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BEYOND REASONING: PITFALLS WHEN DEVELOPING AN INTERDISCIPLINARY PROGRAM

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Abstract: Most modern companies are looking to hire graduates with interdisciplinary skills, so it is important for universities and teaching institutions to meet this demand by offering interdisciplinary courses and programs. IKEA is a major actor in the Swedish business environment and along with IKEA needs and the general development, Linnaeus University has developed an interdisciplinary program called "Innovation through business, design, and engineering" involving three faculties: the Faculty of Technology, the School of Business and Economics, and the Faculty of Arts and Humanities. For faculties developing interdisciplinary programs, additional resources are needed, making efficiency in the development process critically important. This paper reports on the development process of an interdisciplinary master's program. The efficiency of program development can be improved through shared experiences, so the purpose of this paper is to identify pitfalls in the development process of an interdisciplinary program and suggest possible actions for their prevention.

The paper is empirical in nature and data has been gathered through in-depth interviews with faculty members, external reviewer, and the IKEA co-workers involved. The focus was on the activities of the program development process: initiation, development of the program syllabus, and development of the course syllabus. In total, ten interviews were conducted (12 respondents participated).

The study concludes the following pitfalls in the development process:

- Unclear specification of assignment and missing requirement specification
- Missing decision making model
- Recruitment of faculty members
- Missing upper management commitment

The following actions for their prevention are suggested: clear specification of assignment and existing requirement specification, existing decision making model, appropriate recruitment faculty members, and presence of upper management commitment in all activities. Despite these pitfalls, identified in this paper, the program is in line with its original charter with about twenty students from the three facilities enrolled.

Keywords: Program development, faculties, cooperation

1. Introduction

Presently there is a need for producing graduates that can operate in changing environments (Delaney, Pattinson, McCarthy & Beecham 2015). Inamdar & Roldan (2013) suggested that, in order for the graduates to be prepared to meet job requirements, they need theoretical, practical, applied, and reflective skills. Already O'Sullivan in 2000 stressed an increasing focus on the employee's soft skills such as empathy and the ability to work with others from different disciplines rather than concrete skills. Hence focus is drawn towards the interpersonal skills, as employers are looking for these skills when hiring. In light of this, university and teaching institutions ought to focus these skills when educating future workforce (Bedwell, Fiore & Salas E 2014).

The need for companies to innovate the products and their business is undisputable and companies not continuously working with innovations are soon out of business (Barczak & Kahn 2012). Working with innovations requires a process for understanding and addressing customer needs as well as opportunities and conditions to deliver the "innovation" to the customer in an appropriate way. Innovation is defined by the OECD as "*the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations"* (OECD, 2005, p. 46). A review of the literature shows different frameworks aligned with the innovation concept (Grawe 2009). From an academic perspective, this implies that several disciplines taught in different faculties are involved. Particularly, there is an increasing understanding of the complications in bridging technology and business together. (Thursby, Fuller & Thursbys 2009)

In 2010, IKEA donated money to Linnaeus University for a professor and five doctorial students, marking the beginning of the Bridge-cooperation. As a collaboration between IKEA and Linnaeus University (LNU), the Bridge-cooperation focuses on "entrepreneurship, innovation, and production for a better everyday life at home for the many people" (http://lnu.se/research-groups/the-bridge--strategic-cooperation-with-ikea?l=en). The Bridge-cooperation is founded on five pillars: academic research, development projects, education, tomorrow's competence, and the Bridge library. According to Thomas Carlzon, the managing director of IKEA AB, "*Linnaeus University is strategically important for the IKEA of*

the future, both in terms of the provision of human resources and expertise, as a recruiting source and also as a producer of important research results" (http://lnu.se/1.1516/ikea-to-invest-big-time-in-university?l=en).

A business plan for education (pillar 3) was developed in which it was stated that "IKEA and Linnaeus University to work in close collaboration in identifying, developing and offering educational programs within the frame of The Bridge program for students as well as for current IKEA co-workers. One of IKEA's needs is to achieve a long-term flow of high potential people to IKEA and create a qualitative recruitment base for students as well as finding potentials within IKEA". The purpose of pillar three was set to "To support and participate in the development of educational programs at Linnaeus University. To connect production and design specialists at IKEA with program responsible at Linnaeus University. IKEA needs in the long run are to contribute to an affordable range of well-designed products suitable for life at home on all IKEA markets by being responsible for the product development program within the Bridge" (Verksamhetsplan (The bridge) 121005).

A process is a description of how and in what order different activities should be carried out in an organization. The process within the organization has a predefined structure with a defined beginning and end, hence a process can be described as a continuous repetitive chain of different activities. (Ljungberg & Larsson 2012) The process referred to in this study contains three activities 1) Initiation, 2) Development of program syllabi, and 3) Development of course syllabuses.

The fact that universities are gradually encouraging interdisciplinary programs (Vanstone et. al. 2013) and the IKEA donation, LNU has developed an interdisciplinary program involving three faculties: the Faculty of Technology; the School of Business and Economics; and the Faculty of Arts and Humanities. This paper reports on the development of an interdisciplinary master program, with all involved faculties, called Innovation through Business, Engineering and Design at LNU in Sweden. The program was initiated in 2011 and began in 2014 with 15 students. The program is still under development and it is dimensioned for about 30 students, ten from each faculty. The program development process was initiated as a project.

Important criteria for a project are for instance that those who have been assigned a task also get the required authorities, that there is a project leader (who is responsible for the development of the project) and clarity in the project organization (Tonnquist, 2014; Project Management Institute (COR), 2013). Hence it is important that the university faculty members assigned to carry out the development work feel the support, confidence and encouragement of the administrative officials and other faculty members. Further, the organization of the project and managerial aspects need to be clarified for the involved faculty members. In order to use resources in the best way, the development process to run as smooth as possible, and counteract confusion and frustration for the involved faculty members, pitfalls (if possible) need to be removed or reduced. Developing programs require resources and the usage of resources is crucial for the effectiveness of program development process, implying that issues/actions that caused time delays and/or waste of resources (so called pitfalls) need to be removed. Hence the purpose of this paper is to identify pitfalls in the development process of an interdisciplinary program and suggest possible actions for their prevention.

2. Description of the faculties

This chapter describes the involved faculties and it is supposed to provide the reader with an understanding of the involved faculties.

2.1 Faculty of Technology

The Faculty of Technology has educational programs in a wide variety of areas like mechanical engineering, biology, and ships officers, for a total faculty of about 2600 students. The faculty offers eleven bachelor programs, 2 one-year master's programs, 4 two-year master's programs, as well as individual courses. Every year, this faculty includes about 160-180 international students, while about 25 of their own students spend time abroad studying at one of their 150 partner universities (http://lnu.se/fakulteten-for-teknik and Vinci-Hytter 2015).

2.2 Faculty of Arts and Humanities

The Faculty of Arts and Humanities offers education programs in the design, arts and music; cultural and social sciences; languages; communication; and journal-

ism to about 3,300 full-time students. The faculty offer 10 first-cycle degree programs, 500 independent courses, 3 one-year master's programs, and 3 two-year master's programs. The faculty has about 100 international students and 100 partner universities (http://lnu.se/fakulteten-for-konst-och-humaniora/utbildning and Hippach 2015).

2.3 School of Business and Economics

The School of Business and Economics offers education programs in economics, marketing, entrepreneurship, and tourism to about 4000 full-year students. The faculty offers 13 bachelor degree programs within business and economics, 250 independent courses, 7 one-year master's programs, and 4 two-year master's programs. Every year, the faculty has about 450 international students, while about 300 students spend time in exchange studies at one of their 135 partner universities (http://lnu.se/school-of-business-and-economics?l=en).

3. Methodology applied in this study

This study was organized as an in-depth interview study with open-ended questions (Merriam 1994) with the faculty members, one external reviewer (taking part in two audits), and IKEA co-workers involved in the development of the program, as shown in Table 1. The interviews were carried out in the spring of 2015 and each of the respondents was visited personally. Sometimes the interviews were carried out in groups with interviewees involved in the same process step. The interviews lasted approximately one and a half hours. The method was chosen because it facilitates discussion and reflection. The interviews were carried out in line with the recommendations by Chell (2012). The theme of the interview was presented as "development of the 'Innovation through business, engineering, and design' program." The researcher began by asking the respondents to describe their view of the development of the interdisciplinary program, and follow-up questions were explored to allow the researcher to identify the pitfalls and clarify understanding. The interviews were transcribed and each respondent was

contacted after the interview for verification, thus improving the validity and reliability (Yin 2003).

Interviewee	Date	Organizational belonging	Role
Jörgen Svensson	2015-02-11	IKEA co-worker	Member of Cooperation Council
Lena Fritzen	2015-02-12	University faculty member	Pro-rector and chairman of the Cooperation Council
Anna Rosenqvist	2015-03-10 and 2015-04-22	IKEA co-worker	Former IKEA responsible for the Bridge
Bengt Nilsson	2015-03-26	University faculty member	Member of Cooperation Council
Thorbjörn Nilsson and Peter Knutsson	2015-03-31	University faculty member	Central administration (project leader and his assistant)
Markku Salimäki*	2015-04-16	External reviewer	Aalto University
Jimmy Johansson and Veronica Ülgen	2015-05-06	University faculty member	Members of development group
Lars-Olof Rask	2015-05-19	University faculty member	Former responsible for the Bridge-cooperation
Jimmy Johansson, Miguel Salinas, and Veronica Ülgen	2015-05-28	University faculty member	Members of development group
Helén Andersson	2015-12-03	University faculty member	Dean for the School of Business and Economics and Member of Cooperation Council

Table 1. Identification of interviewees for the study

* Conversations

The analysis, identification of pitfalls, have been carried out by comparing the description of the process with an ideal process in which all the non-value added time (Ljungberg & Larsson 2012) have been removed.

4. The development process

4.1 Activity 1 - Initiation

The Bridge-cooperation was founded in 2010 and representatives from both LNU and IKEA felt that the cooperation needed a structure and this led to the founding of the Cooperation Council. Within the Cooperation Council, a question arose about what would be the priorities. According to one of the respondents from the LNU, education had been mentioned from the beginning in the contacts with IKEA co-workers and when the IKEA representatives stated that they lacked an education to match their product development process, education became a natural continuation of this cooperation. As one of the IKEA-respondents stated, *"Scholars within the company need to be supplemented with outside employees who are very well trained."* According to one of the LNU respondents, it was difficult to identify what IKEA representatives really meant. However, the members of the Cooperation Council decided on developing a summer course "Home Sweet Home: a multidisciplinary project, 7.5 credits, 2DI673." The summer course was managed by the Design Department and it was offered for the first time in the summer of 2011, and was delivered twice. Students were recruited independently of IKEA. IKEA representatives were impressed by the students' achievements, and discussions on extending the summer course started. The members of the Cooperation Council decided that they wanted an entire university program to be developed.

The first meeting regarding the development of a program, including participants from IKEA and LNU, was held on the 3rd of October 2011. According to one LNU respondent, IKEA had problems finding people to employ as product developers and the target for the LNU faculty members was to help them educate future employees. As one IKEA respondent stated, the company's need was to hire employees who can contribute and adjust to the cornerstones detailed in the introduc-

tion. In order to fulfill these cornerstones, the employees must understand the "big picture" for IKEA, which includes logistics (distribution), production processes, human needs, and selling (retail).

The members of the Cooperation Council thought that it took too long for the students to complete their studies in an undergraduate program, so decided that an advanced education program should be developed. IKEA was commissioned to do the contextual analysis and was the guarantor of education, while the faculty staff from the LNU started to plan and do a benchmarking study[1]. The focus of the LNU members was on the cooperation between the faculties, as it was thought to be the most difficult issue in the work ahead. As one of the LNU respondents said, "*we would never have done this if we were not forced."*

A preliminary sketch visualizing the ideas was created at the first meeting on 3rd of October 2011. Additional meetings to discuss the program were held on the 14th of May 2012 and the 20th of August 2012.

On the 1st of October 2012, the vice-chancellor made a decision that gave the Cooperation Council a mandate to examine the conditions for developing a master's program with relevance to the issues handled within the Bridge-cooperation. According to the decision, if conditions turn out well, the Cooperation Council would become responsible for the development of a master's program starting in the fall of 2014 (DNR: LNU2012/392). On the 12th of October 2012, a meeting was held together with an expert in interdisciplinary programs from Aalto University. The expert's experiences were perceived to be important in the work ahead. IKEA representatives had identified a "red thread" of the master program whereas LNU representatives had been focusing on the cooperation between the disciplines (i.e. faculties). One outcome of the work was that a project leader needed to be appointed to lead the development process. The head of the university's central administration was appointed to the role as the project leader, starting on the 1st of November 2012.

At the beginning of 2013, a re-organization at the university occurred and the project leader, and his assistant, perceived the need to restart the development of the program. Questions arose about which faculty possessed the resources to do this.

[1] None of the respondents has seen the benchmarking study nor its result

Two of the respondents thought that the more work that staff from the central administration performed, the less was done by the faculty members. Therefore, it was decided that the program should be managed and developed by the faculty members and the central staff should not be involved (or involved as little as possible). This was also believed to be the natural way to organize the program as the operational responsibility to run programs was through the faculties. Hence, a program group was formed in which all three participating faculties were given a shared responsibility.

4.2 Activity 2 - Development of program syllabi

The development of program syllabi started in October 2012 when different LNU faculty members including the members of the development group[2], were invited to participate in a workshop together with IKEA co-workers. Several faculty staff members were also invited and, according to one of the LNU respondents, "*it seemed as if people were randomly chosen*" and then "*as there were many people involved, there was nothing done, as usual.*" After this workshop, the effort to develop the program syllabi crashed.

Soon after the workshop, a member from the engineering faculty was asked by its deputy dean if he wanted to be a part of the development group, a member from the business faculty was asked by the Bridge-cooperation responsible, and a member from the design faculty, already one of those responsible for pillar three, was a natural choice. The intent of the program manager was to set reference groups aligned with members from each faculty, but "*unfortunate this was not done, probably due to lack of commitment from the separate deans"* as one of the LNU respondents remarked.

In the beginning of 2013, the members of the development group were called to a meeting with the program managers to clarify the assignment. The assignment was "*to develop a program syllabus for this interdisciplinary program together*

[2] The work to develop the program syllabus was conducted by one representative from each faculty, henceforth referred to as the development group. On this occasion, the members of the development group perceived that they were invited to the workshop because they had been working with the summer course (2DI673).

with IKEA" based on the vice-chancellor's decision and notes from the Bridge-cooperation responsible. The project leader, and his assistant, were expected to manage the time planning.

The representatives from the central staff were at IKEA to meet IKEA co-workers to get comments on the amended program syllabus draft. There were several issues and recommendations from the IKEA co-workers for continuous work. They suggested that the program, for instance, should not become too dependent on IKEA, should be for both for private and public employers, and should involve cultural meetings.

The members of the development group did most of the development work in the spring of 2013. This development work was based on ideas that members of the development group believed IKEA had requested (i.e. the program in product development IKEA). This formed the structure of the program: topics IKEA requested were to be covered in the fall semester and topics IKEA most likely wanted but never declared would be covered in the spring semester. The member from the business faculty had worked for IKEA and believed that she knew what IKEA wanted, and this aligned with meetings with IKEA representatives formed the content of the fall semester. The members of the development group realized that there would be many other potential employers of the students coming from this program, so issues like culture, diversity, and sustainability were included in the scope of the syllabus for the spring semester.

The members of the development group thought that there were many meetings and many different groupings that they did not know about. One of the LNU respondents state that there were rather few formal meeting, meetings were rather taking place randomly. Many did want to participate or share their opinions and very few really wanted to do anything. One of the respondents remarked that, "*People came in and out, but no one wanted to do anything."*

The three members of the development group said they enjoyed developing the program syllabus even though they had different options at times; they never really got into conflict with each other. However, many issues arose around the group that affected their work, one of which was the name. Several names were suggested, including *Leading local innovation* and *Let's work together!* However, as one of the LNU respondents said, "*…all of a sudden some hot shots decided the pro-*

gram name." This was perceived as "strange" as the name was not innovative and was considered to be rather boring.

The members of the Cooperation Council decided that three external academic reviewers should inspect and consider the realism of the project (i.e. developing and offering this interdisciplinary program). The external reviewers verified the draft of the program syllabi on the 26th of September 2013 and advised that it was important to handle financing, the name, and the approach, and that it was critical to start on a small scale and try to recruit your own bachelor's degree students. One of the external reviewers stated that he gave some clear recommendations in order to continue the work with the program, including offering three individual program syllabi (one per faculty), handling the students in groups per faculty, and then facilitating joint classes between the groups and programs.

In October of 2013, the project leader, and his assistant, was replaced and the deans assigned a new overall program leader. The deans felt that it was time to actually realize the program ideas. The dean from the School of Business and Economics volunteered to identify and suggest a program leader, as the respondent states *"we needed to find someone who could do this work,,,, I advised with the prefects at our faculty ,,consulted with the other deans and finally I had to make a suggestion, due to the critical situation, and I just talked to the person"*. This caused confusion and irritation amongst the members of the program development group. None of the members of the development group was asked, even though it was discussed. Instead, they were told who the overall program leader should be by others. Despite this, all members of the development group believed *"that it is we who have done the fundamental development of this program"*. One of the IKEA representatives said that "*Many things that happened during this process was unclear to me, one example was changing the program management.*" It was considered to be unclear and it took both power and energy, but the respondent thought that the change was necessary for the program's development. The respondent also believed that all the completed work was forgotten as new members enter the development work and that the members had to start from the beginning, as the respondent said, *"I think we lost at least half a year on it"*.

The project management anchored the program with the deans, but no one anchored the program amongst the faculty boards or faculty members. However,

The School of Business was the first to approve the proposed program syllabi on the 21st of October 2013, followed by the Faculty of Arts and Humanities on the 23rd of October 2013, and The Faculty of Technology on the 8th of November 2013.

4.3 Activity 3 - Development of course syllabuses

A lot of the work with the course syllabuses, including the structure of the methodology course, was completed during the development of the program syllabi. The original program name became the names of the individual courses (Local innovation and Innovation for Global Impact). The problem with developing the course syllabuses was to find active verbs, but the program responsible provided a template in order for the respondents to facilitate formalization of thoughts. As one respondent stated, *"the program responsible acted as a police officer!"* The respondents noticed a big difference when working toward the deadlines and developing the program syllabi. This was considered difficult and disciplined work by the respondents. The toughest work was to identify the course literature.

IKEA co-workers did not take part in the work with the course syllabuses. As one respondent stated, *"this is a university program and not a training program for IKEA co-workers."* According to the respondents, the program's responsibility to the Bridge-cooperation was unclear and for several of the respondents, IKEA was the same as the Bridge-cooperation. The respondents within the program development group never discussed the roles and responsibilities amongst themselves as they developed this program together and thought that they were going to realize it together. However, difficulties were perceived with the Bridge-cooperation as no one could clearly state the ambitions of "the Bridge-cooperation" or whether the program was a part of the Bridge-cooperation or an independent university program.

One of the IKEA respondents viewed the development of the course syllabuses as internal LNU work, saying, *"I wanted to share both subject knowledge but also how IKEA looks on pedagogical methods, however the faculty members involved did not seem interested…There were many meetings, I think, that I was not invited to."* The IKEA respondent invited faculty members to IKEA to discuss the program, but by the time the meeting was held, the course syllabuses had already

been decided and the meeting turned out to be more of a presentation of what was going to happen in the program rather than focusing on what it would be possible to do. The respondents stated, *"At IKEA, this work would have been considered as a development project having a start and an end date as well as special resources allocated. It did not seem as the faculty members looked at it from this perspective.*

5. Identified pitfalls in the development process

5.1 Unclear specification of assignment and missing requirement specification

This program was initiated by IKEA and the LNU respondents said that LNU would never have started developing this program if it weren't for the requirement from IKEA. Hence the intention was clear already from the start: LNU should develop a program in which the students would learn "the whole picture." For the LUN respondents the start of the program was a strategic decision and the faculties involved became a natural choice. From the beginning, the development of the program was considered a difficult assignment that needed an assigned project leader. The project leader, and his assistant, were assigned from the central administration due to their neutral position in the organization. However, the actual development work was perceived to be conducted by individual faculty members. Hence, one representative from each faculty was chosen to participate in the development work. In order to be able to act as a project manager and lead a project group, it is needed to have either the ability to persuade people (imply having a relationship with them) or having the authority to instruct them. However, in this particular case, this was not the situation. In the beginning, the faculty members did not understand why they were invited to participate in the meeting or what they were expected to do, as many other faculty members were also invited and nobody seemed to know what to do or what was expected. This caused confusion amongst the respondents; they were invited to participate in an interesting meeting but they did not know what to do and nothing was really achieved after the meeting. The participants at the meeting lacked clarification of the assignment, LNU respondents did not know what they were expected to do, and nobody asked what they had done. Aligned with the expectation management (Grönroos 2008) is the

need for criteria regarding when is a program or project successful (Ljungberg & Larsson 2012). This became clearer as the work progressed, but this situation initially caused time delays and lost working hours.

Participation in meetings remained unclear even in the development of the program syllabi. Additional faculty members, outside the members of the original development group, were invited by project leader, and his assistant, from the central staff to participate in meetings and the members of the original development group felt uncomfortable when they attended. The invited faculty members offered ideas and comments that the members of the original development group did know how to integrate. As a result, the members of the original development group did not understand their assignment and felt that they were continuously being questioned. Another issue that was identified was the unclear contribution expected from those who participated at meetings. Additional faculty members coming to meetings often had opinions regarding the issues under discussion, but they were perceived not to care about their issues or comments and showed no interest in contributing to the actual development of the program beyond the meetings. This caused uncertainty among the members of the original development group, which was apparent with regard to the naming of the program. The members of the original development group had several suggestions for the name of the program but the actual decision on the name was done by "some hot shots" as stated by several LNU respondents. However, the members of the development group considered the name to be extremely boring, but they still did not know who or which group had decided on the name. Time delays and lost work hours caused by meetings that strayed away from focusing on the development of the program were apparent during the development of the course syllabus, stemming from a lack of discussion on how the involved should work together and missing organizational clarity.

Further the relationship to the Bridge-cooperation was perceived to be unclear and caused confusion. The members of the original development group were convinced that this should not be an "IKEA program" and that IKEA should not have significant involvement in the development work. The members of the original development group believed that their understanding of IKEA's needs was enough. However, going back to the original idea and intentions of the program

called for larger IKEA involvement, but this further exposed the unclear relationship between the program and the Bridge-cooperation.

5.2 Missing decision making model

The members of the development team point out the difficulty to understand who made decisions that affected the program. This culminates when some "hot shots" made a decision regarding the name of the program and none of the members in the development team was polled. This decision could be attributed to the type of organization of the University, i.e. professional bureaucracy (Mintzberg 1983[3]). A feature of professional bureaucracy is double hierarchies implying both a professional hierarchy and an administrative hierarchy (Forslund 2009). In this specific this could be considered case where the administrative hierarchy made a decision that clearly affected the work with the developing the program.

5.3 Recruiting of faculty members and missing upper management commitment

The deans played an important role in identifying faculty members suitable for taking part in the development of the program. The members of the original development group had different personalities but they complemented each other. Further, all of the members were focused on their own way of working and they shared the opinion that this was a joint responsibility of the original development group. Anchoring the program in the respective faculty was an important concern that needed to be done by the respective deans. Developing these types of programs requires negotiation within the faculty at the same time, as it is time consuming in order to assure that all decision makers consider this strategically important and that they are willing to spend time and resources on developing the program. Consequently, the deans play an important role in the development work, both with regard to assigning faculty members but also in creating and maintaining upper management commitment in the respective faculty.

[3] Mintzberg (1983) describes six valid organizational configurations; Simple structure characteristic of entrepreneurial organization, Machine bureaucracy, Professional bureaucracy, Diversified form, and Adhocracy or Innovative organization

6. Possible actions for prevention of identified pitfalls

6.1 Clear specification of assignment and existing requirement specification

In order for anyone to be able to conduct their work in an effective manner, the assignment and conditions need to be clearly described. In this specific case, the program development group had their assignment described but they were not clearly aware of the conditions like for instance, the additional groupings and the involvement of others nor when they had succeeded. This caused confusion for the members of product development group that could have been avoided through a clear description of the assignment and a clear organizational structure.

6.2 Existing decision making model

The university adheres to the professional bureaucracy with its characteristics and for a project manager to work in that environment and achieve results, knowledge and experience is required. How some decisions were taken were, for the members of the program development team, unclear and it had an impacts on morale and engagement.

6.3 Appropriate recruitment faculty members

For the people who will be involved in carrying out this type of program development, specific characteristics like listening and communicating well are crucial. Identifying and involving faculty members with these characteristics are of vital importance in order to prevent unnecessary pitfalls.

6.4 Presence of upper management commitment

For the development of the program to proceed, upper management must be engaged in the program and not only focused on the completion of the assignment. The upper management team, i.e. the deans, needs to be engaged in the progress, remove barriers, and also provide assistance in finalizing the work. Finally, the upper management needs to oversee the delivered value from the work.

Concluding there are, according to Schein (1999), three primary areas that each group must work with in order to avoid unnecessary complications 1) the boundaries of the group (who belongs and who does not) 2) the realization of the group's task 3) interpersonal issues and group issues. Most of the pitfalls identified in this study falls within the areas of this framework.

7. Conclusion, delimitations, and future research

Developing and offering interdisciplinary programs will be vitally important for universities and teaching institutions to meet requirements from the future employers of their graduates. Developing interdisciplinary programs is resource demanding, hence efficiency in the development process is essential. This paper reports on the development process for an interdisciplinary program at LNU and concludes that the possible pitfalls include the unclear specification of the assignment, missing decision making model, recruitment of the faculty members, and missing upper management commitment and possible preventions are clear specification of assignment and existing requirement specification, existing decision making model, appropriate recruitment faculty members, and presence of upper management commitment in all activities.

Developing interdisciplinary programs implies breaking the traditional university structure and continually being questioned about how and whether it is possible.This paper illustrates that it is possible, even though it is delimited to this specific case and therefore focuses only on its pitfalls. However, the pitfalls are generic and ought to be considered in program development in general.

An insight made during this study is the importance of leadership and leadership style throughout the development process. This issue has not been emphasized in the current study and hence an additional study ought to be conducted regarding the importance, as well as implications, of leadership and leadership style requirement in a professional bureaucracy.

This paper reports on the development process from initiation through to the creation of the course syllabuses. An essential part of the work, however, is the realization of the interdisciplinary program and hence it needs to be studied. Further, this program was supposed to be conducted together with IKEA and more research is required on how to facilitate this relationship so that both parties benefit.

The target of the work was to develop an interdisciplinary program, however developing a succession plan is necessary for the program's survival. Last but not least is the value of this interdisciplinary program. The question of whether it truly creates graduate students with interdisciplinary skills still remains to be answered.

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