo project were student enterprises, student co-operatives, small-scale service businesses, and part-time entrepreneurs.

Key words: Entrepreneurship, learning community, learning environment, student start-ups

The entrepreneurial learning environment

The InnoEspoo project, a joint project of three educational institutes and the City of Espoo, Finland helps in creating a community where entrepreneurs and students work together in shared facilities, training sessions, and events. Simultaneously, new services for the area are created and learning facilities within the city region are opened up for the use of various professionals.

The co-creation process is discussed in service-dominant logic (Vargo & Lusch 2008). In this case study, the term co-creation is used as follows: Co-creation is a joint service development process between different partners and a key element in ensuring value for each party.

Politis (2005) has built a framework for entrepreneurial learning that demonstrates three main components: entrepreneurs' career experience, entrepreneurial knowledge, and factors influencing the transformation process. The conceptual framework enhances an understanding of entrepreneurial learning as an experiential process. The study has some implications for practice. Entrepreneurship is learned by experience and discovery; it is a slow and incremental process for an individual to acquire entrepreneurial knowledge. It is a lifelong process. In education it is important to focus on developing creativity, critical thinking, and reflection among individuals.

Professor Gibb's conference presentation (2015) gave an opportunity to learn from his experience of entrepreneurship education and learn how to make it to "rock and roll". He asserted that, to be successful, any work directed at small businesses and entrepreneurs must be based upon practice underpinned by sound concepts. Based on his experience and research, a corporate approach is very often used when working with businesses. According to him important factors that support an entrepreneurship-friendly campus are based on partners and social learning.

When acting according to the Learning by Developing (LbD) model, learning will take place in three different dimensions: individual learning, community learning, and building new knowledge. The applicability of the LbD action model can be examined through five different dimensions: authenticity, an experiential nature, partnerships, a research-oriented approach, and creativity (Kallioinen 2008). All these dimensions are strongly present in student start-ups.

The entrepreneurial learning environment is an environment where the learning is more authentic and where real-world examples of entrepreneurship provide the content for learning. In the InnoEspoo project business elements and entrepreneurship emerge to become part of the learning environment and provide business challenges suggested by students.

A practical case study empowers entrepreneurial learning

By participating in various types of development projects that address the problems and phenomena of real-world workplaces and organizations, both students and teachers can enhance their competences. When a student starts his or her own company, we cannot know how well the business will develop, but the learning outcomes will increase in the experiential process of setting up an enterprise. According to Politis (2005) the process experience is important as it provides possibilities for students or new entrepreneurs to improve their abilities.

One step has been to identify appropriate areas and practical projects that would benefit from cooperation. This resulted in four sub-projects called Training and face-to-face coaching service, Start-up course for students, Espoo Challenge Camp, and InnoVaara platform.

After the project partners' various discussions and brainstorming sessions the four sub-projects were defined and carried out as follows.

The first sub-project: The training/coaching service and value co-creation with small local companies

One of the projects involved a face-to-face coaching service that was created to support new entrepreneurs. The aim of the case was to explore how value is created in the coaching service from the perspective of the students and the small-scale enterprises taking part. During autumn 2014, four training days were organised (Figure 1). The process of "Knowledge and Inspiration" was based on four topics: customer understanding and service design, business and accounting, maintaining the entrepreneur's mental resources, and networking with other entrepreneurs. The total number of participants in the various workshops was 138 persons.



Figure 1. Four training days were organized in 2014

The second sub-project: Enhancing the skills and attitudes of student entrepreneurs

The start-up course "Starting an enterprise" was organized for students from three educational institutes. Working together with student colleagues representing different fields of education in a multidisciplinary education entirety, the students had to widen their views concerning the possibilities of business activity. A new reservoir of entrepreneurship was seeded in the capital area, reinforcing the entrepreneurship ecosystem. The boundaries between educators and learning institutes diminished. New student start-ups were established (Figure 2).



Figure 2. Laurea's student Kenneth Forsman presents his start-up company Virgo Entertainment in 2015

The third sub-project: The Espoo Challenge Camp

Two different student camps were organized (Figure 3). The two camps for idea/solution generation to address the challenges of providing a service were held as collaborations between students and the city of Espoo. In the camps, students solved challenges at the event over 24 hours. The Espoo Challenge Camp was developed and created in cooperation with the Junior Achievement Program since they had experience of arranging similar events.



Figure 3: The poster for the Espoo Challenge Camp 2014

The fourth sub-project: InnoVaara

A new working platform called InnoVaara creates a low entry threshold and an accelerator for students' business ideas and start-ups. Gibb (2015) suggested that entrepreneurship pedagogy is a requirement for entrepreneurial activities. Since there are educational institutes from different fields of expertise involved, multidisciplinary networking is natural in the context of a service platform. During its first year of operation (2014), InnoVaara succeeded in organizing several events to support thriving entrepreneurs (Figure 4).



Figure 4: Inno Bus had a tour between three educational institutes during Espoo's invention week, 2014

Results

The pedagogical model LbD supports students' entrepreneurial competences. Bottom-up interests have increased students' motivation to study more and it has inspired students to achieve new kinds of study results. In the InnoEspoo project this way of learning has been further developed. For example, students from Laurea University of Applied Sciences had the possibility to gain credits through developing their own company. This kind of practical approach is a relevant way of learning, especially in entrepreneurship studies.

The joint project with the three educational institutes has diversified the learning environment. The InnoEspoo project is one of the first steps to cooperating across educational institutes in the area of entrepreneurship development. As such the project has not yet to be fully integrated into the regional innovation system. Enhancing idea generation and developing entrepreneurship potential at a very early stage of the entrepreneurship process has been the key focus area. By so doing, the project has fostered the development of talent for the entrepreneurship ecosystem in the metropolitan area of Finland.

Cooperation and communication has increased between students from the different institutes and those studying at different levels. It has been a very beneficial experience to pay attention to student entrepreneurship. As a result of the different case implementations, new student enterprises have been established. While entrepreneurial attitudes and capabilities differ between individual students or other possible new entrepreneurs, it is important to support each individual path so as

to facilitate the flow of entrepreneurial talent and ideas into the system of entrepreneurship. Entrepreneurship is a very convenient theme for cooperation that happens at the boundaries of communities of practice.

An outcome of the first sub-project is that the experience of the coaching service increased understanding of co-creation and how it empowers participants. Students who have a start-up enterprise met mentors in the form of other entrepreneurs. Co-operation with small enterprises initiated contacts with educational institutes, with the possibility for further beneficial assignments and the potential to construct academic theses around the topics. Moreover, the project helped create a community where entrepreneurs and students work together in shared facilities and training sessions. At the same time, new services for the area were created and learning facilities within the Espoo region were opened up for the use of various professionals, including entrepreneurs.

The teachers also experienced renewed motivation. The theoretical and traditional lectures endorsed the issues that students have said they want to learn. Student start-ups empower teachers to continue their work with the method of individual learning for student entrepreneurs.

Some student start-ups have been established during the project co-operation. Student entrepreneurs challenged the learning environment all the time. It is beneficial to the educational institutes to further develop the integration of and activation between students and staff at Laurea University of Applied Sciences, so as to answer to future needs. The learning really is without the “boundaries of classrooms,” since the personnel also face new challenges. This kind of learning for students is inner-directed, and they share their business ideas in their personal development project, which also motivates teachers. The learning environment has enriched students’ enterprise projects, while the teachers and co-created community also participate in the enterprise project. The new enterprises and the challenging questions faced in the learning also empower teachers in this process and the examples have shown how authentic student enterprises are able to enrich and empower the learning environment.

Conclusions

Co-operation with student start-ups has increased the understanding of value-in-use for all participants. This supports all parties and is an opportunity to develop new beneficial assignments and thesis topics together. Students who have a start-up enterprise have found a mentor from other entrepreneurs via the project. Coaching, planning, and implementing actions together with students and entrepreneurs have also started communication and networking with representatives of educational institutions on different levels.

An experimental project with different school-level representation and different institutes is recommended. One student start-up can inspire other students to develop their own, and peer learning is efficient (Taatala 2010). As a consequence, it allows for participation in broader learning systems, such as those within industries, and a response to future changes in the business world.

It is assumed that most students pursue an employee career to begin with, while some students choose small-scale entrepreneurship and only very few pursue high-growth entrepreneurship. All these groups, however, benefit from learning about entrepreneurship as a part of their studies.

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environment that is in the process of being constructed, health service point ILONA, is part of the PALO project realised by Laurea University of Applied Sciences and Posintra. The aim of the project is to develop learning environments of a new type and to encourage an entrepreneurial operating method. The PALO project (1 January 2015 - 30 April 2017) is funded by the European Social Fund and the Centre for Economic Development, Transport and the Environment for Häme.

Keywords: creative learning environment, independent health promotion, participatory pedagogy

The cornerstones of constructing a creative learning environment

Vocational pedagogy should enable the students to use learning environments that reinforce their vocational identity and support their ability to renew themselves and develop in vocational activities. (Sutinen & Karjalainen 2014.) At health service point ILONA, student nurses and public health nurses from Laurea University of Applied Sciences encourage and activate municipal residents to adopt a healthier lifestyle and support the residents' independent health promotion efforts. The students also provide residents with encouragement and guidance in using electronic services and health technologies that promote health and well-being. The activities of health service point ILONA were piloted on Porvoo Campus and as a mobile service with local partners in spring 2016, and they will be expanded in autumn 2016. The learning environment can be used in different operating environments and curricula.

Learning environments should be creative and open to enable the development of vocational capabilities that are in step with the times. A learning environment is creative when people think and act together and interact with their community and environment. This type of communal activity often creates something new that is collectively experienced as valuable. (Nykänen & Tynjälä 2012, Tukiainen 2010.) The potential of innovations often lies in things that have been taken for granted. Innovations do not need to be as far-fetched or complicated as people often think. A good idea usually is simple and close at hand. (Tukiainen 2010.)

The construction of a creative learning environment has three cornerstones, from the perspectives of which it can be examined. Firstly, attention should be paid to the pedagogical starting points and solutions of the learning environment. Secondly, the development of the future nursing professionals' capabilities towards expertise in nursing should be scrutinised. Finally, it is essential to examine learning in a creative learning process. These perspectives should be interlinked, both theoretically and operatively.

Erja Annola & Maija-Leena Kukkonen

IDEOLOGICAL AND OPERATIVE PREMISES FOR CONSTRUCTING A CREATIVE LEARNING ENVIRONMENT

Abstract

The foundation of a successful society is a population with high levels of functional ability and well-being. An on-going reform of social services and health care will change the service structures. This reform will increasingly shift responsibility for maintaining and promoting their health and well-being to the citizens themselves. When the citizens' state of health and functional ability improve, less services are needed, and the growth of social services expenditure can be curbed. This means that the conventional patronising attitude in health care is giving way, and the initiative in looking after their own health and well-being is increasingly being shifted to the citizens themselves.

Vocational pedagogy should be one step ahead of the transformation taking place in the operating environment and respond to the change and development needs that the profession is facing. The changing operating environment challenges educational organisations to seek and find new types of participatory pedagogical solutions that allow future nursing professionals develop the capabilities they need for supporting and reinforcing the citizens' personal resources in maintaining and promoting their health.

This article looks at the construction of a creative learning environment and its ideological and functional premises. The goal is to develop a modern and experimental learning environment that is in step with the times and offers nursing students possibilities for having dialogical encounters and developing guidance competence with a deep approach. The learning

Pedagogical starting points and solutions of a creative learning environment

The pedagogical starting points for constructing a creative learning environment are associated with Laurea's Learning by Developing (LbD) action model and the pragmatic concept of learning that underpins it, which stresses acting together, activities that change the individual and the environment, as well as the significance of experiences and interaction. In LbD, formulating new operating methods and thus renewing working life is in key role. (Raij 2014.) A creative learning environment also features an entrepreneurial approach to pedagogy, creating an agile and experimental operating culture that grasps opportunities. This operating method has its risks, but at best, it represents a unique possibility of learning and finding something new and valuable. (Korpi & Potinkara 2015.)

Health service point ILONA provides the students and municipal residents with a facility for open encounters where questions related to health and well-being can be discussed. Nonaka & Konno (1998) have described a state (Ba), which may be physical, virtual or mental. It may also be a combination of all three. A learning environment of this type creates a multidimensional space where people can act individually and collectively, sharing, creating and using knowledge.

Genuine and equal encounters between people are at the core of health service point ILONA. Rather than assessing, defining and describing in advance the residents' needs related to maintaining and promoting their health and well-being, the purpose of these encounters is to allow genuine encounters to create a space where time and power is given to subjective experiences and feelings. The encounters are based on listening, discussions and encouragement. This makes it possible to prevent people from becoming distanced from questions related to their health and well-being, as they can themselves pick up topics important for them that they wish to discuss. This supports the individual's active and conscious agency, enabling him or her to form a more comprehensive idea of the factors that affect his or her health and well-being.

The ideological core of health service point ILONA builds on a sustained dialogue where the objectives of curricula and the needs created by the operating environment were taken into account. The activities of health service point ILONA have been conceptualised, and its key services and products have been described. Knowledge acquired through customer insight was utilised when creating the activities, thus striving to listen to the wishes of the residents and partners. The core of ILONA is based on the Porvoo campus, but the activities can be taken to different operating environments as a mobile service. Health service point ILONA networks with its local partners and agilely brings its activities to wherever the residents spend their time.

Development of vocational capabilities in a creative learning environment

The development of vocational capabilities in a creative learning environment is examined from the perspectives of underpinning knowledge and skills and capabilities for self-regulation. Having strong underpinning knowledge in his or her field is a key characteristic of an expert (Sarajärvi 2011). Experts can rely on theoretical knowledge to justify their activities (Mäkipää & Korhonen 2011). In addition to theoretical knowledge, an expert needs know-how, which is accumulated through experience and action. This refers to applying theoretical knowledge to practical activities, which is highly situation-specific. (Tynjälä 2010, Sarajärvi 2011.) Expertise is thought to develop as the expert reflects on questions related to his or her discipline and solves them in practical activities (Sarajärvi 2011). A precondition for developing vocational skills is capabilities for self-regulation, which means consciously targeting one's learning. Self-regulation capabilities include both critical and conscious evaluation of actions and an ability to reflect on, understand and regulate one's own learning. (Ruohotie 2002.)

At health service point ILONA, the students build up their underpinning knowledge of independent health promotion and empowering guidance, the purpose of which is to support and motivate residents in maintaining and promoting a healthy lifestyle. The underpinning knowledge related to independent health promotion at health service point ILONA consists of topical and reliable knowledge of such areas as a healthy diet, exercise and mental well-being. Additionally, the students familiarise themselves with electronic services that support health and well-being and health technologies to give them capabilities for supporting and encouraging residents in their search for reliable health information and information on the local offer of health and well-being services.



The underpinning skills are built up at health service point ILONA during authentic encounters between the students and residents that take the form of individual meetings and group sessions. In these encounters the students apply their underpinning knowledge as flexible and situation-specific action in line with the ideology of health service point ILONA. Consequently, their skills related to dialogical encounters, provision of advice on a lifestyle that promotes health and well-being and empowering guidance are improved. During the group sessions, the students build up their skills in group guidance and using peer support in group situations. As regards electronic services, the students develop their capabilities for guiding residents in the use of ICT devices and finding reliable information about health and the services offered in the local area.

Capabilities for self-regulation are developed at health service point ILONA by means of regular reflective activities. Reflection takes place at many levels in different stages of the activities. At joint reflection sessions, the object of scrutiny is the substance of the activities: what do we feel, observe and do? Another object of joint reflection is the process of the activities: how do we think and act and how successful are the activities? At the individual level, the assumptions in the background of the activities are a particular object of reflection. This means considering the causes and consequences of the actions: why do we observe, feel, think and act in a certain way? The insights and learning experiences produced in the course of health service point ILONA's activities are always associated with reflection on the student's personal basic views. Reflectiveness is a precondition of vocational development and a skill that must be practised to enable in-depth learning. (Kupias, Peltola, Saloranta 2011.)

Learning as a creative process

Learning as a creative process is always shaped in the image of the actors in time, place and space. It is an active process that contains numerous stages, including enchantment, difficulties and overcoming obstacles. It thus requires of the students and the supervisors a strong ability to tolerate uncertainty. A creative process is also always associated with unpredictable and unforeseen aspects, as creative activities are never exclusively predetermined and goal-oriented. Creative activities generate more and more new objectives as they progress, and they may thus change and modify their original premises. (Tukiainen 2010.) A creative learning process is possible in a learning environment which inspires trust and in which the students feel safe. This gives the students courage to try their wings and test the limits of their own professionalism. In a learning environment that has a positive atmosphere and that also allows failures, the students can relax and experience trust and togetherness that support the progress of a creative learning process. When the students find the issue to be learned meaningful for themselves and their future profession, this also encourages them to be enthusiastic about learning. (Korpi & Potinkara 2015.)

At health service point ILONA, freedom and responsibility are simultaneously present. The students have the freedom to experiment and find their own ways to act, but they must also assume responsibility for their own learning. When they act in a

space for open encounters at health service point ILONA together with the residents, the students can influence what they do and how they act. This reinforces their commitment to the learning process. Only in conditions of autonomy can the learner genuinely accept responsibility for his or her learning (Korpi & Potinkara 2015). This is only possible if the teachers are willing and daring enough to relinquish their power as experts and modify their role towards coaching and guiding teachers.

At health service point ILONA, the supervising teachers must believe in and trust the students' abilities to act, and they must withdraw to the background to support the students' learning process. It is important that the supervisors encourage the students to leave their comfort zones in order for genuine learning to take place. The teacher's genuine interest and involvement are key factors in sparking enthusiasm for learning.

Conclusion

In this article, we have examined the construction of a creative learning environment which can be used to respond to the needs set by a changing operating environment through a pedagogical solution at a university of applied sciences. Health service point ILONA described in the article represents a creative learning environment where future nursing professionals develop their capabilities for supporting the citizens' independent actions to maintain and promote their health and well-being. This way, the university of applied sciences as an educational organisation shoulders its societal responsibility by participating in the paradigmatic change of social services and health care. As a result of the on-going transition, citizens' personal responsibility for independently promoting their health and well-being will assume an increasingly significant role.

Regional development is one of the key tasks of universities of applied sciences. In addition to a learning environment, health service point ILONA creates a space for open encounters in Eastern Uusimaa that the residents find easy to approach. The ideological core of the health service point comprises the themes of health and well-being that are familiar to everyone and close to everyday reality. As we point out in the article, the best and most effective ideas are often found close by when they are scrutinised and applied in a new and creative manner.

Careful and sustained construction of the ideological and functional background for a creative learning environment is a precondition for pedagogically enduring and justified activities. Descriptions of the learning environment and the service concept as it is revealed to the residents help to make the activities visible and communicate about them credibly. The aforementioned aspects enable the activities to have a permanent ideological core and make possible their use in different operating environments and curricula. Sustained and in-depth reflection on the foundations of the activities and making them visible is more and more significant in a world that is in a constant state of flux. Without verbalising our thoughts, it is difficult to sum up and express in concrete terms new ideas and operating models.

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Erja Annola and Maija-Leena Kukkonen believe that participatory pedagogy has the power to promote vocational development in creative learning environments. Thinking together lays the foundation for creativity and sustained development work. This article was once again inspired by the unique nature of Koli.

Kirsi Coco, Anne Hiller-Ikonen, Riikka Kanervo & Pirjo Tiirikainen

COMPETENCE IN RESEARCH AND DEVELOPMENT – STUDENTS’ DESCRIPTIONS OF THEIR LEARNING

Abstract

The purpose of this article is to describe nursing students’ learning experiences in the study unit Basics of research and development completed in an online environment and integrated with an authentic working life project. The objective was to find out about the means that helped the students reach the learning outcomes.

The study relies on the Learning by Developing (LbD) action model, where the students work together with different actors in a working life project and thus create partnerships, and blended learning, in which different learning environments are blended to form a whole. It is a combination of face-to-face instruction and instruction delivered using ICT, in which a learning environment consisting of multiple elements is constructed. The study is underpinned by knowledge of the significance that acting in a group has for developing the students’ interaction, communication and team work skills that they will need in working life. The objective was to integrate both teaching processes and online communication devices in the learning. The student’s role as a self-directed actor was emphasised, and the teacher’s role was to guide the learning.

The material consisted of the students’ reflections on their learning (N = 60). The material was examined using the method of inductive content analysis. The findings indicate that the students reached the learning outcomes of the study unit on research and development by the following means: understanding the concepts of R&D and becoming familiar with its

basic principles, support and competence provided by the group, integration of study units and learning environments, methodical learning in project work and receiving feedback. The importance of the group was stressed in the students’ responses. The group members encouraged and helped each other. Team work also instilled discipline in each member’s personal work and helped them keep to the schedule.

Keywords: Learning by Developing, Blended Learning

Introduction

Second-semester nurse and public health nurse students completed a 5-credit study unit on Basics of research and development in the Optima online learning environment in autumn 2015. At the same time, they organised guidance sessions related to health promotion for pupils of Lehtikuusi school as part of their study unit on Family Nursing, Clinical studies. The objective of study unit integration was that the students would learn the basics of R&D competence in authentic interaction with a workplace and drawing on different learning environments. Using ICT, the students could gather and manage contents of the topic to be studied and share their experiences or knowledge produced during the project with different project actors. Working in small groups, the students produced descriptions of the planning, implementation and assessment of the guidance sessions and reported on the project in an online environment. The students set themselves personal learning targets, which they assessed at the end of the study unit. In their final reflections, the students described their learning processes and the way in which they had achieved their targets during the study unit.

In the Learning by Developing action model, students and teachers collaborate with working life actors and customers. Working together and sharing experiences in interaction with others are highlighted. Working together supports an individual’s personal growth and the development of problem-solving skills. (Raij 2007; Taatila & Raij 2012, 2014.) Partnerships are born from trust in another person and the experience of equality. All participants share their experiences and different types of competence, producing new knowledge as indicated by their specific roles and responsibilities. Working together develops the competence of both the individual and the community, shaping the student’s professional and group identity (Raij 2007; Kehittämispohjaista oppimista LbD-opas 2011; Taatila & Raij 2012.) In active learning situations, the students’ inclusion is reinforced: their skills in expressing their feelings and thoughts improve, and their communication skills develop (Niinistö-Sivuranta 2013, 2014).

Jackson et al. (2014) have studied the benefits gained and challenges faced by nursing students when learning in small groups. The students enjoy doing team work and receiving support and encouragement from their peers. The team spirit that

was created in a small group promoted the learning of negotiation and communication skills and built up the students' ability to shoulder responsibility, leadership skills and patience. Challenges to learning were associated with cultural or motivation-related differences, for example different learning styles. Agreeing upon schedules and the times of joint meetings was also challenging. In a study by Bailey and Hewison (2014), the importance of discussions and peer support in a small group was highlighted when learning challenging topics in nursing. Cases based on nursing practice and honest discussions (Critical moment workshops) promoted positive attitudes and the development of emotional intelligence in the students.

Blended learning offers the students an opportunity to apply their knowledge and skills in authentic situations, including workplace-oriented and LbD projects. It is a combination of face-to-face instruction and instruction delivered using ICT, in which a learning environment consisting of multiple elements is constructed. The objective of blended learning is appropriately combining elements of teaching with online environments and devices, drawing on the individual strengths of all these elements. The contents are studied in an online learning environment, in which face-to-face meetings can also be integrated. (Holden 2011; Levonen et al. 2005; Morrison 2013).

Purpose of the study and the research question

The purpose of the study is to describe the students' learning experiences in the online study unit Basics of research and development integrated with an authentic working life project.

The objective is to produce knowledge of university of applied sciences students' LbD-based learning in a study unit on research and development in order to develop guidance provided in online learning environments. The research question was formulated as follows: "What means of achieving the learning outcomes of the study unit on Basics of research and development were described by the students?"

Collection and analysis of material

The material consists of second-semester nurse and public health nurse students' final reflections (N = 60), which were examined using the method of inductive content analysis. The analysis of the material was guided by the purpose of the study and the research question. The researchers read through the material several times in order to form an overall impression of it. All phrases that responded to the research question were picked out in the material and reduced. Reduced expressions with similar contents were grouped together, and sub-categories were formed within the groups. In the next step, sub-categories with similar contents were grouped to form generic-categories that responded to the research question.

Table 1. An example of the reduction of the material and the formation of sub-categories and generic-categories.

ORIGINAL EXPRESSION	REDUCED EXPRESSION	SUB-CATEGORY	GENERIC-CATEGORY
"AN OPEN ATMOSPHERE THAT MADE IT EASIER TO RECEIVE CONSTRUCTIVE FEEDBACK"	RECEIVING FEEDBACK IN AN OPEN ATMOSPHERE	GROUP FEEDBACK	FEEDBACK AS A MEANS FOR LEARNING ABOUT R&D ACTIVITIES
"WITHOUT THE OTHER STUDENTS' SUPPORT I WOULD HAVE BEEN BADLY STUCK"	COPING WITH THE SUPPORT OF OTHER STUDENTS	THE GROUP'S SUPPORT AND COMPETENCE	THE GROUP'S SUPPORT AS MEANS FOR LEARNING ABOUT R&D ACTIVITIES

Findings

The students' descriptions indicate that the following means helped them to achieve the learning outcomes: understanding the concepts of R&D and becoming familiar with its basic principles, the group's support and competence, integration of study units and learning environments, methodical learning in project work and receiving feedback.

In the students' experience, understanding the concepts of R&D and becoming familiar with its basic principles meant that they familiarised themselves with the study unit materials in the online learning environment as well as critically analysed scientific studies. By completing different assignments, the students strove to understand what research is needed for.

"I was surprised to find how time-consuming and demanding it is to draw up a learning report using research methodology"

"The aims also included looking at the ethical aspects of R&D, having a closer look at the results, learning to apply them, and drawing on your creativity and innovativeness in the work. I felt that I reached these outcomes well in general."

"What I found particularly useful was the assignment where you had to analyse a research report as it gave me an overall idea of the characteristics and constituent elements of scientific studies."

The support and competence of the group was a key means for achieving the learning outcomes of the study unit. The importance of the group was stressed in the students' responses. Discussions with other group members helped to clarify the assignments. The group members encouraged, helped and inspired each other. Belonging to the group was found important, and it also instilled discipline in each group member's personal work and helped them to keep to the schedule. The students felt that other group members' prior learning related to research methodology, conducting research and project work promoted their learning. The students also learned new working methods and received encouragement from each other. Positive pressure exerted by the group encouraged students to keep to the schedules

and complete their own shares of the assignments. They turned to other groups for advice, and the guidance provided by the teacher was also found important. During discussions on the assignments and study unit contents, the initial confusion was replaced by understanding and competence.

“Without the other students’ support I would have been badly stuck”

“Invaluable advice from the teacher was a great help”

The students found that the integration of two different study units and different learning environments promoted their learning. While the students were using different online learning environments, they improved their computer skills as if by accident. The students described the importance of personal experience and work in their reflections.

“I had the opportunity to familiarise myself with the different phases of research and development through personal involvement. The course was closely integrated with study unit ROO40, and studying the Basics of research and development was made easier when you were focusing on the more concrete issues of Family Health Care Practice at the same time.”

Methodical learning through project work meant identifying the different areas of the project, discussions with different parties and preparing for unexpected situations. The students found participation in an authentic working life project significant, and project work allowed them to apply the knowledge and skills they had learned directly in practice. The students found concrete project implementation easy. Jointly agreed group meetings where the members considered, produced and shared knowledge together developed team work skills and the ability to give space to others, which are needed in project work. Project work helped the students to find a new, positive attitude to studying. The project also taught them to collaborate with different working life actors. The partnership between the students, teachers and workplace supervisors was realised well in the course of the project work.

“We got on to the right track by reflecting on and coming up with ideas together”

“In the course of the project I learned to immerse myself and approach things from the perspective of enjoyment and having fun”

“In connection with the project I also learned to work with different working life actors”

The students found that a methodical approach promoted the achievement of the study unit’s outcomes. They reported that they had understood the importance of preparing a project plan. Aspects that the students found important were planning together, learning time management and sharing different tasks evenly between the project group members.

“In the next project, we might be emboldened to delegate more”

Receiving feedback was experienced as significant for achieving the learning outcomes of the study unit on research and development. The students said they had

received feedback from the teachers and members of their own group. From the perspective of giving and especially receiving feedback, it is vital that the group has an open and trusting atmosphere.

“An open atmosphere that made it easier to receive constructive feedback”

Discussion

Analysis of key findings

This article examined the means by which the students achieved the learning outcomes of a study unit on Basics of research and development. The importance of the group was stressed in the students’ responses. Group discussions helped them to understand the study unit contents and to come up with ideas for assignments together. The group members also learned from each other. These findings are consistent with prior research results indicating that all participants share their experiences and different competences, producing new knowledge as indicated by their roles and responsibilities. Working in a group and thus producing competence are significant for building the student’s professional identity. (Raj 2007, 2011, Taatila & Raj 2012.) The students asked for help and assisted each other, both between the members of their group and between different groups. Guidance provided by the teacher was also found important. This is consistent with the findings of Andrew et



al. (2015), according to whom the students found that group interaction improved their ability to focus on the essential in the learning materials, and also to share their views of the materials. Jackson et al. (2014) noted that studying in a group improved not only the students' negotiation and listening skills but also their patience and respect for other people's views.

The students found the integration of two different study units and different learning environments an effective solution. The blending of the online learning environment with work in small groups and working life projects supported the achievement of learning outcomes of the study unit on Basics of research and development by enabling self-directed work, more in-depth understanding of the project content, gathering of information on the project, and self-assessment of the student's competence. (Holden, 2011; Levonen et al. 2005.)

Learning through methodical project work promoted the achievement of the students' goals. The students reported that preparing a project plan played a key role for completing the project successfully. Project work in small groups enabled active learning situations (Niinistö-Sivuranta 2013, 2014), in which the students planned and came up with ideas for project work and learned time management and delegation of responsibility. They found that participation in an authentic working life project was significant as they could immediately apply the knowledge and skills they had acquired in practice. Group meetings between the students developed their team work skills. The project also taught them to collaborate with different working life actors. Bassi (2011) notes that a joint project with working life inspired the students and, on the other hand, developed their skills in carrying out projects later in life. The learning outcomes were also extremely good. Bailey and Hewison (2014) further note that the peer support enabled by small groups had an important role in achieving the students' personal learning outcomes.

Feedback from both the teachers and other students was found vital in achieving the learning outcomes of Basics of research and development. The open atmosphere in the group supported the receiving of feedback. This finding is consistent with the results of a prior study on nursing students and learning in which the students emphasised the significance of feedback for learning and a safe learning environment (Pegram & Fordham-Clarke 2015). Bailey and Hewison (2014) note that the group provided not only help and support but also constructive feedback.

Ethical standard and reliability

The authors complied with the guidelines for responsible conduct of research issued by the Finnish Advisory Board on Research Integrity. The study was carried out carefully and accurately. The participants gave their consent to the use of the reflection material. Participation was voluntary, and the results were reported ensuring that no individual participants can be identified. (Advisory Board on Research Ethics 2012).

The reliability of the study was scrutinised from the perspectives of credibility, confirmability and transferability. The credibility of the study was enhanced by the fact that the participants were nursing students who have a grasp of the phenomenon to be studied, or their own learning during the study unit on Basics of research and development. From the perspective of the research question, the material provided a wealth of information, and the same themes related to the studied phenomenon came up repeatedly in the participants' reflections. The findings were analysed independently by two researchers, and the analysis results were consistent. The analysis results were also discussed by the authors. The transferability of the results to a different context may be assessed to some extent. However, the fact that the age, gender, prior education and work experience of the participants were not described may limit the assessment of transferability. The confirmability of the study is improved by a description of the analysis process that enables the reader to follow its main steps. (Table 1.) (Kylmä & Juvakka 2007.)

Conclusions

Blended learning (Holden 2011; Levonen et al. 2005; Morrison 2013) was realised during this study unit. Different learning environments supported learning and formed a consistent whole where theory was applied in practice while the study unit was still in progress. Partnerships that developed between student groups as well as between the students and teachers/workplace supervisors in keeping with the LbD model (Raij 2007, 2011) were mentioned in the students' reflections. The students developed and completed their projects based on workplace needs. A well-functioning group and the students' similar objectives regarding the studies enabled these partnerships. On the other hand, the students may be prevented from achieving their objectives by conflicts within the small group and disparities between the members' know-how. While the students mainly reported that they had achieved the learning outcomes, a great deal of support and guidance provided by the teacher was required. In those small groups that found the work challenging, the teacher's supervision and role in crisis management were highlighted. When developing guidance, it is important to note how an online environment where a teacher's support is available enables the students' peer learning and the provision of peer assessments and feedback related to the group's operation.

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Marja Vellonen & Irene Latva-Korpela

AN EMPOWERING GROUP SUPERVISION MODEL FOR THESE PHASE STUDENTS

Abstract

Taking the individual support needs and initial situations of university of applied sciences students into consideration in different phases of the thesis process is vital. Empowering group supervision can be used to promote the progress of this process. A special group titled the Catch up group for thesis phase students was launched in the health services field on the Tikkurila campus of Laurea University of Applied Sciences in 2014. The purpose of this pedagogical development activity is to support students whose thesis process and thus graduation have been delayed by means of more intensive supervision and guidance. The objective of the development activity was to empower the students and build up their self-confidence, thus promoting their ability to bring the thesis process and their studies to conclusion. The purpose of the article is to describe this empowering group supervision guidance model and assess it from the pedagogical perspective.

The theoretical frame of reference for the group supervision model was the Learning by Developing model (LbD) and the principles of empowering guidance. In group supervision, peer support was seen as a significant factor that promotes the thesis process. The empowering group supervision model would appear to support the students' learning and ability to complete the thesis process. The group supervision model and the empowering supervision method may also be used in the case of students who have no need for special support in their thesis processes. In the future, it would be useful to study methods that can promote the thesis process and prevent it from stalling. This knowledge may be used for developing the thesis guidance process and pedagogical solutions.

Introduction

The different initial situations and attitudes towards studying of university of applied sciences students set challenges for thesis supervision (Lundgren & Halvarsson 2009). Thesis supervision is provided individually or in groups. The students' guidance needs may be influenced by such factors as age (Cartney & Rouse 2006), gender (Arvidsson et al. 2008a) and study history (Lätti & Putkuri 2008). Seeking different alternatives and solutions is highlighted in the guidance of students (Lätti & Putkuri 2008).

A special group titled the Catch up group for thesis phase students was launched in the health services field on the Tikkurila campus of Laurea University of Applied Sciences in 2014. The purpose of this pedagogical development activity is to support students whose thesis process and thus graduation have been delayed by means of more intensive supervision and guidance. The Learning by Developing model is applied to the Catch up group. The objective of the development activity was to empower the students and build up their self-confidence, thus promoting their ability to bring the thesis process and their studies to conclusion. The purpose of the article is to describe this empowering group supervision guidance model and assess it from the pedagogical perspective.

Group supervision of thesis phase students in the Catch up group

Empowering group supervision and the Learning by Developing model (LbD)

The students' individual initial situations are taken into consideration in the group supervision of thesis phase students (Lätti & Putkuri 2008, Penttinen et al. 2009). Discussions on the objective of the studies and the student's competence, study skills and life situation enhance understanding of the student's overall situation (Lätti & Putkuri 2008). The Learning by Developing model is applied in the Catch up group (LbD). The LbD model combines authenticity, partnership, creativity, experiential learning and research. Theses are produced in authentic working life cooperation. All participants are considered responsible actors during the thesis process. Interaction and cooperation are based on openness, equality and trust. (Raij et al. 2011.)

According to Kangasniemi et al. (2011), the teacher is seen in the role of a tutor, a teacher, an instructor and a group leader in the thesis process. Holmberg (2006) sees the teacher as a consultant, coach or guardian. In the Catch up group, the supervisory relationship between the student and the teacher is seen in terms of equal interaction (Lätti & Putkuri 2008), in which the teacher steers the students towards knowledge and personal insight (Arnkil 2000). Learning is considered a partnership where the student and the teacher are on a common journey (Nummenmaa

& Lautamatti 2004) and where they both have an active role (Utriainen et al. 2011). Supervision ensures the group members' commitment to an active learning process, increasing their self-directiveness and creating an experience of empowerment (Nummenmaa & Lautamatti 2004). Group supervision creates an environment that is encouraging (Arvidsson et al. 2008b) and accepting and that supports learning (Nummenmaa & Lautamatti 2004) as well as reinforces communication and interaction between group members (Samara 2006). The group members and their interaction form a resource for guidance. Under group supervision, the students may learn something that it is not possible to learn through individual supervision. (Nummenmaa & Lautamatti 2004.) The students may contribute to the supervision situation perspectives and resources that the teacher lacks (Penttinen et al. 2011). Peer support (Samara 2006, Penttinen et al. 2009, Kaisto 2011, Kangasniemi et al. 2011, Penttinen et al. 2011), peer assessment (Samara 2006, Kangasniemi et al. 2011) and thesis seminars are seen to promote learning (Kangasniemi et al. 2011).

The teacher should be aware of the students' expectations and possible doubts and fears related to the thesis process. Earlier negative experiences of the quality of supervision may influence the supervision relationship. (Hulkari & Pakaste 2007, Lundgren & Halvarsson 2009.) Keeping in touch with the teacher, which can be easily done using online communication, is also considered a significant factor that promotes the learning process (Lätti & Putkuri 2008). In the Catch up group, the students receive answers to their questions within three days at the latest (Lundgren & Halvarsson 2009). Encouraging and listening to the student are considered a significant factor that supports learning. In the Catch up group, encouragement is also understood as stimulating, instilling confidence, sharing the journey, inspiring and sparring. (Lätti & Putkuri 2008.)

Description of the activity

The Catch up group for thesis phase students is supervised by two teachers. The group meets roughly once a month. The meeting schedule is published at the same

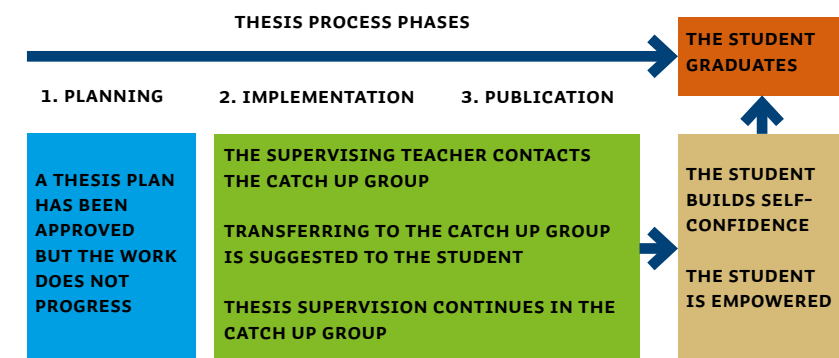


Figure 1. Guidance process in the Catch up group

time with the rest of the teaching offer. The criteria for joining the group is that the student's thesis process has lasted for at least a year, without progressing after an approved plan has been produced, or that the student's thesis process has become drawn out. The teacher supervising the thesis takes the initiative in transferring the student to the Catch up group. For the progress of the guidance process in this group, see Figure 1.

An average of five to eight students take part in a supervision group. While the students are encouraged to attend the meetings, participation is not mandatory. Group supervision in a physical space increases interactivity; the participants can see each other during the session (Nummenmaa & Lautamatti 2004). The group members and instructors introduce themselves. The rules of group supervision are repeated if necessary and always when new members join in (Giddings & Wood 2006).

The supervision provided in the group starts from the student's needs. The focus is on a key phase of the thesis, which is discussed together by the students and the teachers. (Vehviläinen 2009.) The student's resources and the progress of the thesis are also evaluated. Intermediate targets are set for the thesis, and a draft schedule is agreed upon, which maintains the student's motivation and persistence. The supervisors strengthen the students' resources and belief in their own abilities and pay attention to giving constructive and positive feedback. Feedback is provided both orally and in writing using the Comment tool in Microsoft Word. In addition to group supervision, complementary individual guidance meetings may be arranged. The individual meetings are short guidance sessions where the student receives support for a certain phase of the thesis, such as the analysis stage.

The group enables a culture based of communal problem-solving (Nummenmaa & Lautamatti 2004) and inquiry-based learning. Group dynamics and co-teaching are used as the teachers' tools. Learning consists of individual and communal activities: each student submits his or her thesis to the group's virtual workspace a week before the group meeting. The idea is that the students familiarise themselves with each other's theses before the session. They also prepare themselves to give feedback on the thesis, produce a peer assessment or act as an opponent at seminars.

Discussion

A time slot should be reserved for the thesis process in the student's study plan. The student's life situation and commitment to the thesis process are seen to influence the progress of the thesis. In the future, it would be useful to have more discussions, for example with the teacher tutor, on the timing of the thesis. A thesis that is started too early and simultaneously with other demanding studies may overload the student, and the thesis may be dropped. The students' individual study paths increase the need for individual solutions, also affecting the thesis process and graduation on target.

Studies have established that students are uncertain about the progress of the thesis process and experience it as something vague and even frightening (Lundgren & Halvarsson 2009). The beginning is often described as a critical phase for the thesis process. The instructions and the supervision process should be as clear as possible. The process should be discussed and analysed at thesis supervision meetings, and the students should be encouraged to view the instructions on the Intranet (written instructions and a video). (Cartney & Rouse 2006.)

Students have varying expectations of the thesis process. Some students find that meeting the requirements set for the thesis is difficult, and the thesis process is experienced as complicated. (Lundgren & Halvarsson 2009.) Many students working on their theses puzzle over the same questions as the process progresses. Peer feedback and support are experienced as empowering, and they are found to promote the progress of the thesis. During group supervision sessions, the students can talk about any specific problems they may have with their theses and get new ideas from their fellow students and teachers (Kangasniemi et al. 2011). Group supervision enables peer support between the students. Participants in the Catch up group for thesis phase students have been social services and health care students with a variety of backgrounds and topics. Groups working on the same theme and using the same method have been directed to provide peer assessments of each other's theses, which enhances the students' motivation in the thesis process (Kangasniemi et al. 2011).

Co-teaching in group supervision has been experienced as a factor that promotes the students' thesis processes and eliminates vulnerabilities in the process (Lätti & Putkuri 2008). The teachers' different backgrounds and competences have added depth to the supervision. Effective supervision also speeds up the students' graduation (Vuorinen et al. 2005). Exploring different and flexible guidance methods and techniques for thesis supervision, for example across the Internet, would be worthwhile. According to Lätti and Putkuri (2008), the students found that keeping in touch with the teacher online was effortless and promoted the learning process.

Experiential knowledge collected from the operation of the Catch up group indicates that more intensive supervision and guidance appears to have positive impacts on the completion of the thesis and the student's graduation. By spring semester 2016, 26 students had participated in the group, 23 of whom have graduated and three have yet to finish their theses. Transferring to the Catch up group has been received positively by the students. The change of supervisor is seen as an intervention that allows them to have a fresh start. Researching possible means for promoting the thesis process and preventing it from stalling would be useful. The group supervision model and the empowering supervision method may also be used in the case of students who have no need for special support in their thesis processes. This knowledge may be used for developing the thesis guidance process and pedagogical solutions.

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Annemari Kuhmonen & Päivi Pöyry-Lassila

THE P3P MODEL FOR LEARNING IN INNOVATIVE KNOWLEDGE COMMUNITIES

Abstract

In our case description we present a project “Fit to Supply—Fit to Demand” that identified opportunities for SMEs to understand and bid for contracts in the public sector. The project was assigned by a London-based corporate client, Lifeworld Ltd, and implemented by a team of Laurea Hyvinkää campus business students in close interaction with the client, who mentored the students in the areas of procurement and survey analysis. The task was to conduct surveys for both the supply and demand sides. The project was led by the client as a consultancy project, which offered students an opportunity to learn about the consultancy business. The students were also coached to improve their job application skills, and they became more employable.

We approached the case with the help of triological learning theory and the concept of an innovative knowledge community (IKC). The learning IKC consisted of the business students, the company representative, and Laurea’s teachers. The teachers’ role was to facilitate the progressive learning process. The cooperation was supported by Laurea’s Learning by Developing (LbD) Action Model and one of its implementations, the P3P entrepreneurial environment, where all actors participate actively in the collaborative problem-solving and learning process.

Our observations indicate that the closer the interaction is between the parties, the better the learning results are in research projects. The active interaction between the various actors

during the project facilitates and supports the sharing of expertise. We argue that a company representative—as a project manager, mentor and coach in the student research project—increases the motivation of the students since the cooperation is based on mutual trust, commitment, support, and taking responsibility. Additionally, we found out that IKCs facilitate the learning of entrepreneurial skills and competences.

Introduction

User-driven development of Laurea’s peer-to-peer (P2P) environment has modified the project environment into a P3P entrepreneurial environment that nourishes entrepreneurial skills and mindsets, and thus facilitates the employment of students.

A P3P learning environment offers an entrepreneur with strong business experience and an open-minded attitude towards developing business an opportunity to share expertise and co-create (with students) solutions to actual business problems and development needs. The P3P pedagogical model is based on the theories of triological learning and innovative knowledge communities (IKCs), according to which learning is a collective effort of new knowledge creation, participated in by various actors and mediated by the shared object of development. In the P3P model, these principles are applied in order to promote collaborative learning projects, implemented in intense collaboration between higher education students, teachers at a university of applied sciences, and companies (Kuhmonen, Kujanpää & Pöyry-Lassila 2015).

In our case description we present an authentic case where the P3P pedagogical model was applied in a project called “Fit to Supply—Fit to Demand: Identifying and maximizing business opportunities in public procurement”—a research project undertaken by a London-based company, Lifeworld Ltd, and Laurea Hyvinkää campus business students. In this project, the company representative acted as project manager, mentor, and coach. The team of business students implemented the task following the lead of the client and under the guidance of lecturer-facilitators. All actors participated actively in the collaborative problem-solving and learning process.

The triological learning and IKCs framing the P3P pedagogical model

Paavola and Hakkarainen (2005) introduced the knowledge-creation metaphor (“triolog”) for learning, according to which learning can be understood as an action targeted at expanding existing knowledge and competencies through the process

of “innovative inquiry.” The knowledge-creation metaphor for learning emphasizes generating new ideas and advancing knowledge (Paavola & Hakkarainen, 2005). This kind of learning is named as “trialogical,” referring to a collaborative and systematic effort to develop the shared objects, tools, practices, and ideas in order to collectively advance the community’s knowledge. This process is mediated through the shared objects that are being developed within the community. According to Hakkarainen (2009), the collaborative creation of new knowledge takes place through collective epistemic practices “that guide and channel the participants’ intellectual efforts in creative and expansive ways.” This process is characterized by both the deliberate advancement of the existing practices and the systematic pursuit of new knowledge, exceeding the current level of expertise. Knowledge and doing are seen as inseparable sources of creativity and improvisation (Hakkarainen, 2009).

To succeed, trialogical learning requires constructing a shared space (common ground, a context) where knowledge is collaboratively created. This action is mediated by nature, which means that it takes place through the use of shared objects, using them as mediators (Paavola et al., 2004; Hakkarainen et al., 2004b; Paavola & Hakkarainen, 2005). Further, the group’s epistemic agency emerges through participation in the shared activities, that is to say, through intentionally pursuing its epistemic goals (Paavola & Hakkarainen, 2005).

As pre-requirements, trialogical learning requires four elements: (1) individuals with their ideas, personal knowledge, and expertise, (2) a community consisting of individuals interested in participating in deliberate knowledge advancement, (3) a shared space for collaboration, and (4) shared objects (ideas, practices, and knowledge artifacts) that are developed collaboratively and that mediate the knowledge-creation process of the community (Paavola & Hakkarainen, 2005).

The following six characteristics are present in trialogical learning: The knowledge-creating activity focuses on and is mediated by (1) shared (trialogical) objects that are collaboratively developed. Knowledge creation is (2) a long-term and continuous process that occurs in a non-linear manner (3) in interaction between the collective and individual activities. Trialogical learning calls for (4) the cross-fertilization of knowledge practices between different communities and is often (5) technology mediated. Finally, the knowledge advancement and development takes place through (6) transformations and reflection between several kinds of knowledge and practices (Hakkarainen & Paavola, 2009).

Knowledge co-creation takes place in IKCs, which are groups of people gathered together in order to share and create new knowledge together. IKCs’ target is to develop knowledge, conceptual artifacts, and competencies intentionally and systematically, and the motivation for their existence is the collective creation of knowledge (Hakkarainen et al., 2004a; 2004b). IKCs are characterized by pursuing novelty systematically, working continuously at the edge of current expertise, and knowledge, and deliberately reinventing the community’s practices (Hakkarainen, 2009). IKCs actively seek for something that does not yet exist regarding both knowledge and

practice; they aim to progressively cross the boundaries of existing knowledge and transform the practices through expansive learning. The ultimate goal is to create something new (Paavola & Hakkarainen, 2008).

Participation is an essential element in knowledge co-creation, but according to the in the trialogical learning process, the participants are also expected to actively contribute to the collective pursuit of knowledge advancement, reaching beyond the boundaries of existing knowledge and expertise. The responsibility for knowledge creation is shared, and each member of the community can and is expected to make a contribution in this locally accelerated cultural learning (Paavola et al., 2004; Hakkarainen et al., 2004a).

The P3P pedagogical model is based on Laurea’s Learning by Developing (LbD) Action Model and the ideas of trialogical learning and innovative knowledge communities. In this model, learning is understood as collaborative knowledge creation taking place in an authentic learning environment. Essentially, learning takes place in an IKC consisting of the students, teacher-facilitators, and the company representatives. Learning is organized as authentic development projects provided by the company, and all actors participate actively in the collaborative problem-solving and learning process. The shared object of development is defined at the beginning of the project, and the object can be either conceptual, material or both. For example, in this project the shared object of development was to identify business opportunities in public procurement. The company representative’s role was to act as a project manager, mentor, and coach. The students’ role was to take active initiative in implementing the task as team members. The teachers’ role was to facilitate and support



the learning process through intensive guidance. Teachers also acted as networkers, experts, and evaluators. As a result, all participants were involved in the knowledge creation process, and they all learned through advancing knowledge and practices.

The case “Fit to Supply—Fit to Demand: Identifying and maximizing business opportunities for SMEs in public procurement”

The Fit to Supply—Fit to Demand project identified opportunities for SMEs to understand and bid for contracts in the public sector. Currently in Finland, public procurement is dominated by large and international companies, although the need to encourage innovation and promote efficiencies in public sector supply chains is recognized. The public sector in general is a large customer and these public procurements are a significant source of revenue for any company.

The project looked at both the supply and demand sides of public procurement. It examined the level of knowledge and understanding of SMEs of the public procurement process and the level of SME engagement with the public sector. It identified the opportunities within the supply-chain for SMEs, and the gaps and capacity needs for companies to win contracts. It examined corporate social responsibility (CSR) approaches and supplier diversity, and also how the public sector can promote innovation and efficiency through their supply chain.

The project was led by Dr Kemal Ahson from Lifeworld Ltd, a London-based independent company offering consultancy services. He has developed and managed the UK’s Fit to Supply program, which supported over 5,000 companies in winning contracts. Students implemented the project in close interaction with the client and were trained and mentored by him in the areas of procurement and analysis of surveys in face-to-face meetings organized on a regular basis during the project. The project was led as a normal consultancy project, not a student project, which offered students an opportunity to learn about the consultancy business. Students were also coached to improve their job application skills, and they became more employable.

The objective of the project was to find opportunities for SME businesses in the public sector. The student team’s task was to design research methodology for both the supply and demand sides, to draft both survey and interview templates for suppliers and procurement staff, and to find quality leads, as well as to gather data with the help of desk research, e-survey, and interviews and analyze it. They were also responsible for the presentation of research findings, writing-up case studies, and launching the report. Responsibilities were shared equally between individual members of the team. The surveys were implemented in cooperation with Hyvinkää town and municipality, and the entrepreneur society of the Uusimaa region.

During the project, the students learned about research in business, and their understanding of the consultancy market, supply-chains, procurement, and tendering increased. Students had an opportunity to improve their business English communication skills, as well as their business knowledge of how companies can win contracts. They also learned to take more initiative.

The main output of the project was a guide for SMEs and public procurers on how to become more fit to supply and fit to demand. The report “Fit to Supply—Fit to Demand: Identifying and maximizing business opportunities in public procurement” is available for SMEs, students, and other interested parties at Laurea’s electronic portal of judicial excellence, eNormia. The main impact of the project was to make the students, mentored and coached by the experienced entrepreneur, more employable for business.

Conclusions

The goal of this article was to describe a successful case of applying the LbD model and the P3P pedagogical model in a collaborative learning process between students, a company representative, and teachers. According to our experience, we argue that active interaction is a prerequisite for a successful research project since it facilitates and supports the learning and sharing of expertise. For the students the expertise might mean fresh business knowledge about public procurement and consultancy. For the entrepreneur, students create value for the company by sharing their ideas and innovative approaches to different aspects of the research assignment. When thinking “outside the box,” students give the client an opportunity to smarten their ideas and boost decision making. P3P provides fruitful conditions for the formulation of innovative knowledge communities.

Our observations, as well as the statements of the students in the evaluation discussions, indicate that a company representative—as a project manager, mentor, and coach in a student research project—increases the motivation of the students since the cooperation is based on mutual trust, commitment, support, and taking responsibility. Additionally, we found out that IKCs facilitate the learning of entrepreneurial skills and competences.

In the future, we aim to continue the development of the P3P learning environment further—in collaboration with the companies, students, and teachers—since, according to our experiences and observations, the P3P model responds to the challenging role of the universities of applied sciences in Finland as the facilitators of learning and as networkers that ensure individual career paths for students.

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LAUREA
UNIVERSITY OF APPLIED SCIENCES
Together we are stronger



Teija-Kaisa Aholaakko, Kati Komulainen,
Arja Majakulma & Susanna Niinistö-Sivuranta (eds.)

CROSSING BORDERS AND CREATING FUTURE COMPETENCES

This publication introduces good models of research-oriented learning under the theme "Together we are stronger". The articles describe the teaching, research, experimentation and development carried out in the field of innovative pedagogy. The articles depict, for example, how research-oriented learning has been developed in cooperation between Laurea and partners abroad and what kind of new pedagogical solutions have been produced by applying Laurea's research-oriented learning model "LbD Action Model" (Learning-by-Developing Action Model).