Curriculum design for information management.
Built-in cooperation with business community

Dorte Madsen
Copenhagen Business School,
Dept. of Intercultural Communication and Management,
Porcelænshaven 18A, DK-2000 Frederiksberg, Denmark
dma.ikl@cbs.dk

Abstract. The purpose of this paper is to present the design of a three year bachelor's programme in information management. In 2006, a new educational programme in Information Management was launched at Copenhagen Business School (CBS) in Denmark: BA in Information Management (http://www.cbs.dk/im). Developing this programme was motivated by a wish to launch a programme with a specific focus on the emerging digital, global information world in which we live, and the initiation of the programme was motivated by a strong demand from the business community calling for graduates with a holistic view of information processes and practices in organisations.
The paper focuses on the underlying model for curriculum design which has been developed at CBS. The model takes its starting point in the business community's perception of the graduates' future practice. In the bachelor's programme in information management, the cooperation with the business community has been built into the curriculum design in the form of problem-based projects and an internship. On the basis of a survey of the business community's perception of future practice, a qualifications profile for the programme was formulated. The importance of problem-oriented work is discussed, as well as the interplay between problem-based and discipline-based elements in the curriculum design.

Keywords: curriculum design, business community, problem-based projects, information management

1 Introduction

The purpose of this paper is to present the design of a three year bachelor's programme in information management. In 2006, a new educational programme in Information Management was launched at Copenhagen Business School (CBS) in Denmark: BA in Information Management (http://www.cbs.dk/im). Developing this programme was motivated by a wish to launch a programme with a specific focus on the emerging digital, global information world in which we live, and the initiation of the programme was

motivated by a strong demand from the business community calling for graduates with a holistic view of information processes and practices in organisations.

Madsen (2012) explores the challenges of developing this three year bachelor's programme in information management. The argument focuses on how to create a programme that 1) facilitates cooperation with the business community, 2) represents a coherent whole that fosters student identity and 3) provides an explanatory framework for information management. This paper focuses on the underlying model for curriculum design which takes its starting point in the business community's perception of the graduates' future practice and on how the cooperation with the business community has been built into the curriculum design in the form of projects and an internship. On the basis of a survey of the business community's perception of future practice, a qualifications profile for the programme was formulated. The importance of problem-oriented work is discussed, as well as the interplay between problem-based and discipline-based elements in the curriculum design.

2   Creating a programme in cooperation with the business community

As the name suggests, Copenhagen Business School is a Business University, and cooperation with the business community is part of who we are. In general, CBS has a big network of contacts and interfaces with the business community. Most CBS students do real-life project work on location, in companies and organisations, and CBS employs a large number of external teachers, supervisors and external examiners amongst academically trained practitioners in the business community. At CBS, the development of new programmes always involves surveying the business community, and there is an expectation that business representatives participate in programme development. Furthermore, CBS offers a comprehensive range of integrated programmes that combine e.g. business economics with areas such as psychology, communication, IT, management science, philosophy, area studies and law. Accordingly, most CBS students are equipped with professional, interdisciplinary competencies. In general, CBS gives very high priority to interdisciplinary and problem-oriented approaches and to project work, and there is an expectation that new programmes are interdisciplinary and problem-based.

CBS has a well-established quality policy for degree programmes that includes a general model for curriculum development to address in systematic fashion the conceptual, analytical and methodological complexities involved in developing new programmes. The goal of introducing a general model for curriculum development at CBS was not only an attempt to make the degree

structure for the CBS programmes more transparent, but the desired outcome was to develop a dynamic model for defining final competences based on the continuous changes of the job situation, the pedagogy of the programme(s) and to steer curriculum planning and contribute to increased employability of the CBS graduates.

2.1 Model for curriculum design

The design of the programme in Information Management has been guided by CBS's general model for curriculum development which takes its point of departure in the perception of future practice of the graduates. The model which is reproduced below in figure 1, has been elaborated by CBS Learning Lab (2005), which was a special development and advisory unit. CBS combines its own model with the Danish "Qualifications Framework," a systematic description of an education system's degrees that emphasises the description of final competences to respond at the national level to the demand for clarity and transparency at the European level (The Danish Bologna Follow Up Group's QF working group, 2003).

As the arrows indicate, all the elements of the model are seen as mutually dependent. The model takes its starting point in the business community's perception of the future practice of the graduates, and thus makes it possible for programme development to take into account the needs of the business community.
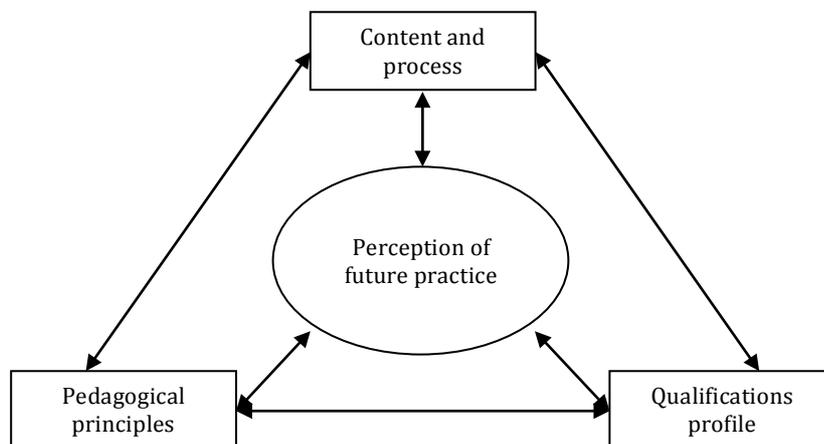

Figure 1. Competence/Qualifications profiles and impact on curriculum development

Overall this model has guided the development of the bachelor's programme in Information Management. Our point of departure has been the perception of future practice; we have formulated a qualifications profile, discussed pedagogical principles, and we have decided upon content and processes of the programme, as will be explained in the following sections.

2.2 Perception of future practice

The starting point of curriculum design according to the model, figure 1, is surveying the business community. Accordingly, it is assumed that the stakeholders' perception of future practice has an impact on the content and the pedagogical methodology of the curriculum as well as the qualifications profile (CBS Learning Lab, 2005). The crucial first step in developing a new programme is to talk to prospective employers of the graduates, about the needs of the business community and the society at large; to discuss with them how they as stakeholders perceive the future business practices of the graduates so as to ensure the relevance of the qualifications of the new graduates. Thus, it is the stakeholders who provide guidance with respect to defining a qualifications profile for the prospective graduates of a new programme. This also implies that it is primarily the stakeholders' perception of future business practices that frame the field to be covered by the new programme. In the Information Management programme, the main challenges that were reported by the business community were:

- Many organisations experience a "no man's land" between islands of expertise or departments, typically between IT and marketing or communications.

- Need for persons with a holistic view of information processes and practices in organisations

- Need for paradigm shift to digital work processes

The starting point in the perception of future practice meant that the development of the Information Management programme started from scratch. There were no existing programmes in Denmark that address these challenges and no existing programmes in Denmark that the development of a new programme could be based on.

2.3 Qualifications profile

Based on the stakeholders' perception of future practice, the following qualifications profile was formulated:

Graduates from the bachelor's programme in Information Management are able to:

- Manage communication, information and knowledge on a strategic, analytic and practical level
- Analyse and evaluate how communication, information and knowledge processes can be optimised in organisations and corporations
- Identify and develop recommendations for action and strategy formation, thereby supporting and contributing to strategic processes and other organisational goals
- Communicate professionally in English and cooperate successfully with people of different professional backgrounds

As a basis for the above competencies, the successful graduate will have:

- An integrated core competency in management of information, communication and knowledge
- Solid understanding of the potential for and limitations to information sharing and management posed by information and communication technologies
- Solid understanding of contemporary issues and innovations in a globalised and networked environment of organisations and corporations in the knowledge society.
- A solid foundation in Interdisciplinary Research Methods, organisation theory, theories of information and knowledge management, communication theory and informatics
- Ability to work across disciplines and departments
- Ability to work in a project-oriented and process-oriented manner.

In accordance with the general model for curriculum design, figure 1, the input from the business community and their perception of future practice was translated into the above qualifications profile. It may be argued that the needs reported by the business community were very general; they did however function as the points of reference for our discussions and decisions about the qualifications profile.

Using the challenges reported by the business community as signposts to frame the field to be covered by the new programme encourages a top-down development process in which creating the whole takes priority over creating the programme elements, for instance the courses. Thus, at this stage in the development process, having had the input from the business community, and formulated the qualifications profile, the major question I was faced with was not which courses to include in the programme but more something like how

to develop a programme where students' competencies will reflect the business community's needs. The next step in the process, according to the model for curriculum development, figure 1, was considerations about pedagogical principles. How could we build a programme structure that could facilitate progression and continuous interaction between the business community's needs and the competences of the graduates.

CBS's background for introducing a general and dynamic development model that focuses on the challenges and problems that the business community is facing in their daily practice can be seen as a reaction to a more traditional, and perhaps non-problematised, model for curriculum development according to which the main concern when developing educational programmes has been the contents and the coverage of a new programme. In the above model, figure 1, content is only one element. Consequently, programmes developed according to this model are typically more focused on problems than on subjects. However, a problem-based approach still needs to build on a disciplinary base. In the current programme, the disciplinary base must be seen in the light of the whole of the programme and the focus on information-related problems. The main point is, however, that the development of the programme did not start from the contributing disciplines. It started in the perception of future business practices according to the general model for curriculum development. Curriculum development according to this model is a top-down process that starts with developing the programme identity from scratch. In this way, thinking in terms of disciplines becomes secondary to conceptualising the new programme identity. It is not until the qualifications profile and the programme identity have been determined that it will be possible to decide which disciplines and disciplinary elements to draw upon and how to combine them.

At this point in the development process, we needed to develop a programme structure that could facilitate a match between graduates' competences and the needs of the business community, and interaction between practice and theory. And we needed to develop some principles according to which we could handle progression and the interplay between discipline-oriented and problem-oriented elements.

3 Programme structure BA in information management

The programme structure we decided upon is a combination of discipline-based courses, problem-based projects and an internship. It was decided that three problem-based projects and an internship should be the cornerstones of the programme structure to ensure cooperation with the business community. The structure is outlined in the following figure 2, and will be explained in the following sections.
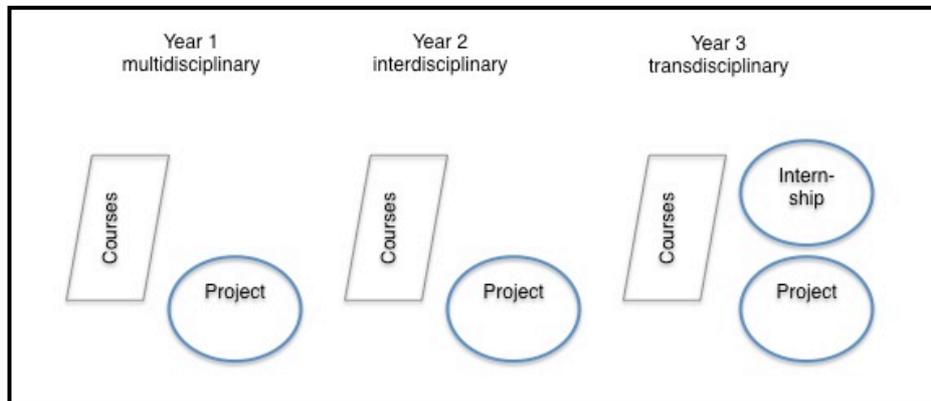
Figure 2. Programme structure BA in Information Management

3.1 Interdisciplinarity

Before I describe the elements of the above model, figure 2, it is neccesary to address the issue of interdisciplinarity. A discussion of interdisciplinary theory is beyond the scope of this paper, and can be found in Madsen (2012), but we need to emphasize the existence of a continuum of integration from multidisciplinary to interdisciplinary to transdisciplinary, as established by Aboelela et al. (2007).

In the bachelor's programme in Information Management, interdisciplinary theory is used to handle the diversity of disciplines involved in the programme, and, as will appear from figure 2, an explicit distinction is made between multi-, inter- and transdisciplinarity. We use this distinction as our primary pedagogical and organising principle and means of creating progression. Roughly speaking, 1st year of the educational programme is multidisciplinary, 2nd year is interdisciplinary and 3rd year is transdisciplinary. The primary instruments for managing this continuum of integration are the problem-based projects.

Interdisciplinary theory and its continuum of integration from multi-disciplinarity in year 1 to interdisciplinarity in year 2 to transdisciplinarity in year 3 can be seen as the backbone of the programme structure, cf. Madsen (2012). This continuum of integration from multidisciplinary to inter-disciplinary to transdisciplinary has been built into the bachelor's programme in Information Management. Using this continuum, it is possible to build up progression in that chronologically, the continuum indicates a direction from the least complex programme elements to the most complex and in that the

individual programme elements can be organised along the continuum of integration from least to greatest degree of synthesis.

In the following section I will go through the elements of the programme, as outlined in figure 2, and discuss how they contribute to the whole.

3.2 Programme elements
The programme elements are organized in the following way:
In the 1st year, the programme elements, including the project, are organised as parallel multidisciplinary, which means that in the 1st year, the courses are taught in parallel, each from their own discipline-specific perspective, and the different disciplinary insights are not related to each other until the end of the year in the project. The formal requirement for the 1st year project is that it should be multidisciplinary, but the major part of the students, it has turned out, are able to relate disciplinary perspectives to each other, and integrate insights which is why some of them end up with interdisciplinary products.

In the 2nd year, the programme elements are organised as interdisciplinary, primarily through integrated exams for two courses at the same time. The courses in the 2nd year each incorporate more than one discipline-specific perspective and disciplinary insights, and interdisciplinary insights are related to each other in integrated exams. For example, the courses 'Information in Context' and 'Computer-mediated Communication and Collaboration' have an integrated written exam in which the students analyse an information product, drawing on theories from both courses and showing how the theories from the two courses apply to the information product, and how the theories supplement or contradict each other. The 2nd year project has to be an interdisciplinary project where the students identify disciplines relevant for their problem, discuss how disciplinary elements or insights complement or contradict each other.

In the 3rd year, the programme elements aim at integrating and transcending disciplinary perspectives to forge a holistic view of information processes and practices in organisations. Besides the bachelor's project, and the courses, programme elements also include an internship, where students have the opportunity to explore an information-related problem in the field of practice. Furthermore, in the bachelor's project, besides aiming for a holistic view of information processes and practices in organisations, students are required to identify disciplines relevant to their project and relate their problem to a more discipline-specific view of information management.

3.2.1   1st year programme elements:

The overall needs expressed by the business community, and the qualifications profile's focus on organisational and communicational processes were translated into the following combination of disciplines in the 1st year of the program, which are taught in separate courses:

- Fundamentals of Information Systems
- Fundamentals of Communication
- Organizational Communication
- Organisational Studies
- Interdisciplinary Research Methods
- (1st year project Communication in organisations)

3.2.2   2nd year programme elements:

Courses as e.g. 'Information in Context' and 'Information Management and Organisational Change' are introduced in the 2nd year of the programme. Furthermore, during the 1st and 2nd years, the programme element 'Interdisciplinary Research Methods' function as a bridge between the disciplinary perspectives and the project work.

- Information in Context (information science)
- Computer-mediated Communication and Collaboration
- Project Management
- Organisation, Innovation and Systems Design
- Corporate Communication
- Information Management and Organisational Change
- Interdisciplinary Research Methods
- (2nd year project Information and knowledge in organisations)

3.2.3   3rd year programme elements:
- Electives
- Internship
- Communication and Knowledge Management
- Business Economics and Information Management
- (3rd year project Bachelor's Project Information Management)

It is a basic assumption of the Information Management programme that in order to be able to manage complex tasks relating to information management in an organisational setting, students must first master basic skills within the fields of communication studies, organisational studies and information systems. These first year courses serve as the basic courses that provide the

foundation for second year courses as for example 'Information in Context', 'Computer-mediated Communication and Collaboration' and "Information Management and Organisational Change' which together with the remaining second and third year courses provide the theories, concepts and tools required for students to form an integrative framework for building up their graduate identity and a holistic view of information processes and practices in organisations. The 1st year courses must be seen in the light of the rest of the programme elements, the problem-based focus of the programme and the continuum of integration.

4 Cooperation with the business community

According to the programme structure outlined in figure 2, it was decided that three problem-based projects and an internship should be the cornerstones of the programme structure to ensure cooperation with the business community. In each of the three undergraduate years, one entire quarter is dedicated to problem-oriented project work. The thematic frameworks of these projects develop along the continuum of integration, cf. Aboelela et al. (2007), Madsen (2012):

- 1st Year Project: communication in organisations (multi- and potentially interdisciplinary)
- 2nd Year Project: information and knowledge in organisations (interdisciplinary)
- 3rd Year Bachelor's Project: Information Management (transdisciplinary)

The projects must be based on a problem in practice, and the disciplines or disciplinary perspectives to be drawn upon differ in number and thematic complexity. The thematic framework of the 1st year project is communication in organisations, where students draw on two disciplines communication and organisation theory; in the 2nd year project they involve more than two disciplines and disciplinary perspectives, and the 3rd year bachelor's project involves all disciplines and disciplinary insights to be able to address the problem chosen.

Furthermore, in their third year, the students do an internship. Internships provide students with a real life professional learning experience and offer students a unique opportunity to gain hands-on experience in a business company, institution or organisation that works professionally with issues relating to information management. The main objective of internships is to convert academic and theoretical knowledge into professional experience. In addition to the projects and the internship, the programme also consists of

discipline-based elements, that is courses which are chosen against the background of the continuum of integration, as has been explained above.

CBS has a philosophy of problem-based learning. The general model for curriculum development and its starting point in perception of future business practices, cf. figure 1, focuses on the challenges and problems that the business community is facing. This also means that a problem-based focus for designing a new programme is more or less implied. A problem-based focus lends itself to multi- inter- and transdisciplinary approaches. The whole idea of developing an integrated, interdisciplinary programme is to engage a number of disciplines and multi-, inter- and transdisciplinary insights to encourage integrated solutions to complex problems. CBS' model encourages a focus on the problems and challenges that the prospective graduates will be trained to address in the future. In the Information Management programme, this problem focus has been built into the programme design, or rather, programme elements have been designed so that students are exposed to problems and situations that represent different degrees of complexity along the continuum of integration from least to greatest degree of synthesis. In an educational programme it is possible, to a large extent, to design a controlled environment where problems and challenges can be administered according to increasing degrees of complexity, and where it can be decided beforehand if the outcome of a project should be multi-, inter- or transdisciplinary. This does not necessarily apply in general to problems and challenges in the field of practice or in research projects. Furthermore, the problem-based approach, besides being a framework for students' training ground in interdisciplinary work, is a cornerstone in fostering students' analytical capabilities in information management.

In the bachelor's programme in Information Management, problem-based and discipline-based programme elements have been balanced against each other. The courses are important for training students' basic analytical capabilities and disciplinary approaches to problems and challenges relating to information, information processes and information management. Pedagogically it is important to first work in depth with a discipline's basic concepts, assumptions and theories before relating two or more disciplines to each other, identifying common ground and integrating insights, cf. Repko (2008, p. 142). Working with the continuum of integration in problem-based projects means that the courses, besides providing the basic theories, concepts and discipline-specific insights, also function as the starting point for creating or discovering common ground in inter- or transdisciplinary work. When working with the continuum of integration, the whole is greater than the sum of its parts.

The programme elements projects and the internship are built in to facilitate cooperation with the business community, and interaction between theory and practice. The projects must be based on a problem in practice which means that all students must cooperate with an organisation at some point during their project work. Applying the general model for curriculum development, figure 1, offers an approach by means of which we can systematically work with the business community as an important factor in curriculum design.

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