Chapter 11

Curriculum Design for Enhancing Employability through Learning Experiences with External Stakeholders

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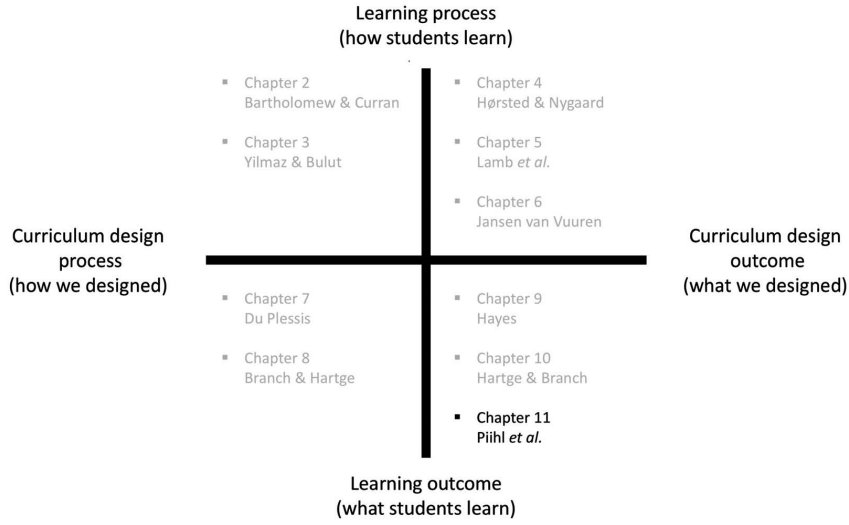

Introduction

We contribute to the book *Learning-Centred Curriculum Design in Higher Education* by offering three metaphors for understanding the role of and relationship with external stakeholders, who play an important role in designing and delivering the curriculum. Further, we discuss how learning activities within a curriculum can form different types of relationships with external stakeholders. This is an important consideration when assessing ways to increase societal relevance in a curriculum and to enhance students' employability without sacrificing on academic quality.

In relation to the central model of the book, we position our chapter in section four – Learning Outcome/ Curriculum Design Outcome – since we address curriculum designs and specific learning outcomes – with an emphasis on student-employability.

Employability is a topic of considerable priority in the political debate around higher education in Europe (Commission/EACEA/Eurydice, 2014). This urges universities to give explicit attention to student employability. This challenge sometimes leads to universities offering extra- and co-curricular activities to students (e.g., see Hui *et al.*, 2017) in order to prepare them for work life after graduation – or in other words, "to enhance their employability".

The approach of this chapter is that we ought not to consider the demand for employability as an additional one that might come at the expense of academic quality when prioritising within the limitations in the curriculum. Instead, we should consider employability as the consequence of an explicit emphasis on quality and relevance within the curriculum.

In the literature, outcomes-based curriculum models form a bridge between the professional contexts in which the students are going to operate and curriculum design by translating competencies of skilled practitioners into specific learning outcomes that curriculum designers intend students to accomplish. These learning outcomes are translated into courses, which entails content, activities, and assessments, amongst other things (Harden, 1999). However, Grant (2006) argues that the underlying theory behind this perspective is flawed, since the competencies cannot be separated from performance in the complex practices in which students are expected to engage in. Therefore, there is a need for discussing curriculum design in a way that highlights the integration of relevant professional contexts into learning activities within the curriculum. Reading this chapter, you ought to gain at least three insights:

1. a new perspective on curriculum design emphasising professional, external environment integration into learning activities in order to promote employability;
2. a framework for designing specific course activities;
3. two inspirational examples that illustrate how this new perspective and this framework translates into curricula in different ways.

We have structured our chapter in four sections. In section one, we briefly elaborate on established perspectives about curriculum design, emphasising these perspectives' relations to the external environment. In section two, we develop three metaphors that challenge the way we look at an academic curriculum. The three metaphors conceptualise the curriculum as either a:

1. closed tube with an external environment at the end of the tube;
2. glass tube with windows through which students can get glimpses of the outside world without getting "messy"; and
3. perforated tube with holes enabling real-life exchanges with the outside world, with all the "messiness" this involves.

The metaphors are characterised by their perspective on learning, quality, relevance, and thereby ultimately on their approach to enhancing employability. In section three, we present a model for conceptualising how we can design specific learning activities that involve different forms of exchange with contexts outside the control of higher education institutions. In the fourth and final section, we discuss these elements in relation to contemporary work on curriculum design at two different campuses with the same overall curriculum but with different challenges regarding the academic environment, external environments, and student body.

Section 1: The Role of the External Environment in Curriculum Design

In the literature, the term *curriculum* is used to describe either the design of individual courses (Biggs & Tang, 2007) or the design of programmes of study as a collection of courses. In this chapter, we refer to the latter perspective. Samuelowicz & Bain (1992) examined different conceptions of teaching held by academics within the fields of science and social science. One of the conceptions they identified concerned teaching as the transmission of knowledge within the framework of an academic discipline. If we translate this conception of teaching into a discussion about curriculum, it points towards designing curriculum around specific academic disciplines. This then results in discipline-based or subject-based curriculum design. In discipline-based approaches to curriculum

design, the emphasis is on facilitating or transmitting knowledge on specific disciplinary subject areas to students. This approach links to external environments by considering the appropriate disciplines to be covered in order to develop academics with a relevant combination of disciplinary knowledge. Eventually, external stakeholders can play a role in deciding on disciplines to be covered through participation in advisory boards. Within medical education (Harden, 1999) suggested to change this relation to the external environment in curriculum design by advocating for an outcomes-based approach. The outcomes-based perspective is also found in other areas of higher education, such as in business (Brady, 2015), social work education (Ring, 2014), and entrepreneurship (Rezaei-Zadeh *et al*., 2014). Following an outcomes-based approach, the point of departure for curriculum design is an investigation of the knowledge, skills, and competencies required by professional practitioners of the corresponding field. The curriculum is then designed aiming to establish such knowledge, skills, and competencies. In the medical field, for example, Harden (1999) identifies three dimensions for describing outcomes for doctors:

1. what the doctor is able to do;
2. how the doctor should be approaching the task;
3. personal attributes.

In order to develop learning outcomes that can guide curriculum design, Harden (1999) suggested that learning outcomes should:

1. reflect the vision and mission of the institution;
2. be clear and unambiguous;
3. be specific and address defined areas of competence;
4. be manageable;
5. be defined at an appropriate level of generality;
6. assist with the development of "enabling" outcomes;
7. indicate the relationship between different outcomes.

However, the question that can be asked is that if we base our curriculum design on defined outcomes that follow the seven criteria above (e.g., are

specific in a defined area, clear and unambiguous, and manageable), do we then address the complexity the students need to be able to meet when confronted with the real practice after graduation? The question regarding the complexity in the context of practice calls for new perspectives that approach the relation to outside context in radically different ways compared to discipline-based and outcomes-based approaches to curriculum design. Still within the field of medicine, Grant (2006) relates the outcomes-based approach to curriculum design to behaviourism and argues that contemporary approaches to curriculum design move beyond the assumptions and implications held in behavioural theories: "*The learning theories that inform today's curriculum design seem to be very far from the ideas of behavioural theories of learning, and from the idea that the knowledge base of the discipline must first be learned before its application can be attempted. Today's trajectory of learning is flatter, with integration being the hallmark throughout the course, and deep learning in the context of practice its aim.*" *(Grant, 2006:14)*. In discussing elements important for learning, Knight (2002) argues that student engagement is crucial when explaining the act of learning. He continues to argue that engagement cannot be reduced to merely equating time on a task:

> "*[Engagement] extends to learners' engagement in communities of practice, to their involvement in a variety of networks and to the amount and quality of interchanges with others.... According to Brown & Duguid (2000), participation in communities and networks regularly sustains learning that is not easily specified in advance, cannot necessarily be measured and is often unpredictable. Important things are learned in vibrant communities that lie outwith the formal curriculum and complement it.*" (Knight, 2002:275).

Both of these examples point towards integrating learning into contexts of practice. However, the latter citation points towards learning in relation to communities as something that lay outside the formal curriculum. However, if learning in contexts of practice is important, then we need to develop models for considering this as an integral part of the formal curriculum. In the following section, we develop three metaphors for curriculum design that highlight the different forms of relationships with the external environment.

Section 2: Three Metaphors for Curriculum Design

In this section, we briefly describe three dimensions distinguishing the metaphors that we develop to describe curriculum designs. Thereafter, we present and elaborate on each of the metaphors related to the dimensions.

Perspectives on Relevance

Knight & Yorke (2004) have developed a simple, provocative, and insightful framework for increasing students' employability, namely, the USEM-framework. They argue that traditionally universities focus on developing students' understanding of specific content. They also argue that the quest for employability has led universities to supplement the understanding of content with the development of specific skills that are considered relevant to those workplaces that programme planners envisage graduates to enter. Many universities stop at this level. However, Knight and Yorke (2004) suggest that we need two additional levels. The first is a focus on developing students' self-efficacy. Bandura (1993:119) describes efficacy as follows: "*Among the mechanisms of agency, none is more central or pervasive than people's beliefs about their capabilities to exercise control over their own level of functioning and over events that affect their lives. Efficacy beliefs influence how people feel, think, motivate themselves, and behave.*" In a meta-analysis, Robbins *et al.* (2004) found that among nine psychological and study skill factors, academic self-efficacy was the best predictor of college performance. Artino (2012) discusses how self-efficacy can be enhanced in education "*by providing students with authentic mastery experiences*" (Artino, 2012:81). The last element in Knight & Yorke's (2004) framework highlights the ability to question one's own learning and to question existing processes and existing courses of events. They term this *metacognition*. This element links closely to learning outcomes from research-based teaching, with its inherent critical stance towards existing knowledge as being temporary.

Perspectives on Learning

The second perspective, which distinguishes our metaphors, concerns perspectives on learning coming from Biggs' (2012) discussion of the stages in the development of perspectives of learning in higher education. At the first stage, it is believed that learning is an effect of "who the student is". At the second stage, the focus falls upon the role of the teacher. This is underpinned by the notion that learning is an effect of "what the teacher does". At the third stage, the focus falls upon the student. Here, learning is viewed as an effect of "what the student does". However, mindful of Knight & Yorke's USEM-model and focus on self-efficacy and metacognition as elements in providing competences relevant for employability, as well as the latter perspectives on curriculum design, we suggest adding a fourth stage highlighting relations with external stakeholders. The fourth stage suggests that learning is also an effect of "what students do in interaction with relevant external environments".

Perspectives on Quality

The last perspective distinguishing our three metaphors concerns issues related to quality. In higher education, it is ingrained in our culture that quality relates to research, which forms the foundation for teaching and learning. One commonly known model when discussing research-based teaching is presented by Healey (2005). This model uses two dimensions for distinguishing between four modes of research-based teaching. The one dimension considers the role of research in teaching: On the one hand, teaching can address the results of research (i.e., the "research content"), on the other hand teaching can address the "research process". The other dimension addresses the role of students in the teaching process. One can rightly ask: Are the students considered to be an audience or active participants during teaching? This results in four forms of research-based teaching. *Research-led* teaching describes teaching designs where the focus is on content/research results, and students are engaged in teaching as an audience (e.g., lecturing). *Research-tutored* teaching depicts designs with a focus on content, while the students are actively engaged in the processes as participants (e.g., through seminar activities discussing results of

existing research). This might help students to develop a critical approach towards knowledge.

In *research-oriented* teaching, the focus of teaching moves from results or content to a focus on the research process. In research oriented teaching, the students are engaged as an audience, where they, for example, attend lectures on methodology. The term *research-based* teaching refers to designs where students are actively engaged in a research or knowledge-production process as participants themselves.

Three Caricatured Metaphors

The table below suggests three metaphors for curriculum design that apply these perspectives as distinguishing features. The metaphors are purposely caricatured to highlight specific features of each of them. Hayes (in this volume) points out that the word "curriculum" is derived from the Latin verb *currere*, meaning to run. This implies the idea that a curriculum is about motion. In the metaphors presented here, this idea of motion is illustrated by the idea of a tube. A tube is designed to channel a flow in certain directions.

The first metaphor considers a curriculum as a closed tube in relation to the external environments. In this metaphor, the students engage with the environment at the end for the tube. The second sees curriculum as a glass tube, where links to external environments are shown to students throughout the curriculum. The last metaphor envisages the curriculum as a perforated tube, with holes that allow access to the external environment. This means openings for real-life interactions with stakeholders in order to practice mastery and relevance in authentic settings.

The metaphors are not mutually exclusive, meaning that a curriculum inspired by the perforated tube metaphor can have elements recognised from the other two metaphors. The metaphors are briefly summarised below.

Image of Curriculum			Closed tube (Discipline-based)	Glass tube (Outcomes-based)	Perforated tube (Integrated)
Perspectives on	Learning	**Learning is an effect of**	What the teacher does	What the student does	What the student does in relevant professional contexts
	Quality	**The role of research in learning**	Research-led	Research-tutored Research-oriented	Research-led Research-tutored Research-oriented Research-based
	Relevance	**Relevance in learning goals**	Academic content is relevant (U)	Academic content is relevant (U) Skills are practiced (S)	Academic content (U) Skills (S) Efficacy (E) Metacognition (M)
		Relevance in learning processes	Relevance is "explained". Relevance through input.	Relevance is "shown". Relevance through input.	Relevance is "practiced". Relevance as output.

Table 1: Three metaphors for linking curriculum design to the external environment.

An image of a curriculum as a *closed tube* describes a discipline-based curriculum with a series of courses aimed at research content and with students primarily taking part in learning as an audience. A curriculum as a closed tube gains its relevance from a specific selection of theoretical content (understanding) that is selected in order lead to a portfolio of knowledge and skills that employers are envisaged to demand. In this way, relevance is built into the curriculum as an *a priori* input. However, when developing a discipline-based curriculum, the specific disciplines and content might also be a result of internal university politics and

negotiations between research disciplines rather than a collection developed with the external environments in mind. An image of a curriculum as a *glass tube* opens the curriculum in a way that makes it possible for the students to see the professional environment that the curriculum is designed to prepare them for. In relation to the established perspectives on curriculum design that were discussed above, we relate this broadly to the outcomes-based approach for curriculum design. According to the outcomes-based approach, links to the external environment can be made through explicit outcomes and skills that are demanded by the professional environment. However, links to the environment can also be made through the use of examples in the classroom, case-based teaching, and maybe even guest lectures or company visits. In addition to building relevance and employability into the curriculum through selection of content (understanding) and skills, this metaphor of a curriculum aims at showing students how content and skills can be relevant rather than just explaining, as suggested in the closed-tube metaphor.

The metaphor of a curriculum as a *perforated tube* takes the relationship to the external environment to a new level in highlighting that relevance and employability can be designed directly into the curriculum by designing learning experiences with actual interaction between students and professional environments that is relevant for future employment. These forms of committed interactions make more advanced and diverse learning outcomes possible in comparison to what can be narrowed down as outcomes in the outcomes-based approaches. Through actual interactions, the students also develop their abilities to act professionally based on their knowledge, skills, and competencies and reflect upon their knowledge in different types of situations. As a result, students may enhance their self-efficacy as well as their ability to reflect upon their own knowledge (metacognition) (Knight & Yorke, 2004). In this way, relevance is practiced and developed as an output of learning processes in the curriculum. The metaphor of the *perforated tube* emphasises the interaction with the external environment. However, it should be noted that the metaphor also suggests that a curriculum has closed elements where students can focus on specific disciplines without an emphasis on its immediate relevance, as well as elements from the glass-tube metaphor, which entails strictly guided interactions with stakeholders through cases and examples.

The next section will elaborate on a model for developing different types of learning experiences that involve interaction with external environments. Curriculum designers can use this model as an inspiration for developing more advanced learning experiences that involve a gradual increase in complexity of interactions with stakeholders. The last section gives examples of how these gradually more advanced learning experiences can be included in a curriculum.

Section 3: How to Develop Learning Experiences in Collaboration with External Stakeholders

In this section, we discuss a framework that propagates ideas for how learning experiences involving external stakeholders can be designed. The framework is inspired by one that has been put forward by Piihl *et al.* (2014). It has been developed to highlight different aspects related to learning experiences that involve interaction with external stakeholders. The framework has two dimensions, and on each dimension responsibility is gradually transferred from the teacher towards the students. The one dimension focuses on responsibility for selecting the specific academic content within a given learning experience. In the one extreme, the responsibility resides with the teacher, and as we move towards the other extreme, the responsibility is gradually given to the students. The other dimension focuses on who holds the responsibility for interaction with external stakeholders. Again, at the one extreme, the responsibility resides with the teacher, and as we move along the dimension, the responsibility is gradually handed over to the students. In this way, the framework aspires to develop a curriculum that allows students to gradually take over responsibility for the content and also the interactions. Within the framework, this means that the curriculum should gradually move students from the upper-left to the lower-right corner:

		Who holds responsibility for the selection of academic content?	
		Teacher	**Students**
Who holds responsibility for interaction with stakeholders?	**Teacher**	Case-based learning Guest lectures Courses requiring data from interaction with external stakeholders	Problem-based learning Live cases Learning camps Research reports in collaboration with external stakeholders Internships
	Students		

Table 2: Framework for learning experiences with interactions with external stakeholders.

In the upper-left corner, the teacher has responsibility for selecting the specific academic content. Likewise, the teacher has responsibility for interaction with stakeholders. Learning experiences in this area can include praxis-oriented cases, guest-lectures, company visits, etc., where the responsibility for interactions with stakeholders are primarily held by the teacher and the interactions are focused on exemplifying or giving perspective to specific elements of the academic content. In this way, the primary emphasis is on academic content (i.e., "Understanding" in the USEM framework). These learning experiences give the students windows through which they can get glimpses of the world outside the university (see the metaphor of curriculum as a glass tube).

If we stay in the left side of the framework, where the teacher holds responsibility for the content, but transfer some of the responsibility for interactions with stakeholders to the students, we move towards the lower-left corner. In this area, we work with, for example, courses that require the students to produce data in collaboration with external stakeholders of their choice. This requires students to engage with external

stakeholders, which develops their self-efficacy and helps them practice skills in communicating around academic content and issues with externals.

In the centre of the framework, we have placed what we call "live cases". Live-cases are distinguished from written cases or guest lectures by the level of involvement with stakeholders during the learning experiences. For example, this could be stakeholders exhibiting real-life issues/problems/questions related to the subject area being studied in a course. If they participate as a live case, they not only show up as a one-time guest lecturer but also participate several times during the course, during which time different aspects of various issues are present. They allow students to work with the problems over longer periods of time as well as allowing for more direct and closer interactions. In this way, opportunities become available for the development of skills in relation to addressing specific real-life issues. This also gives students the opportunity to practice interacting professionally with stakeholders, which can enhance students' skills and efficacy. Furthermore, students are forced to relate their disciplinary knowledge to real-world problems, and communicate their ideas outside the classroom context.

Moving towards the right side of the framework, the responsibility to make decisions about the academic content is gradually transferred from the teacher to the students. This move creates more advanced learning experiences where students are responsible for defining relevant issues and selecting appropriate theoretical frameworks for addressing these issues. This opens opportunities for learning experiences, which address what Knight and Yorke (2004) term *metacognition*, as discussed above. Problem-based learning is one way of organising learning experiences in the right side of the framework. Savery (2006:12) describes problem-based learning as an approach: *"…that empowers learners to conduct research, integrate theory and practice, and apply knowledge and skills to develop a viable solution to a defined problem. Critical to the success of the approach is the selection of ill-structured problems (often interdisciplinary)."* This description of problem-based learning does not explicitly address the relationship between students and external stakeholders, which is the vertical axis in the framework. However, applying this dimension to the design of problem-based learning adds a structured way of designing learning experiences that also involves external stakeholders. Problem-based learning

can be designed around (ill-structured) problems defined by the teacher and can involve interaction with external stakeholders to varying degrees. This also means that the levels of responsibility for the interaction and the form it takes vary in terms of the role of the teacher and the students.

In the right-hand side of the framework – towards the middle on the axis regarding responsibility for interaction – we have placed what we term *learning camps*. Camp Get Closer, as discussed by Piihl *et al.* (2016), is just one example. Camp Get Closer is a four-day event where students are grouped across semesters and educational programmes from social sciences, engineering, and the humanities to work on issues held by local companies and institutions. The external stakeholders (companies and institutions) are selected by the camp organisers, while students are responsible for the interaction during the camp. During the camp, the students are responsible for making the final interpretations of the issues at stake and practicing how they can apply their theories in ways that make them relevant. Since the students are grouped across semesters and educational programmes, there are no predefined approaches or academic content. When students need to select, and negotiate the content and approaches, they are provided with an opportunity where they can practice how they can be relevant with their knowledge in interactions with others. In this way, relevance is practised as an output of the learning experience rather than an input, which is in accordance with the perforated-tube metaphor's approach to relevance.

Moving to the lowest part of the framework, where students have responsibility for interactions with stakeholders, we have positioned *research reports developed in collaboration with external stakeholders* around the middle regarding responsibility for academic content. Research reports could, for example, be bachelor or master theses. These types of learning experiences are placed in the middle of the dimension on responsibility of content, since specific requirements as well as methodologies, which are considered appropriate for developing a scientific report, influence the issues and topics that can be addressed as well as the working procedures.

Towards the bottom right corner, the responsibility for interaction with stakeholders as well as responsibility for the selection of academic content are transferred to students in interactions with external stakeholders. One way to organise learning experiences in this area of the

framework is internships. Piihl *et al.* (2014) discuss a model for organising internships in accordance with the approach to relevance as an output, as suggested by the perforated tube metaphor. The approach asks students to develop experiences related to what it means to be an academic in practice. The point of departure in the internships is involvement in ongoing processes in host organisations or problems stakeholders ask the intern to look into. From this departure, the students are asked to critically reflect on processes and problems in the organisational setting in order to negotiate definitions of problems with the stakeholders as well as selecting the specific knowledge areas/academic content appropriate for the engagement. Facilitated by supervisors, students are required to practice their ability to engage and interact actively with stakeholders (efficacy), and they practice their ability to question unfolding events and acquire the skills necessary for engaging in problem-solving in real-life contexts (metacognition).

This list of examples is by no means complete and only serves to inspire new forms of learning experiences based on the framework.

Section 4: Two Tales of the Perforated Tube Metaphor and Curriculum Design

This section briefly discusses how the metaphor of a perforated tube can inspire curriculum design through a conscious variation in learning activities that emphasise employability through learning experiences incorporating interaction with the external environment. The section is based on an example from business studies, while du Plessis (in this volume) provides another example of a curriculum involving external stakeholders, but in a very different context, namely, the context of primary school teacher education in South Africa.

The example here is taken from the University of Southern Denmark, which offers a BSc in Economics and Business Administration at five distinct campuses. The core of the six semesters and 180 ECTS curriculum (see Branch & Hartge, in this volume, for a description of the ECTS model) is built around a set of standardised disciplines that are widely expected to be included in this type of educational programme: micro- and macroeconomics, entrepreneurship, organisation, marketing, finance,

accounting, mathematics, statistics, business law, strategy, and a bachelor thesis. This core equals 120 ECTS, leaving 60 ECTS for campus-specific courses and electives. These 60 ECTS are developed independently at each campus to draw upon the strengths and possibilities in the research groups at the campus as well as the specific opportunities the campus can develop together with external stakeholders in proximity to each campus. The 60 ECTS that vary between the campuses is divided into 10 ECTS on the second, third, and fourth semester and 30 ECTS on the fifth semester. An overview of the curriculum is given in the table below. The table has the first semester at the bottom, progressing to the sixth semester at the top.

<table>
<tr><td>6</td><td colspan="3">Bachelor Project
(20)</td><td colspan="2">Strategy
(10)</td></tr>
<tr><td>5</td><td colspan="3"></td><td colspan="2"></td></tr>
<tr><td>4</td><td rowspan="2">Macroeconomics (10)</td><td rowspan="2">Accounting (10)</td><td>Advanced Quantitative Analyses (5)</td><td>Business Law (5)</td><td colspan="2">60 ECTS for campus-specific activities and electives</td></tr>
<tr><td>3</td><td colspan="2">Finance (10)</td><td colspan="2"></td></tr>
<tr><td>2</td><td rowspan="2">Microeconomics (10)</td><td rowspan="2">Mathematics and Statistics (10)</td><td colspan="2">Marketing (10)</td><td colspan="2"></td></tr>
<tr><td>1</td><td colspan="2">Organisation with Theory of Science (10)</td><td colspan="2">Entrepreneurship and Understanding Business (10)</td></tr>
</table>

Table 3: Curriculum for the BSc in Economics and Business Administration.

To illustrate the perforated tube metaphor and the accompanying framework, we briefly illustrate how they inform the curriculum design at two of the campuses.

At the first campus, there is a long-standing tradition for learning experiences involving external stakeholders. Here, the students are expected to find opportunities for collaboration with a local business and

spend one day a week at the company during the second to fifth semester. The university offers some degree of facilitating assistance in connecting the students to companies, but students are ultimately responsible for closing the agreement with a company. In this way, the university does not guarantee a company agreement for each student (see Klein & Weiss, 2011, for an analysis of the effects of forced internships).

During each semester, the students attend at least one course, where the teacher decides the academic content, whereas the students are responsible for drafting a report concerning the themes related to the specific companies where they are working. Gradually, these assignments become more and more open-ended, thus moving the learning experience towards the lower-right corner in Table 2. This means that the students gradually become responsible for negotiating problems and processes with stakeholders as well as selecting academic content to guide the work towards solutions.

The second campus under consideration is characterised by a large proportion of international students. However, the political discourse is increasingly questioning the contribution that international students make to the national labour market. In a recent press release (UFM, 2017), the Ministry of Higher Education and Science has announced that due to this issue, they will reduce the intake of international students by 25% at non-research-based higher education institutions.

Consequently, the unique challenge at this campus is to create relations between international students and local companies and other institutions in order to turn incoming international students into a skilled workforce that can offer their skills to the region after graduation.

The local business community is very open to creating opportunities for collaboration – however, the students' interest is not to be taken for granted. Therefore, the idea of the perforated tube and the framework of forms of relationships suggest that we integrate interaction with stakeholders in gradually more advanced forms during the curriculum in a way that makes it a natural way of learning, by starting with guest lectures and moving into live cases and courses with requirements of data. The relations that students create with local business can then be used as a channel for developing internships, collaboration on bachelor projects, and hopefully getting a job at a company after graduation.

Conclusion: Quality and Relevance in Curriculum Design

The growing concern for employability after completing a qualification at a higher education institution requires new ways of working with quality and relevance in curriculum design. The perspective we have taken in this chapter is that relevance should be considered as an effect of the way we view the notion of quality during curriculum design.

Existing approaches to curriculum design hold different conceptions on the relationship between quality and relevance. We developed the metaphor of curriculum as a closed tube to illustrate how discipline-based approaches to curriculum design consider relevance through a portfolio of disciplines that are included in the curriculum. Outcomes-based models are described through the metaphor of a glass tube and design for relevance by translating the competences of skilled professionals into learning outcomes that need to be developed through a curriculum.

Apart from these models, this chapter suggests a metaphor for curriculum design that turns the relation between relevance and quality on its head. Whereas the discipline-based and outcomes-based approaches assure relevance through the careful selection of elements that are designed into the curriculum, the metaphor of curriculum as a perforated tube suggests an integrated approach to curriculum design and emphasises real-life interaction through professional networks within the curriculum.

The aim of these integrated real-life experiences is to let students practice how to become relevant based on quality academic content and methods within the curriculum.

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