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NEGOTIATING A PROBLEM-BASED CURRICULUM

– a reflective learning process of renewing the culture of teaching and learning

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Problem-Based Learning (PBL) has been mentioned as the most important educational innovation during the last decades expecially in the context of the professional education. It has also been seen as a stratetegy for renewing the educational and learning culture by integrating the competence demands of the education and of work life during the process of education. The research concerning in problem based learning has mainly been interested in the pedagogical processes and assessement of PBL curriculum. Althouhg the developing and implementation of PBL curriculum is effecting deeply on the educational and pedagogical culture, the themas of organizations own learning processes are minor in PBL literature. In this article we describe the process of developing a problem-based curriculum in the Unit of Early Childhood Education at the University of Tampere during 1999–2003. The basic principles of PBL were applied in the developing process. In our reflections we will focus on the learning at work processes when developing a multi subject curriculum and multi professional work culture. The aim of the article is to model the PBL curriculum process.

The changing interpretations of the curriculum

The curriculum in generally and the PBL curriculum specially has been understood and conceptualised in many different ways. A curriculum may be defined simply as a plan about what is taught and what should be learned. The modern curriculum is generally understood as the rational pre-plan for the goals and objectives of instruction and instructional content, as well as teaching methods and the organisation of teaching. The critics of such a rational curriculum idea have, however, pointed out that the complex and unpredictable nature of teaching situations renders any kind of preplanning – if not impossible – at least ethically questionable. Furthermore, clear-cut plans may also effectively restrict students' individual opportunities.

In post modern teaching and particularly in problem-based learning (PBL), the entire traditional curriculum and the hidden curriculum regulating it are expected to be able to meet the various demands presented by learner-centred perspectives and experiences. Therefore, the practical realisation of the curriculum has served as the object of particular interest. However, scholarly interest in the meta-curriculum – the thought processes, perspectives, reasoning, interests and differences in opinion underlying curricula – is increasing. The emphasis is shifting from the more technical development of a curriculum to understanding curriculum. In this sense, the concept of curriculum is clearly widening in scope. (Goodson 1989, 13–25; Hlebowitsh 1997, 507–511; Pinar et al. 1995, 3–11.)

According to Hannafin and Land (1997) the curriculum can be conceptualised as a learning environment based on five foundations: psychological, pedagogical, technological, cultural and pragmatic. The psychological foundation reflects underlying beliefs about how individuals acquire, organize and develop knowledge and competencies. Pedagogical aspects focus on the activities, methods and structures of a learning environment and technological capabilities suggest what is possible through advanced technology. On the organisational level, the cultural foundations of a learning environment reflect prevailing beliefs about education, teaching and learning, in addition to

promoting the values and roles of the organization. There are also various pragmatic foundations which bridge the gap between theory and reality. Understanding the PBL curriculum as a learning environment emphasizes the strategical and methodological views on the development of multi-subject knowledge, shared expertise and a multiprofessional work culture.

Who are the learners within the curriculum process?

Curriculum development – designing a learning environment – may be approached as a learning process where the workplace community and the assisting network of experts use interaction, knowledge-sharing and constant negotiation to develop the curriculum and, simultaneously, their own professional practice. Among the objects of learning at work are the following aspects: the colleagues', team's or expert network's shared interpretations about the expertise and competence presupposed by a given course or degree programme; negotiation on an appropriate curriculum for the programme; the concrete composing of the curriculum; visualisation of the beliefs concerning teaching and learning; and practical implementation of the curriculum as well as the development of the structures and activities at the workplace as presupposed by curriculum implementation, etc. Within this framework of processes, the various dimensions of the learning environment – psychological, pedagogical, cultural, technological and pragmatic – serve as the objects of constant, collaborative discussions and development activities.

In work life, a meaningful carrying-out of work assignments increasingly presupposes new forms of working and new work cultures. This also applies to the contexts of teaching and research. New kinds of work cultures are manifested in, for example, various combinations of teachers' and researchers' professional know-how, collaborative forms of working, and increase in shared responsibility and new forms of working with students. Instead of individual education, the development of teachers' and researchers' competence

requires collaborative learning as a community, where the study and development of local/contextual knowledge constitute the foundation for learning.

The diverse know-how of the various members of a learning community can, at its best, serve as a resource for collaborative learning. The development of workplace communities and organisations in interactive relationships – learning partnerships and the processes connected with them – have been conceptualised in various ways. Flechter (1996) characterises developmental interaction as interaction whose typical features include shared commitment and dependence. Interaction that promotes development entails a reciprocal system of giving and receiving as well as shared responsibility. Reciprocity is formed by the willingness of all parties to cross their own boundaries and share their competence.

Learning as a participatory process and defines the workplace community as the context of learning. According to Wenger (1998) three factors are especially central to learning. Firstly, a community has a shared, agreed-upon task or project for which the community takes responsibility. The members of the community commit themselves to realising the project. Secondly, the community commits to working together through reciprocal activities. The community is bound together by common procedures and a need to keep the community together. Thirdly, a workplace community possesses a shared set of tools which entails stories, discourses, styles, functions, artefacts and concepts.

Reflective development is based on a process of participation and a reflective attitude to the work; an organisation or unit is not given ready-made solutions, but it is assisted in studying, analysing and understanding its own problems. Keating, Robinson and Clemson (1996) describe the pursuit of change and the reflective development involved in organisational change in the following way:

- Outsiders are not the experts who know or can find solutions to organisational problems.
- The members of an organisation are the experts who know and can find solutions to organisational problems.

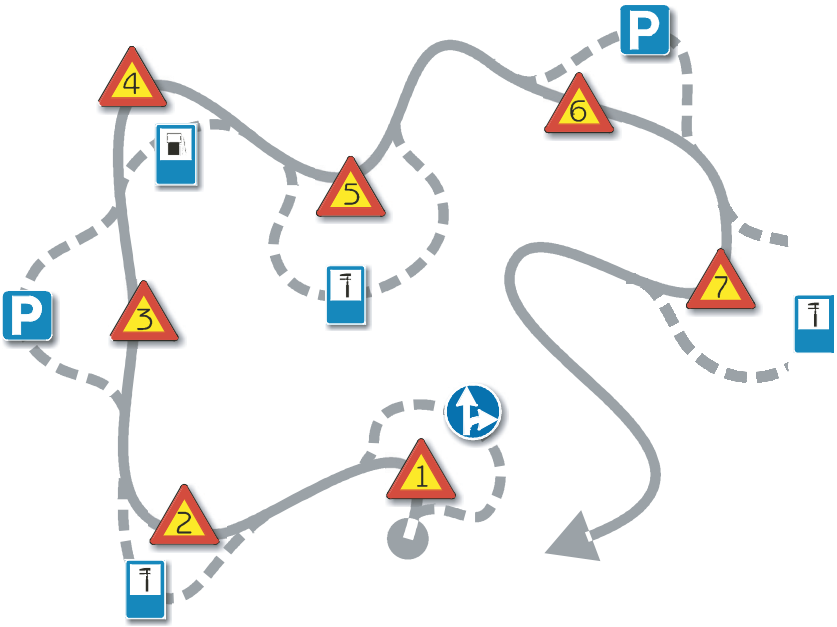
- An organisation encounters several learning obstacles, which may prevent it from effectively utilising its own know-how for developing its activities.
- A structured, repeated process of deep reflection can uncover previously existing, tacit knowledge, which the organisation needs in order to analyse its problems and develop its activities.

The idea of reflective development is partially based on the general theory on reflective and transformative adult learning, which serves as a platform for analysing job-embedded learning. (Mezirow 1991.)

Curriculum development is often connected to some kind of pursuit of change, which is initiated by either external or internal factors. The point of departure for developing the degree programme for kindergarten teachers at the University of Tampere was, on the one hand, the change the programme went through when it evolved from the secondary institute level to university education in 1995 and, on the other hand, the evaluations of education and teaching conducted in 1998–1999. One of the evaluations concentrated on university-level teacher education (Jussila & Saari 1999), and the other, on a general assessment of the teaching at the University of Tampere (Lehtinen et al. 2000). Both also entailed a wide self-evaluation process conducted by the Unit of Early Childhood Education, which then brought up development needs concerned with the curriculum of our programme and the quality of instruction. Our unit began to use the basic ideas of reflective development to examine how these needs could be met.

We have demonstrated the various phases of our curriculum development with the help of a roadmap (Figure 1). The map entails several natural obstacles (1–7) and pitstops (1–7).

The natural obstacles represent the questions or problems of curriculum development which we have encountered in our organisation. There are also pitstops in the vicinity of the obstacles where various, specifically directed reflective questions or interventions have been used to clarify certain issues concerning curriculum. Our roadmap is not by any means meant to be per-



Obstacles (1-7)	Pit stops (1-7)
1. Do we want to transform the curriculum?	1. Reflection on ongoing situation and resources. Negotiation the development contract.
2. What kind of expertise should education develop?	2. Discussion and negotiating about the expertise and competencies demanded.
3. What kind of curriculum model would suit our?	3. Exploring various kinds of curriculum and their assumptions concerning in knowledge and learning.
4. How is a curriculum (PBL) actually composed?	4. Negotiating the basic unit of curriculum and constructing of the learning environment.
5. What kind of new pedagogical competence we need?	5. Developing especially own competence as a tutor.
6. How do we implement the curriculum into the practice?	6. Developing multi-professional work culture.
7. How do we assess teaching and learning and improve its quality?	7. Developing multivoice assessment and quality assurance system.

FIGURE 1. Developing PBL curriculum and a new culture of teaching and learning Obstacles (1–7) and pitstops (1-7)

fect or complete; rather, it is an outline of a few possible obstacles and pitstops involved in the process of developing a PBL curriculum (see Nummenmaa & Virtanen 2002.)

Do we want to transform the curriculum?

The first question or natural obstacle in curriculum development is often whether the organisation/unit sees a need for transforming their curriculum and whether people are willing to undertake the task. In relatively static everyday work environments, there is a level of routine that often lays a solid foundation for professional practices. When the activities are directed according to a given predictable programme, certain thought and action schemes are also easily established for dealing with various situations. These practical routines – community practices – are often taken for granted, and the objective of organisational learning is to emphasise the stability of the prevailing situation. (Ruohotie 2000, 253; Wenger 1998.) As work environments, university departments are often quite typical examples of the kind of static organisation described above – an organisation built on established routines and work culture – community practices, the curriculum representing one form of such routines and culture.

At the first obstacle, the organisation usually faces a number of individual and institutional doubts and statements of disbelief: *'The old curriculum works just fine! But we have already applied this curriculum model! Does any of this make any sense?'* Such doubts are understandable and even necessary, for they form the point of departure for the process in which the organisation begins to examine their relationship with teaching, learning and curriculum. On the individual level the chance can be seen as a threat for the own teacher identity (Wenger 1998). Ideas about a good curriculum, good teaching and learning also involve various beliefs and thought paradigms. They form the landscape that structures the activities, and the content of this landscape is

part individual and part shared by different groups of employees. The staff members' various beliefs, assumptions and thought patterns form the first object of reflection (pitstop), as the workplace community begins to evaluate its work and to find possible paths to change. The examination of conceptions and beliefs can be promoted with various kinds of reflective interventions (see, e.g., Karila & Nummenmaa 2001; Wenger 1998).

Embarking on this journey presupposes commitment and an evaluation of resources. This is why, particularly with a long-term process of change, it is important to start with a broad discussion about the expectations the various parties have and the kinds of commitments they are prepared to make (Baker 1985; Cockman et al. 1999). The significance of commitment is multifaceted – it is the first phase in the organisation's pursuit of a common goal (Kozlowski, Gully, Nason & Smith 1999, 275), it orients the staff to the common goals and commits them to a shared project. At times, it may be appropriate to seal staff commitment with personal, written development agreements. Documented 'working agreements' concerning cooperation and collaboration serve as the guiding principles for the learning and group process of the organisation or team. When the common journey reaches a certain point of evaluation, the agreement drafted at the point of departure may be taken as one of the dimensions for evaluation.

What kind of expertise and competence should education develop?

The starting point for developing the content of a curriculum is a collaboratively formed interpretation about what kind of expertise and competence the degree programme is to develop. After examining the basic educational task from different points of view, the organisation begins to examine the following questions: What kind of competence does our programme produce? What general goals can be set for the programme?

Allan (1996) describes the general qualifications and competencies which university education should produce. He divides them into three groups: disciplinary competence, transferable and generic skills and academic competence. The transferable and generic skills as well as academic competence include competencies such as critical thought, reflection, knowledge management, and cooperation and communication skills. These skills and competencies come very close to the qualifications experts are required to have when they enter the labour market. The central questions are, therefore, how can university education be developed so that it promotes the development of competence relevant to work life, and how does it promote the competence a particular course is designed for? In this respect, the curriculum and its pedagogical implementation in particular play a central role.

In recent discussions about expertise, an increasing amount of attention has been paid to shared expertise. Experts are more and more rarely alone in analysing work situations, solving problems and developing their practices. Building multidisciplinary and shared expertise, which breaks the boundaries of different academic disciplines and educational orientations, is one of the most essential future challenges for the concept of expertise. This shift in the point of view in expert education is quite significant in terms of curriculum as well as the learning processes accommodated by a curriculum. After all, the object of any examination on such issues is not the individual structures of knowledge and subjective meaning, but participatory structures, shared cognition and organisational work principles. Therefore, good communication and interaction skills form one of the essential core competencies of expertise. If expertise is understood not only as an individual dimension but also as a shared phenomenon, the pedagogical processes outlined by curriculum must be equipped with ingredients which help us grow into collaboration and a sense of community.

Because the ideas on expertise have been subjected to changes in recent years, the educational communities have had the challenging task of constructing their own interpretations about expertise and competence. The challenge is increased by the fact that in nearly all educational units, people

have various kinds of views on the present nature of expertise and its future challenges. At times the reflections on these issues may also receive quite minimal attention. Educators are often representatives of a certain, specific area of content, which may be reflected as a situation in which the perspective of content competence alone is emphasised in working on the curriculum. The planning and implementation of education cannot, however, rest merely upon content competence; the composition and implementation of a curriculum also require expert work and expert education, in addition to reflection on learning processes and curricular solutions.

There are various kinds of official and unofficial interpretations about the work of kindergarten teachers, which have been presented at various times. These have also served as guidelines for curricular content. Structuring an optimally uniform interpretation about expertise is one of the most central tasks in structuring a curriculum. In this process, one easily runs into various inter-disciplinary boundaries, whose existence can be questioned by beginning to plan and work in a problem-based learning and knowledge environment (Karila & Nummenmaa 2002). Although we have conducted broad discussions about our unit's basic task, the interpretations still vary in ways reflected in the curriculum development work. Differing interpretations about expertise and competence in early childhood education thus form a natural obstacle where our organisation is obliged to make a pitstop over and over again.

What kind of curriculum would suit our education?

The points of departure, objectives and principles entailed in curricula play a part in what kind of learning environment is formed at a given time (Bernstein 1990; Goodson 1989). Various kinds of curricula implicitly entail differing assumptions about knowledge and learning (the psychological foundation of a learning environment) and usually lead to differing pedagogical solutions

(the pedagogical foundation of a learning environment). When it comes to the conceptions inherent in their theoretical backgrounds, curricula can be divided into three different epistemological categories or meta-orientations. This categorisation enables us to examine the characteristics of different types of curricula and to describe the change occurring when we shift from the tradition of one-way knowledge transmission towards emphasising the learner's own active role.

The transmission orientation reflects the mechanistic thinking of modern times. Learning is described as a transmission of knowledge, and the task of teaching is to influence the learner's actions in such a way that education produces certain kinds of reactions and behaviour. Instruction is thus organised by subject, and the teacher has centre stage in the teaching situation. Learning is not conceived as a personal experience, but knowledge is seen to be general and objective in nature.

The transaction orientation is based on the humanistic conception of man. Here, learning is seen as a construction of knowledge occurring in interaction and dialogue with the learner's environment. The individual is seen as a rational being capable of intellectual problem-solving. Teaching need not always abide by the content of a single subject, but can be multidisciplinary in character. When it comes to teaching, this orientation does not make a clear distinction between individual and social learning. The teacher's role is to encourage the development of students' problem-solving skills. Although the forms of instruction may be collaborative, the teacher is, however, responsible for selecting the contents and formulating the goals of learning. In the transaction orientation, learning is not seen as a transmission of knowledge, but knowledge is seen to have a subjective and experiential nature. Collaborative problem-solving is given central significance.

The transformation orientation emphasises a personal and social change and comes closest to the problem-based principle. This orientation involves three particular intentions. The first goal is to teach students skills which promote personal and social development. Secondly, there is an attempt to communicate a view of social change as a means of reaching a balance with

the environment, instead of trying to control the environment. The third intention is to create a transpersonal orientation, the objective of which is to reach a balanced interaction with one's environment as well as an ecological respect for the environment. (Poikela, S. 1998.)

In *a traditional course-based curriculum divided by subject,* studies leading to a degree are listed by subject as courses and classes, and the course handbook lists the contents of the classes (often as mere titles). The overall principle may be, for example, the intra-subject classification. The curriculum may also entail multiprofessional study entities. In a *module curriculum* (or block curriculum), courses are combined into compulsory or optional study modules, each module forming an independent area of competence to be completed in full. In a *path curriculum,* studies are not defined as independent modules or areas of competence, but as multidisciplinary or multisubject core entities of expertise which are carried throughout the degree programme (or part of it). The path scheme is especially utilised in problem-based instruction. The paths of a curriculum may extend throughout the entire degree programme. The project curriculum is one type of path curriculum. (Karjalainen 2003.)

When the idea of designing a learning environment from the point of view of learning processes is embedded into a curriculum, the curriculum itself will also entail the principles and guidelines for constructing the whole of the educational unit's learning environment. In addition to the goals and content of instruction, this type of curriculum also describes those learning processes which the instruction seeks to inspire. (Pinar et al. 1996; Ropo 2001, 8.)

The curriculum transformation process sought not only changes in the content but also in the design of the curriculum. Our unit began to orientate towards the philosophical and theoretical perspectives and pedagogical principles of problem-based learning in an experiential fashion. As the objects of our scenario work, we choose the core elements of PBL: What is problem-based learning? What kind a curriculum is problem-based curriculum? How is learning directed? Where do problems arise? As the scenario work

progressed, the conceptions about PBL as a curriculum development strategy began to become structured.

How is curriculum (PBL) actually composed?

As the basic unit of problem-based curriculum is the tutorial and the knowledge and learning environment surrounding it. After all, posing problems which activate and direct students' learning is a quite essential question and challenge in the problem-based learning process. How might we formulate problems in a way that they produce a meaningful learning process from the point of view of our learning goals and so that the students develop a professionally relevant competence when working on the problems? Formulating learning-motivating problems and scenarios to serve as the basis for learning is one of the corner stones of problem-based learning. According to Dolmans, Snellen-Balendong, Wolfhagen and van der Vleuten (1997), a good problem entails the following criteria:

- It combines students' experiences and knowledge
- It is complex enough but not overly loaded
- It arises from future work life or is otherwise authentic
- It encourages self-directed learning
- It brings up relevant basic concepts
- It involves the general learning goals.

Designing a problem-based curriculum for university education is quite feasible, provided that the goal of education is seen broadly as providing qualifications for work life. Relevant and authentic problems can be found even if they did not so clearly arise from the practices of actual occupations.

The problems concerning the adoption and application of problem-based learning essentially have to do with whether or not the method is applied broadly to the entire curriculum or more narrowly to, for example, certain classes. Even if the benefits of PBL were acknowledged, the organisational level may be reluctant to fully adopt the new scheme all at once. At the Unit of Early Childhood Education, we directed the transformation to the entire curriculum of the Bachelor of Education degree (120 credit units) for training kindergarten teachers, which entailed both basic and subject studies in education, vocational studies qualifying for work in early childhood and preschool education, as well as courses in both preschool and initial education. When the curriculum becomes the object of an overall reform, the question is not only of a new way of learning and teaching. It has to do with a change in the culture of learning and working – one requiring a re-evaluation and rearrangement of many procedures. (See Nummenmaa & Virtanen 2002.)

What kind of new pedagogical competence we need?

The pedagogical foundations of a learning environment have to do with the activities, methods and structures at play within the learning environment. Traditional, teacher-centred pedagogy stresses strategies which direct learning, such as the hierarchical structure of the content to be learned (e.g., various taxonomies), 'objective' and relevant questions, and direct feedback to students as well as the external assessment of learning. Student-centred pedagogy, for its part, pays attention to the practising of learning strategies and to the learner's own choices. Designing learning environments aims at the empowerment of students. (Hannafin & Land 1997.)

The basic philosophical assumption in PBL is the adoption of a student-centred approach to learning, as opposed to the teacher-centred approach. The student-centred nature enables the students to become aware of their own initial understanding, to be active parties in the learning process and to

construct their own understanding and knowledge within a social context. (Silen 2002.) The tutorial teacher has a significant role in the students' learning process. The tutor's central task is to promote the self-directed learning of the students. Skilfully conducted tutorials help students to become motivated, take responsibility for their own learning in addition to that of others, and commit themselves to a shared problem-solving process, thereby reaching personal learning outcomes, as well. Pedagogy based on the utilisation of group processes and the supporting of self-direction has to overcome the boundaries of traditional expert teacherhood and take responsibility for collaborative teaching. (Poikela, S.1998.)

The shift from a teacher-centred orientation to a student-centred approach awakens many kinds of feelings. When the function of the tutor is primarily that of a process leader (problem-solving, learning and group processes), the issue of the teacher's own competence easily triggers insecurity. (Poikela, S. 1998; 2003). Among teachers, a frequently voiced issue is the confusion about where a teacher's own expertise and adopted teacher identity fits into the equation. This is a great challenge for a personal learning and identity project: How to change "old good practices" and adopt a new orientation to teach.

How do we implement the curriculum into the practice?

The practical implementation of a curriculum requires a bringing together of multidisciplinary and multiprofessional expert competence. Multidisciplinary competence refers to the attempt to approach and develop competence with the help of knowledge and methods from various academic fields. Multiprofessionalism refers to employees of various educational backgrounds examining their work and competence, as well as sharing their competence with colleagues in order to create new kinds of competence. (Karila & Nummenmaa 2001.) Here, we are faced with one of the pitfalls of developing and

implementing a university curriculum; the freedom of research and teaching has been a central, guiding principle in academic work, which has influenced the formation of curricular contents as well as the practices of teaching. The development of individual and shared (multiprofessional) expertise and competence is an essential pedagogical challenge.

The discourse on expertise can, however, become a problem from the point of view of curriculum implementation, if we adhere to the traditional definitions of expertise, according to which an expert is a person skilled and knowledgeable in a particular field who can use his/her training and vast experience to give very detailed accounts about and answers to the specialised questions of that field. In the recent literature on expertise, it is often pointed out that traditional expertise is in a state of transformation. According to Launis (1997, 122–128), experts are no longer the ones whose training and strictly guarded territory of professional practice guarantee a dominant position. Expertise has evolved into sharing, interpreting and gathering information, and an expert is not always necessarily right. The implementation of a curriculum requires such evolved expertise. An expert is more and more frequently involved in various projects where diverse forms of expertise need to be accommodated for. Expertise should therefore entail flexible, anticipating and broad know-how. A large part of this is the ability to evaluate one's own competence and development, that is, self-reflection. Expertise combines self-direction and collaboration.

A unit or institution implementing a curriculum often forms a multiprofessional workplace community, whose entire staff participates in carrying out the common educational task. The successful completion of this task, utilisation of diverse competence and support for the individual's professional competence require a self-reflective, developmental workplace community as well as active on-the-job learning. Through the process of job-embedded learning, the development of the shared learning and working culture as well as the utilisation of the know-how of a genuinely multiprofessional community can be promoted with the implementation of the curriculum. The promotion of a collaboratively interpreted expertise in multiprofessional teams

may, among other issues, be selected as the curricular objective of developing multiprofessional competence.

The Unit of Early Childhood Education is a community where various kinds of competence are represented; staff with various educational backgrounds and experiences examine their work from various perspectives, in addition to sharing their own know-how. The active change from traditional, teacher-centred work to student-centred work presents us with a constant challenge to work on our own orientation. Furthermore, the implementation of a PBL curriculum also requires the participation of all members of our community in developing a multiprofessional work culture. The teachers of each course work as educational teams, and the core process of development is formed by the community's/team's examination of their own practices – the learning occurs within the educational teams. From the point of view of constant curriculum development, it is important that the teachers' individual competencies as well as team competence develop further and become visible in the overall framework of the curriculum (Wenger 1998).

How do we assess teaching and learning and improve its quality?

In the Finnish policy on university education, quality improvement has represented one of the significant projects of the last ten years. The quality and quality systems of teaching have been evaluated on many levels, and quality assessment has also employed several varying methods (see Liuhanen 1997; Hämäläinen & Moitus 1998; Lehtinen, Kess, Ståhle & Urponen 2000). On the curriculum level, the central issues concerning quality-assessment of teaching are:

- The design, content and organisation of the curriculum
- Teaching, learning and assessment
- Student progress and achievement

- The tutoring and guidance of students
- Learning resources (library, computers, etc.)
- Quality control and improvement.

The curriculum is realised in various interpretations and arrangements concerning the learning and knowledge environment as well as the assessment of learning. Assessment, then, directs the learning process – what is learned corresponds with what is assessed. In our PBL curriculum reformation, the basic underlying assumption about *learning can be defined in terms of changes in the student's knowledge, skills, understanding and attitudes, which are induced as a result of experience and reflection.* Such a conception of learning entails that the learner is actively committed to the learning and assessment process, in addition to regulating his/her own learning. This conception is based on an experiential and constructivist conception of learning and knowledge, according to which learning occurs when an active, self-directed learner solves conflicts between ideas and reflects on theoretical explanations, thus constructing personal knowledge (see, e.g. Boud & Fales 1983; Boud & Feletti 1999.) In our institution, the tutorial groups serve as the essential knowledge-construction sites.

The central goal of teaching is the empowerment of students. This is why *the assessment process itself should be an empowering experience.* When assessment is approached and defined in terms of empowerment, various perspectives on assessment arise. In developing the evaluation methods for learning, we have stated the following principles:

- The system of learning assessment is to cohere with the conception of knowledge and learning underlying the curriculum;
- The assessment of learning is to have several perspectives and voices;
- Various kinds of methods which apply to the learning goals of courses are used in the assessment (self-assessment, collaborative assessment, written products, learning measurements);

- The development and acquired competencies in several core areas of expertise are evaluated at various stages of the programme (the professional growth portfolio).

Our curriculum is subjected to constant evaluation, development and updates. Feedback from the student and teacher interest groups as well as their participation in planning structures and content represent an integral part of improving the quality of teaching.

Lessons learned when negotiating the curriculum

We have described the curriculum as a learning environment and curriculum development as learning at work process and reflective development. The emphasis has been shifted from the traditional examination of the student's learning process to the teachers' learning process. In conclusion, we can present a few central working principles and challenges for learning.

First and foremost, the point of departure is the assumption that high-quality teaching and learning develop within the *context* in which they are planned and implemented. Curriculum development, therefore, begins with an open examination of the prevailing situation and practices.

Secondly, the curriculum development process produces a system of learning based on collaboration (*learning as belonging)* – a learning partnership, where the various actors (teachers, students, administration) are all involved and committed. A learning partnership is, on the one hand, an internal process of the workplace community and, on the other, a reciprocal partnership with the outside parties (administration, developers of teaching). Discussion occurs in regular meetings and in work counselling sessions.

Thirdly, curriculum development rests on the principles of reflective development (Keating, Robinson & Clemson 1996). The process takes advantage of the teaching staff's personal experiences, through which interpre-

tations about the curriculum as a learning environment are collaboratively produced. According to Wenger (1998) it is a question *of learning as experience* with shared meaning making. The implementation of PBL curriculum means above all adopting new community practices – *learning by doing.*

The curriculum development process produces new and further develops the old tools for the improvement of teaching, learning and the work culture. The staff are challenged through discussions and various activities (observation, interviews, metaphors, writing, portfolios, concept maps, etc.) to examine and evaluate their everyday teaching and actions (attitudes, knowledge and skills) from new perspectives, as well as to develop new ways to learn and teach. Various developmental interventions are also used to uncover the tacit knowledge within the workplace community and create new ways of analysing one's own interpretations and actions. On the personal level the most challenging learning *is learning as identity* work - the adoption of a student-centred approach to learning as opposed to the teacher-centred approach earlier used.

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