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# THE CHANGING ROLE OF THE TEACHER

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## EDUCATION IN THE UNIVERSITY OF APPLIED SCIENCES

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# Contents

# Introduction

The requirements and content of the work teachers do in the university of applied sciences have changed over the years as a result of the evolution of the university-level education system. Additionally, the role of the teacher has changed during the period the university of applied sciences education system has been in existence. The work of teachers has become more demanding – but also more interesting. The new challenges have raised opposition, fear and failure, but also created new opportunities and a new way to organize work.

The articles in this book aim at examining the changes in the role of teachers. In addition to the usual changes in the curriculum, there is the continuous need to develop work, which gives new meaning to the role of the teacher. Amidst the daily challenges of resourcing and organizing instruction, the character of the changes often goes unnoticed. This book attempts to examine the changes in the role of the teacher over a longer period of time by gathering together different research and development projects carried out in universities of applied sciences.

This book is the outcome of a project called "The Development of the Role of the Teacher in the University of Applied Sciences" during the years 2004 – 2006, funded by the Ministry of Education. It is also published in a more in-depth version in the Finnish language, entitled *Opettajana ammattikorkeakoulussa* (The Teacher in the University of Applied Sciences) by Edita in 2006. Several articles from the Finnish language book have been collected together and modified for this book.

Compared to earlier work practices, teachers in universities of applied sciences take part in more collaboration not only among themselves, but also with students, the surrounding industry and commerce sector and with other educational- and research organizations. Teachers are in a central position in the effectiveness of universities of applied sciences to influence regional development. These were the main factors behind the project for the development of the role of the teacher in the university of applied sciences.

The teacher in the university of applied sciences currently faces many changes and challenges. In 2003, the reformed law for universities of applied sciences inaugurated a new agenda for universities of applied sci-

ences. In addition to educating people for different kinds of expertise, universities of applied sciences are to conduct research and development, based on the practical needs of business, for support and application in the employment sector and regional development. According to an assessment report by the OECD, one central challenge that universities of applied sciences face in particular is job-based instruction and research and development that reinforces the dual model of the university-level education system (i.e., so-called traditional research-oriented universities and applied learning-oriented universities of applied sciences). It was hoped that the university of applied sciences would be a central part of an innovation system within the sector of industry and commerce (Polytechnic Education in Finland, OECD 2003).

The universities of applied sciences (in Finnish abbreviated to AMK, however the term "polytechnic" is also frequently used), together with the universities, form the Finnish higher education system. Currently there are about 28 universities of applied sciences. When the first universities of applied sciences were made permanent in 1996, the general English term commonly used at the time was "polytechnic." Before the status of the polytechnic system was made permanent within the Finnish higher education system, during the experimental phase, there was some degree of variety in the terms schools used in their names. After the status of the university of applied sciences education system was made permanent in 2000 and as international cooperation continued to expand, the term "polytechnic" has largely fallen out of use. Furthermore, as the European trend in countries with a similar dual model (e.g., the Netherlands, Austria and Germany) was to use the English term "University of Applied Sciences," the majority of such schools in Finland also adopted this label (see Arene 2007). In this book, the term "University of Applied Sciences" (abbreviated to UAS, particularly when qualifying a noun) is used instead of "polytechnic."

On a last note, the Finnish term *työelämä* poses many challenges in translation. Literally, it is "work(ing) life." However, it can be also understood as meaning "the workplace," "the business community," "the employment sector," "economic life" and "industry and commerce (in general)" depending on the context, thus these terms are used varyingly throughout the book.

# 1
# Collaboration Can Achieve Wonders

*Pekka Auvinen*

The role, work and the necessary competencies of a teacher in the university of applied sciences education system have changed dramatically since the early 1990s. In addition to the skills traditionally expected, teachers nowadays are required to possess many other competencies. In fact, the demands involved in the operation of the university of applied sciences and the teacher's work are so numerous that it is not possible to fulfill them without effective collaboration, knowledge sharing and learning from one another.

In this article, I will discuss the requirements for teachers to accept change with regard to their competencies as well as the role of the teacher as a bridge between theory and practice. Lastly, I will consider the possibilities for competence development in the university of applied sciences education system, with a particular emphasis on organizational learning.

## The university of applied sciences is a changing work environment for teachers

> If I were a teacher, I would certainly say that autonomy is a thing of the past. By autonomy, I mean that formerly a teacher could come to school, give lessons behind a closed door and act as one's own king, omnipotent in his/her small world. When the lessons were over, the teacher shut the door to go home and prepare upcoming lessons, correct exams, and this was basically it. The reason was that this procedure was the basic duty of the teacher, and once completed, it sufficed. That was the time when schools were not involved in regional development and the like. Nowadays the situation is quite different. In an open work environment, a different set of conditions arise. Things change much more quickly, and the teacher is forced to reconsider his/her role and develop him-/herself if he/she wants to keep up with the times as a teacher.

The quickening pace of change, increasing competition, the demand for more efficient operations as well as growing complexity and uncertainty have forced organizations to display greater openness, flexibility and

adaptability. For this reason, the centrally administered and internally-focused education system that developed over the course of decades also became a target for revision in the beginning of the 1990s. In addition to the education policy and external pressures to change the system, the need to develop vocational education was characterized by new concepts about learning and knowledge as well as rapidly changing structures in the employment sector and related competencies. In order to meet the new challenges, it was decided that dramatic revisions would be made to the structure of education. The outcome was the establishment of universities of applied sciences (formerly referred to as polytechnics), and also institutions of vocational education were reorganized to become regional, multidisciplinary concerns (see Raivola et al. 2001).

As a result of the aforementioned changes, the UAS at the turn of the 21st century is clearly a different working environment for the teacher compared to institutions of vocational education. Vocational institutes, which formerly specialized in distinct fields, have merged into multidisciplinary universities of applied sciences, very often uniting education in an entire province. The structural changes at the system level have progressed rapidly to the national level. The internal structural revisions within universities of applied sciences as well as between them continues to this day, in particular the merging of different work cultures has posed formidable challenges. Even the starting points of practical education have had to be rethought, but in many units the qualitative revision of operations has taken a back seat to the changes at the system level (see Raivola et al. 2001). Often the attempt to implement reform has been to view it as a rational and straightforward change process, neglecting to sufficiently acknowledge the slowness of changing different work cultures and the emotional factors associated with change (see Fink & Stoll 1998, 316–317; Hargreaves 1998).

The area in which universities of applied sciences operate has expanded. In addition to providing education for fields requiring expertise knowledge, universities of applied sciences, in accordance with recent legislation, are to more clearly engage in research and development as well as supporting regional development (L 351/2003). Various development projects and project funding have become a significant part of operations in universities of applied sciences, but the integration of the main functions of the university of applied sciences has not occurred in the desired manner. The possibilities for universities of applied sciences to meet the challenges of regional development have been strengthened by transferring the decision making power from centralized administration to the universities of applied sciences. Concurrently, the responsi-

bility for planning and developing education and degree programs has been largely passed on to teachers and program managers. The role of centralized administration has gone from direct guidance of operations to monitoring and assessing the outcomes of operations, which as a result of the development of performance guidance systems, the autonomy of universities of applied sciences and teachers is beginning to be limited by the new form of guidance (see Meek et al 1996, 230; Neave & van Vught 1991, 253–254).

The basic character of operations in a university of applied sciences is more open than that of institutions of vocational education, and there is more emphasis on the importance of collaboration with the outside world in education. Increasingly, students are encouraged to leave the classroom to gain from the learning environments offered by the employment sector, while one of the main functions of the university of applied sciences is to develop practices in the employment sector and encourage entrepreneurship. In addition to collaboration at the regional and national level, international cooperation has also greatly expanded. We are witnessing the changeover from the so-called production facility model of secondary vocational education to the operational practices of a customer-oriented service organization (Valkonen 1993, 26–29).

The needs and expectations of students have also changed. The competition among institutions of higher education for new students has become intense because it has been possible for the majority of students to be admitted to either a university of applied sciences or a university. Nowadays students are more heterogeneous and they want to personalize their choice of studies, coupled with the fact that they give feedback more easily and are less committed to full-time study. Career choice and professional direction are not as strong as before, but on the other hand, they possess a preparedness that students often lacked in the past. The role of the student in relation to teachers is changing to that on par with an equal collaborative partner. This claim particularly holds true in adult education, whose share of operations in the university of applied sciences has grown enormously.

In the last decade, due to the structural reform in the universities of applied sciences and the changes in the operational environment, the teacher's workload has increased and the demands of work have grown as well as becoming more complex. The share of traditional teaching has become smaller, and the work of a teacher now includes a number of other tasks in addition to actual teaching (Rauhala 2004, 58). In practice, the differences between degree programs and also between teachers within a degree program have been rather large. The reform in universities of

applied sciences has provided the opportunity for real change, but due to the great differences between work cultures, this freedom has been exploited in contrastingly different ways (see Jaatinen 1999; Herranen 2003; Auvinen et al 2001). The responsibility for planning and developing education as well as the distribution of new tasks have not been carried out uniformly among teachers. For many teachers, work tasks and competency requirements have clearly changed and increased. Some teachers have continued to concentrate on teaching their subject areas without any noteworthy attempt to develop themselves or seek external collaboration. Many teachers are of the opinion that the basic interaction itself between teachers and students is not sufficiently valued.

Principal lecturers constitute a significant proportion of the teaching staff in universities of applied sciences. Generally speaking, for them the change in tasks and competency requirements have been the greatest. Principal lecturers have played an important role in building the university of applied sciences education system, and often unrealistically great expectations have been placed on them. The required academic qualifications of principal lecturers are greater than those of other teachers, and they have more often borne the responsibility of tutoring students with their theses. In the past few years, this responsibility has extended to the quickly growing area of research and development.

## Teachers are required to possess new kind of competences

> As the demands grow, teachers are indirectly forced to comply by changing their teaching so that they can maintain a high level of quality because competition is also on the rise, so they have to strive to face the challenges presented by change. There is no doubt that the work of a teacher is clearly more complex. The teacher is no longer only with the students. There are other interest groups that the teacher must collaborate with in different ways than before.

The teacher's job description has changed and expanded in many ways during the first years of operation in the university of applied sciences education system. In table 1, I have portrayed the change in the competency requirements for teaching in the vocational/university of applied sciences education system since the beginning of the 1990s until the year 2010.

More than a decade ago in the beginning of the 1990s, the teacher in a vocational school was above all an independent expert in his/her subject area, whose duty was to analyze, present, teach and assess that students both grasped the subject matter and commanded the necessary skills. The

education was based on curriculum that were devised on the national level in accordance with programmed teaching principles. In many fields the plans contained the content for courses, including descriptions of teaching and assessment methods with detailed lesson plans and teaching materials. The teacher's task was to execute the ready-made plans, and his/her work was largely centered around the school environment (see Tiilikkala 2004, 234–235; Laakkonen 2003, 276).

The job description of the teacher in the university of applied sciences at the beginning of the 21st century has clearly diversified and expanded in the last decade. Teachers have become multifaceted experts, whose tasks include much more than simply teaching. In most degree programs the teaching staff is divided into those people who actively develop new functions, and the group who concentrates on developing teaching in general and their own work (see Mäki 2004, 129). The work of many teachers still displays features from the beginning of the 1990s. However, one new aspect for all teachers is participation in the planning and development of curriculum. The opening up of this activity to teachers has led to increased contacts between universities of applied sciences operating in different fields, international collaboration and especially strengthened ties with the business community. In my understanding, for most teachers their job description feels rather incoherent. Particularly those teachers who are actively engaged in R&D and the business community feel that they have had to spread themselves thin across many fields and are expected to constantly acquire the skills and knowledge needed to face the new challenges. At the same time, an ever smaller group of teachers remains to carry out the responsibility of basic teaching.

| | VOCATIONAL TEACHER IN 1990 | UAS TEACHER IN 2002 | UAS TEACHER IN 2010 |
|---|---|---|---|
| Substance knowledge | ▪ Command of content and practice in one's own subject matter | ▪ General and specialized vocational competence<br>▪ The joining of theory and practice<br>▪ Vocational renewal<br>▪ Exploiting the employment sector as a learning environment | ▪ Individual and organizational vocational competence and self-renewal<br>▪ Creating new knowledge and active utilization<br>▪ Ability to apply theory into practice and to model practical phenomena |
| Methodical competence | ▪ Teacher-led pedagogy<br>▪ (Oral) communication skills<br>▪ Planning one's own work | ▪ Reframing pedagogy<br>▪ IT competence and skills<br>▪ Project work skills<br>▪ Planning and guidance skills<br>▪ Communication skills (writing)<br>▪ Internationalization | ▪ Learning process-based pedagogy<br>▪ Professional growth guidance<br>▪ R&D<br>▪ Online learning and content creation<br>▪ Communication skills (visual communication, listening skills, multiculturalism) |
| Personal attributes | ▪ An independent and conscientious civil servant<br>▪ Interpersonal communication skills within organization | ▪ Entrepreneurial spirit<br>▪ Self-assessment skills<br>▪ Ability to individualize contexts<br>▪ Interpersonal communication skills (internal and external relations) | ▪ Entrepreneurial spirit and result-oriented attitude<br>▪ Networker and team player<br>▪ Diversity-driven<br>▪ Meta-cognitive skills |
| Core competence of a teacher | An independent expert in his/her subject area, whose duty was to analyze, present, teach and assess that students both grasped the subject matter and commanded the necessary skills. | A multifaceted expert, whose work consists of many other tasks in addition to teaching. A networker with the business community, who plans and develops his/her own work and the organization's, or alternatively, is still often a traditional teacher | A member of an expertise community, learning facilitator, networker who executes projects in conjunction with the business community. He/she develops the employment sector and has an impact on the societal level. The teacher's work diversifies. |

Table 1. Changes in the competency requirements for a teacher in the university of applied sciences 1990–2010 (Auvinen 2004, 367–369).

In the year 2010, teachers in the universities of applied sciences will have more possibilities to build upon their job description. To my understanding, this decade can be considered the decade of pedagogical development, when the main tasks of the university of applied sciences are becoming integrated. The operational profile of the university of applied sciences is becoming clearer, and hopefully the same will apply to teachers' job descriptions. One important prerequisite for this kind of development is the transition from the current disjointed curriculum to one that has a common thread running through it, combining different subjects into one cohesive whole. Such a change in the curriculum would both reduce the workload for teachers and students as well as increase job satisfaction.

Success in the intensifying competition between education organizations requires that universities of applied sciences have stronger internal and external networks. A teacher can no longer be focused only on teaching his/her subject, but he/she should also give guidance in learning, create useful social networks, develop learning environments and implement working life-based study modules. To this end, the list of required competencies appears to be on the rise, but an essential difference with regard to the past is that, hopefully, this responsibility will be carried forward together with other teachers, students and representatives from the employment sector. The share of principal lecturers in the teaching staff will likely rise because, in relation to other teacher groups, they have a more important role in research and development, Master's degree level education and a greater impact in shaping society.

## Theory and practice in a harmonious balance?

The university of applied sciences as well as its teachers have a dual orientation between the scientific academic community (theory) and the realities of working life (practice) (Schön 1990, 305 – 310). In the case of universities of applied sciences, this is clearly evident from regulation (L351/2003) defining the function of the university of applied sciences, according to which education in the university of applied sciences is to be based on the demands of employment and its development, in addition to research and scientific objectives (Figure 1).

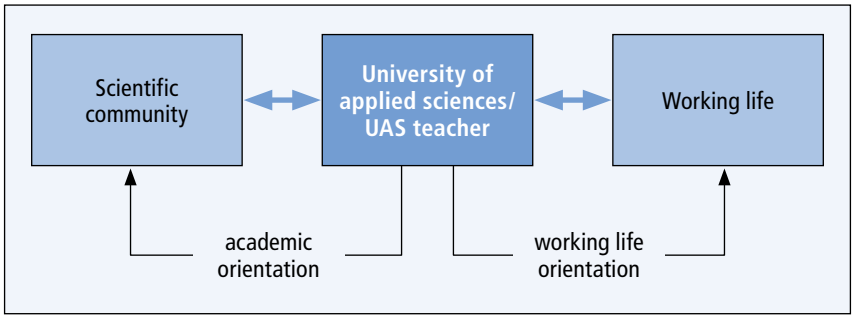


Figure 1. Dual orientation in the university of applied sciences (adapted from Schön 1990, 306).

Schön (1990, 309) is concerned that the scientific orientation in vocational education too strongly steers its activity, in which case artistry-related competence is in danger of disappearing (see also Vertanen 2002, 55). The academic orientation in relation to vocational competence was also

seen by Pratt (1997, 327) to be too prominent in universities of applied sciences in Great Britain, and he foresees a similar danger in Finland with the emphasis on academic competence. In practice, a teacher's orientation becomes apparent by his/her use of language. According to Kilpiäinen (2003, 110, 145), between science (and in many instances, the education organization) and practice, often there is lack of a common language that is understood by both parties. The challenge for the teacher in the university of applied sciences is to act as an interpreter between the scientific community and the practice-oriented employment sector. The opinion of the teachers and board representatives that I interviewed (Auvinen 2004, 225 – 232) concerning the relationship between theory and practice differed to some degree, but like Schön, most of them were concerned about the overemphasis placed on theoretical competence (see Herranen 2003, 181 – 182; Kilpiäinen 2003, 154).

Thus, a teacher in the university of applied sciences is expected to be able to act as a kind of interpreter between academia and working life (see Schön 1990, 306). The task is challenging, and often a teacher's orientation for one or the other can be recognized by his/her speech and actions. The formal competence requirements for teachers have become more stringent, particularly with regard to academic competence. The theoretical orientation appears to have become stronger, especially in those fields in which a large part of the teachers are required to supplement their formal competence with university-level studies.

Post graduate level studies include the danger of overemphasizing an academic orientation, in which case the teacher's understanding of practical working life demands is weakened or never even develops to the necessary level. Attaining a degree might take on more importance than the development of in-depth vocational competence (Pratt 1997, 327). Naturally, it is important to keep in mind that in order to develop employment nowadays, solid conceptual understanding is also requisite.

According to the Finnish proverb from the Savo region, "you can't learn how to swim from a book, you have to get into the water." The situation is similar in universities of applied sciences. In professional work requiring expertise, which the work of the UAS teacher can be assumed to be doing, theoretical knowledge, practical competence, the ability to apply theory in practical situations (transformation), as well as the ability to generalize and conceptualize practical phenomena (explicitizing), are needed (Vesterinen 2002, 29).

The teacher is required to possess stronger command of theory than earlier and personal knowledge of the practical aspects of working life in his/her vocational field. Lacking such a dual orientation, the teacher

will have much difficulty in creating the kinds of learning environments or situations in which in-depth competence is the result of combining knowledge of theory and practice (see Järvinen et al. 2002, 72). In the ideal scenario, guidance counselors from working life would also possess such a dual orientation so that they, for their part, could support students' conceptual understanding related to practical phenomena. Instead of traditional school learning and the related work placement period that easily becomes a separate entity, would it be possible to create learning environments and communities between working life and academia that would offer opportunities for learning, not only for students, but also for teachers and representatives from the employment sector (Barab & Duffy 2000; Kotila 2003, 18–20)?

## The importance of community (the organization) in professional growth for teachers

The evolution of the teacher's work continues; from individual to that of collegiality within one's own organization and towards different collaborative networks outside of the university of applied sciences (see Hargreaves 2003; Luukkainen 2004, 102–106, 297–298; Vertanen 2002, 217–219, 229). This evolution is the natural outcome of the quickening pace of societal change and the resulting demands for continuous upgrading of competence. Expertise is no longer the sole property of the individual, rather shared expertise, social interaction and collaborative learning are considered more and more important for the overall development of expertise (see Vesterinen 2002, 23–25; Lehtinen & Palonen 1997, 22–23).

In the university of applied sciences, teachers are actively encouraged to continue studies and develop themselves, but the personal development objectives of teachers are not often systematically linked to the strategic objectives of the whole university of applied sciences or to the objectives of the degree program to which the teacher belongs (Figure 2). In other words, self-development largely rests on the individual motivation and activity levels of the teachers themselves. Opportunities for professional growth have been numerous, but often lack of time is the biggest personal constraint.

During the past several years, similar to other learning organizations, universities of applied sciences have also started to emphasize the importance of competence. Many universities of applied sciences either have already conducted surveys, or are in the process of doing so, to de-

termine staff competencies. In the surveys, the main competence areas and information systems that are factors of organizational success have been predetermined so that the development of competence can be monitored. The establishment of a European higher education area has also led to this development, in which one of the main factors is the shift to the learning process-based planning of teaching, and the objectives set for education are based on concrete knowledge or competencies. Therefore, it is natural that competence objectives, competence surveys and personal competence development plans have become, like their counterparts between teacher and student interaction, a part of development discussions between teachers and their managers. Instead of administrative leadership, we are beginning to talk about pedagogical leadership in higher education. In this way, the focus of leadership shifts from the management of teaching to the management of knowledge and learning. However, it is important to note that the choice of a learning and competence perspective as the primary guiding principle of operations does not preclude the need for administrative leadership. Thus, it is not an "either-or," instead it is a "both-and" situation (Joensuu-Sarkio 2005; Auvinen et al. 2005).

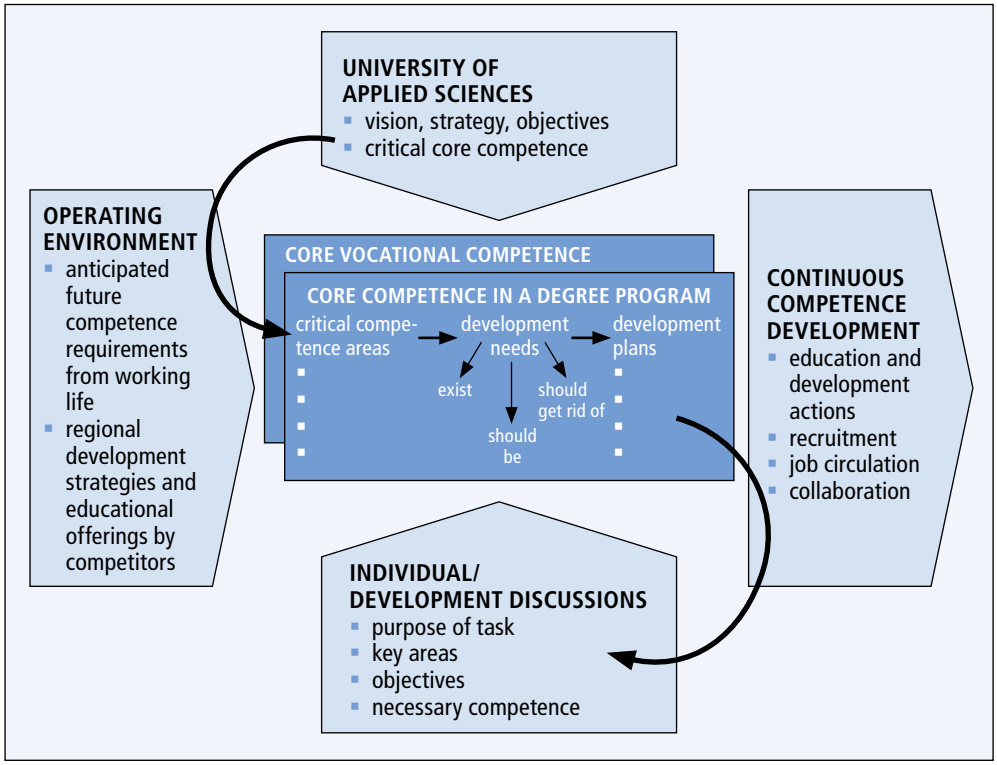


Figure 2. Mapping of core competence and knowledge management in the university of applied sciences (adapted from Sydänmaanlakka 2002, 123).

In practice, staff competence levels can be strengthened in many ways according to Sydänmaanlakka (2002). Education, recruitment, job circulation and acquisition of the necessary competence through various forms of internal and external collaboration are some of the possibilities open to universities of applied sciences. It is of upmost importance to create the functions and habits in daily work routines that assist the learning of new things while working. Learning and the creation of new knowledge is a communal activity, in which collaboration is important for both individual and organization learning. The central objective of a leader's work is to promote the learning and development of employees and the whole organization as well as to guide the course of learning and development. A leader can strengthen the learning and motivation to learn within the organization by offering his colleagues responsibility, challenges and independence. The development of a new level of competence is a task demanding persistence. It is important to support the strengthening of an organizational culture that promotes the development of desired skills, secures continuous learning and improves the organization's ability to address change (Joensuu-Sarkio 2005).

The learning organization, according to Otala (2000), is a community whose structure and culture make it possible that average and different people can together reach top-notch results. In other words, the objective of a learning organization is to facilitate both individual and organization learning. One challenge for the development of a learning organization is to create learning communities, in which the suitable competence needs for each community as well as support for the operations of each other merge into one. According to Salo and Kuittinen (1998, 220 – 221), the change from a traditional school organization to a learning organization can be portrayed as a meeting place where teachers' private relations face the public organization and the interaction arena between the two (Figure 3).

The teacher's activity in the private arena is based on pedagogy, and in vocational education, particularly on vocational expertise. The public arena is mainly the responsibility of management, whose tasks include the administration, organization and management of teaching. Successful operation in the public arena requires taking continuous and comprehensive account of teachers' activity (the private arena). In the interaction arena, the comprehensive coordination of the unit's activity takes place. Implementation of the operations model in a learning organization requires the expansion and opening up of the interaction arena as well as staff commitment to joint action and joint decisions.

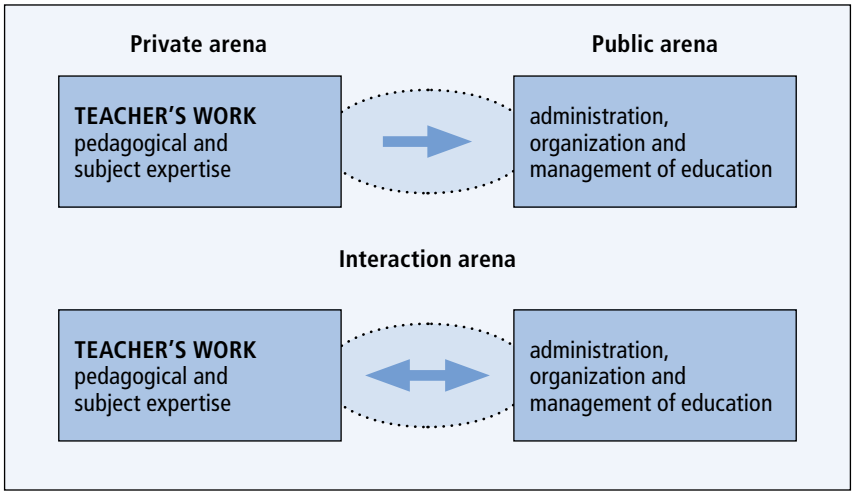


Figure 3. The change from an education organization to a learning organization (Salo & Kuittinen 1998, 220–221).

The vocational reform for teachers should be viewed as on-the-job learning and not only as traditional staff training. On-the-job learning is contextual, that is, it is tightly linked to work processes such that employees can learn in their job by questioning the current feasibility of practices, by experimenting and testing old methods as well as by acquiring the latest information to support development when necessary. In connection to on-the-job learning, according to Järvinen and Poikela (2001), competence is to be examined as a phenomenon that concerns the individual, the group and the whole organization, because they are all strongly linked to one another. In work constructed on the basis of the experiential learning model, individual, group and organization learning is to be examined side by side in the learning process description (table 2).

One of the most important tools for the teacher's professional development is reflective practice (see Calderhead & Shorrock 1997, 16; Carlgren 1999, 54; Collan 2002, 140). In a reflection event, we return to things, experiences and emotions that took place earlier. It also refers to the interaction between thinking and activity. On the other hand, reflective practice is turning inward to examine one's own thinking, and on the other hand, it is internal thinking that is made concrete through speech, writing or behavior (Levander 2003, 452–453).

Learning from experience does not happen automatically, instead it requires time to assess the experience (reflection), understanding and conceptualizing new information, as well as applying internalized knowledge in practice (Kolb 1984, 39–43; Sydänmaanlakka 2002, 35–36). At the same time, it also requires combining theory and practice, because without

a sufficient theoretical base, experiences cannot be conceptually grasped nor can new perspectives be raised for the assessment and development of practice (Järvinen & Poikela 2001, 71–73).

| ORGANIZATION LEARNING PROCESSES | INDIVIDUAL LEARNING | GROUP LEARNING | ORGANIZATION LEARNING |
|---|---|---|---|
| Individual/social processes | Concrete experience | Sharing experiences (shared expertise) | Forming intuition (e.g., initiative) |
| Evaluative/reflexive processes | Reflective observation | Joint reflection | Joint interpretation of intuition |
| Intellectual/cognitive processes | Abstract conceptualization | Organization of conceptual knowledge | Incorporating the interpreted knowledge into the database |
| Operational processes | Active experimentation | Learning by doing | Establishing the knowledge in practice |

Table 2. Process model of on-the-job learning (Järvinen & Poikela 2001, 286).

In the best case scenario, the teacher's professional development takes place in conjunction with one's own work tasks while applying theory, practice and experience. This requires the opening up of organizational operations and the building of new kinds of study and learning environments in collaboration with organizations in the employment sector. This way of operating is a good starting point for the assessment of one's own way of operating, to understand the realities of employment and the creation of new knowledge, with the assumption that the level of theoretical knowledge is sufficient.

The change in the teacher's job description and competence requirements has forced many teachers to question their former professional identity and its foundations. The identity of the individual or organization cannot be constructed from external guidelines or orders, instead one's own input and personal investment in change have an important role in the acquisition of reforms (Tiilikkala 2004; Kolehmainen 1997, 167–171; Rudduck 1988). Active reform and maintaining balance during the phases leading to the stabilization of reform is important so that all members involved can keep up with the pace of change (see Lewin 1976, 228–229; Fink & Stoll 1998, 301; Mullford 1998, 632–633).

The evolution of the teacher's work, from working on one's own to collegiality within the organization, and with others in different collaborative networks, continues. This evolution is the natural outcome of the quickening pace of societal change, which requires more effective acquisition and application of new knowledge as well as communal learning. As a result of the fast turnover rate of information, the importance

of information gathering skills, the ability to select relevant information and possessing the attitude of learning to learn will continue to grow. The teacher is changing into someone who builds and maintains various collaborative relationships. The ability to collaborate with others appears to be growing in importance for successful work performance (Auvinen 2004, 357).

## Universities of applied sciences are good vantage points

The work of the teacher in a university of applied sciences offers an interesting vantage point in order to get an insight into Finnish society as well as into the arena of international collaboration (see Rauhala 2004, 67). The teacher's job description has changed and it appears that this change will continue. The teacher is no longer a mere disseminator of information. Nowadays it is easy to gather information, but the selection and evaluation of it is increasingly challenging (Friman 2004; Launonen 2000; Puolimatka 2002). Although views on learning and the role of students in learning have indeed changed, teachers still play a crucial and important role in the guidance of learning, motivating students and relating the content of learning to external realities. There does not appear to be any indication that the requirements in the work teachers do will decrease, but hopefully teacher job satisfaction can be increased as well as reducing their workload by clarifying job descriptions and improving the conditions for collaboration.

One particular challenge in the teacher's work, as well as being a permanent feature, is the ability to have genuine dialogue with others and understanding. According to Buber (1985, xiv-xv; 1995, 58, 89), all that is genuine and essential in life is based on dialogue and existence. Dialogue involves interaction with students, teacher colleagues, representatives of the employment sector and other collaborative partners. By this, I do not mean to say that substance knowledge, command of methods and other personal attributes are worthless. However, without the genuine interpersonal relationships, trust and contacts that derive from dialogue, the teacher faces difficulty in benefitting from his/her other attributes to support students in their learning, strengthening their motivation to learn, and developing the organization, R&D or other work-related tasks. The aforementioned principles also serve well as the basis for leadership in the university of applied sciences.

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# 2
# Traditions in Education Shape the Role of the Teacher

*Jari Laukia*

In this article, I will examine the development of vocational teaching and vocational teacher education at the college- and upper secondary level in the fields of technology, business and healthcare. Behind the ways of operating and school subcultures, there are also certain practices that arose from the history of the field of education, whose origins are not always known. Therefore, I will shed some light on the traditions of the three largest education fields mentioned above. In addition to traditions in the education fields, I will also provide descriptions of teacher education in different areas. The birth of vocational teacher education cannot necessarily be discerned from the field of vocational education. I will investigate the kinds of qualifications that were required of teachers and what objectives were set for vocational education in colleges and upper secondary education. The aforementioned served as the basis for the orientations from which teachers transferred to universities of applied sciences. The area of investigation extends from the dawn of college level vocational education to future prospects in the university of applied sciences. In transferring over to the UAS education system, the qualification standards for teachers working in different education fields became more uniform. It appears that a UAS organizational culture, one which takes into consideration different fields of education, is evolving.

The history of higher education in Finland began when the Academy of Turku was founded in 1640. Thus, the institution of higher education had come ashore to Finland as well. The establishment of the Academy arose from the need to educate civil servants as well as the desire of king Gustav Adolf to develop institutions of upper secondary education (academic gymnasia) and universities in a kingdom that had grown into an empire. The Academy of Turku was established on the foundations of a local lyceum, complying to the traditions of the University of Uppsala. The majority of the professors in the new university were promoted teachers that had received their education in Uppsala. The university's tradi-

tions, festive ceremonies, instructional methods and academic self-esteem brought the Academy of Turku to the ranks of the European academic tradition (Klinge et al. 1987, 77–80).

The other part of higher education in Finland, universities of applied sciences, was established in the 1990s side by side with universities. After a test phase, universities of applied sciences were made a permanent fixture in Finnish education during the years 1996–2000. Universities of applied sciences did not come into being out of nowhere. They were built on the foundation of the vocational school and vocational college system. Ideas were also sought from abroad, especially Germany and the Netherlands, even though an appropriate model for the Finnish system was not to be found there either (Auvinen 2005, 18, 22; Lampinen 2002, 61–64; Nuorisoasteen koulutuskokeilut ja ammattikorkeakoulut 2001, 77–80).

In accordance with the law in 2003, universities of applied sciences were given the task to provide education for fields requiring expertise, to support the individual learner's professional growth as well as providing a link between education and employment, assist in regional development and conduct applied R&D projects. Additionally, universities of applied sciences offer and develop adult education in order to maintain and reinforce competencies needed in work by today's employees. In carrying out its functions, the university of applied sciences should actively engage with the business community and the employment sector as well as with other educational facilities (Ammattikorkeakoululaki 351/2003).

The majority of UAS teachers transferred from single discipline educational facilities to multidisciplinary universities of applied sciences, bringing along identities and orientations shaped by their respective fields. The organizational culture of the multidisciplinary university of applied sciences is composed of the cultures of different education fields (Auvinen 2005, 139). UAS teachers have been forced to cope with this change and to build a new organizational culture under strong societal pressure and with very different starting points. Other factors have been the general pressures that change brings in the work of teachers, the changing requirements in professional skills, different perspectives on learning, R&D and the challenges associated with different students.

## Engineers as teachers

In the field of technology, vocational education took place in the manner of the apprentice-journeyman until the middle of 1800s. The lack of work in the handcraft industry and the small size of cities and towns kept this form of education small in scope. At the end of the 1700s and beginning of the 1880s, the number of iron smelters slowly started to increase in Finland. Iron was produced in western Finland and various iron products were made from Swedish and Finnish iron ore. Skilled workers also came from Sweden to work in Finland's iron smelters. Sawmills sprang up in eastern Finland, particularly to serve the markets of St. Petersburg. More investment was put into the discovery metal ores in Finland (Tulkki 1996, 83 – 85). The trade guilds originating from medieval times were no longer able to educate the necessary workforce. In 1868, as a result of the law on the freedom to pursue one's livelihood, the trade guilds and apprenticeship system lost their importance. More options were available for people to pursue a living and construction was on the rise, especially construction of the transportation network and cities.

Predecessors to the vocational school, the so-called "Sunday schools" that started in 1842, supplemented the apprentice-journeyman system. The purpose of Sunday schools was to provide a general education to apprentices and journeymen. These schools taught reading, writing, arithmetic and religion. In 1885, the schools were changed to lower and upper craftsmen schools.

Schools for technical studies were established in 1849 in Helsinki, Turku and Vaasa. In addition to studying theoretical subjects, students also did chemistry experiments and worked in the metal workshop. Teachers often lacked the education to teach vocational subjects and even the work experience. The majority of teachers had received their diploma from the university. As a result, the learning performance was poor and the graduation rate from technical schools was low (Tulkki 1996, 110 – 114). Consequently, the curriculum of the Helsinki Technical School underwent revision in the 1850s. Emphasis was added on theoretical studies in the curriculum and more permanent teachers were employed. In general, the teachers that taught the vocational subjects were engineers who had received their education abroad. Foreign teachers were also recruited, for example, Rudolf Kolster was hired to teach mechanical engineering and mechanical drawing and Ernst Edvard Qvist for applied chemistry. Both men had studied in Hannover (Tulkki 1996, 138 – 139).

During the 1860s, along the lines of the German model, the Helsinki Technical School evolved into a polytechnic school, where studies

lasted 4–6 years depending on the field. The Helsinki Technical School became the Technical University in 1908. In 1885, the technical schools in other parts of the country became industrial schools, which became technical schools in the 1930s. The purpose of industrial schools was to provide the skills and knowledge that industrial managers and experts needed in different branches of industry as well as for machine operators (Tulkki 1996, 139–140; Kivirauma 1990, 74–76; Rousi 1986, 29–30). The teachers of industrial schools were expected to have received a diploma in engineering from a polytechnic school as well as at least one year of practical experience in a field corresponding to studies. In addition to Germany, Russia served as an example for the development of teaching practices. The predecessor of the Ministry of Commerce and Industry, the Board of Industry, made the decisions concerning teacher qualifications (Rousi 1986, 15, 30). According to Hintsanen, especially the influences from Germany were evident in the instructional practices in the field of technology up until the end of the 1960s, at which time vocational education came completely under the administration of the Ministry of Education (Hintsanen 2005, 37).

In the beginning of the 1900s, the instruction of technology did not correspond with the demands of work and business. In 1912, the Tampere Technical College (Tamperen teknillinen opisto) was founded as a result of the Czar's directive. In 1916, the Swedish language Helsinki Technical School (Tekniska Läroverket i Helsingfors) was established. The school provided instruction in both Swedish and Finnish. The teachers' level of education was high; they were required to have a diploma from a technical institute of higher education, and teachers in mathematics were required to have a Bachelor's degree in the humanities as well as one in engineering.

In conjunction with the development of education, teacher qualifications were also discussed. In 1915, Max Sergilius, the rector at the Technical School, proposed that pedagogical studies be organized at the University of Helsinki for students intending to be teachers at the industrial school. In addition, teachers were expected to complete one semester of teacher training. The idea came to him while studying in Germany (Rousi 1986, 117). Overall, Max Sergilius was active in the development of teaching in the field of technology, and he was also involved in cooperation in Scandinavia. The first conference on technical education was held in Kristiana, Denmark in August of 1920. Teachers from the Technical School also took part in international activities and, maintaining contacts with Germany and France among others. The teachers wrote textbooks and published education-related publications (Tekniska Läroverket i Helsing-

fors, Årsberättelse 1920 – 1921). New ideas were sought from abroad, but immediately following Finnish independence in 1917, cooperation was also active domestically. A general gathering for teachers in technical schools (vocational schools and colleges) was held in Helsinki in 1920.

Despite developments in education and business, teacher qualifications remained more or less the same. The starting point for teacher qualification in technical fields was technical competence, which was of greater importance than teaching ability. The proposed pedagogical studies were not considered necessary because schools were small, few teachers were needed and students were already already quite old (Rousi 1986, 117).

The Ministry of Commerce and Industry accepted the curricula and operating plans of the schools. In 1927, the Ministry set up a committee to draw up a plan to organize technical instruction. The administration's hopes to revise technical instruction factored into the decision. The committee leader, professor Emil J. Simola, presented his views concerning teacher qualifications:

> Teaching should not be disconnected from practice. It should be vibrant and applicable to technical living. The best teacher is one who, in addition to possessing a good technical education, is also rich in experience. Furthermore, through practical application, he also remains skilled in his profession. As a result of long-term and many hours of teaching, the teacher easily becomes a schoolmaster, whose teaching effectiveness suffers as well as the whole school. If there is no concern for the competencies and skills of teachers, any other development of teaching will not bear fruit (Rousi 1986, 64).

The quality of instruction and teacher qualifications were topics of discussion from time to time. The connection of teaching to the employment sector meant that the teacher had up-to-date information and skills about the working environment. Teaching also included familiarity with the working conditions, but the main emphasis in studies was on the kind of instruction given in a school environment under the teacher's guidance. The student in a technical school was expected to have work experience in his field already when applying, which obviously also affected the content of instruction.

In 1940, in accordance with a directive already in effect, the purpose of the technical school was to prepare technicians for jobs as designers, operators or other similar occupations, by giving the students a sufficient theoretical education in addition to the practical education and training required in technical and technical-economic fields (Asetus 766/1940). The directive listed the state technical schools in Helsinki, Vaasa, Tampere, Turku, Kuopio and Oulu. The right to use the title of engineer was under dispute up until WWII. The title of engineer was solely reserved for

persons having graduated from the technical university. In the directive of 1943, it was stated that the technician's diploma was completed in a technical school and the engineering degree was from a technical college (Tulkki 1996, 251 – 252). Students who had completed their degree earlier had the possibility to receive the title of engineer retroactively.

A technical institution might have been both a technical college as well as technical school. There were tenured positions for principal lecturers in the college, and in the school there were tenured lecturers. The qualification to become a principal lecturer in a technical college was a technical university diploma and three years of work experience in the field. Mathematics and physics teachers were required to have a Bachelor's degree in the humanities or a Licentiate diploma or a university diploma in applied technology. A tenured lecturer's position required a university diploma in applied technology, and in mathematics and physics, an applied university degree in the subject of one's main teaching subject was also required. Teachers of vocational subjects were required to have three years of work experience, and if only two years of teaching experience, then one and a half years of practical work experience were required (Asetus 766/1940). Therefore, teaching experience might have replaced part of the required work experience.

A regulation passed in 1940 defined that teachers applying for a tenured position could be required to give a demonstration of their teaching. As tenured positions were filled, the teaching demonstration was generally required. The teacher selection process was complex. An open tenured position for a principal lecturer or lecturer was announced by the Ministry of Commerce and Trade. According to the Ministry's guidelines, the Board of Directors had to pay attention to the applicant's formal qualifications (theoretical qualification, diplomas, practical experience). In ranking applicants, in addition to the diploma and work experience, the Board of Directors had to consider the impact of the teaching demonstration. In the evaluation of the teaching demonstration, attention was paid to how the applicant analyzed the subject, the content of the presentation as well as oral skills. Furthermore, the use of the blackboard and other instructional materials, as well as time management, was assessed. According to the guidelines, each applicant was to give a 45-minute demonstration on a topic defined by the teaching staff. The subject of the teaching demonstration was to be agreed on in advance with the department of vocational pedagogy in the Ministry of Commerce and Trade. The purpose of the teaching demonstration was, above all, for the applicant to display teaching skills. The evaluation focused on whether the topic was covered sufficiently during the lesson, and whether "the amount of new facts were

in a good balance with the class's ability to absorb the information, etc." (Opettajan virkojen hakijoista annettavat lausunnot, KTM 1959).

Although teachers were not required to having a pedagogical education, in the selection process attention was paid to those applicants who had teaching experience. Without prior teaching experience, the applicant probably faced difficulty in assessing the class's "ability to absorb information." The teaching staff made a proposal to the Board of Directors of their applicant choices, the Board of Directors made their choice to the Ministry of Commerce and Industry, which appointed a person for the teaching position. The principal might also hire the part-time teacher and assistant. According to Rousi (1986), especially after WWII, when employment was good and teaching in the technical field was experiencing rapid growth, there was a shortage of qualified teachers.

In 1963, the Ministry of Commerce and Industry requested Pekka Ahonen's committee to plan teacher education. The committee presented the establishment of a technical teacher education university in Helsinki. The proposal did not lead to any permanent results. In 1962, the pedagogical summer course organized in Hämeenlinna for teachers starting in technical schools later became the responsibility of the Tampere Technical School in 1964. The courses were free choice. According to Rousi, the courses produced results and many students became enthusiastic about the idea to complete pedagogical studies in the university (Rousi 1986, 96–97, 118). However, a compulsory pedagogical education was feared to hamper interest to become a teacher in technical fields, which were already facing deficits. Pedagogical education should under no circumstances be too broad so as to discourage potential "teacher material" (Rousi 1986, 117).

Until 1960, vocational education was administratively divided among seven different ministries. The framework for education in the field of technology had been commerce and industry policy. Developmental needs and structural solutions were also derived from this policy. In 1969, vocational education transferred to a division of the Ministry of Education, the Board of Vocational Education. As the education was transferred to the Ministry of Education toward the end of the 1960s, general socio-political and educational policy objectives also began to affect education in the technical fields (Hintsanen 2005, 38; Klemelä 1999, 290, 294–295).

In conjunction with secondary school reform, a special teacher education department was established at the Tampere Technical School. As of 1986, uniform curriculum standards were taken into effect in teacher education in all teaching fields. Teacher qualification included the requisite diploma, work experience and 40 credit units of pedagogical education.

In the technical field, the education comprised 20 credit units of studies (Tiilikkala 2004, 119). Hence, Max Sergilius's proposal for pedagogical education for teachers in technical schools had been realized at last.

The amount of education in the technical fields grew rapidly during the years 1985 – 2005. After the termination of education for technicians, and as a result of the UAS education system, the size of engineering education has grown significantly. In 1985, approximately 2,500 students were admitted into engineering schools. In 2005, the figure was 10,000.

## The business teacher

Finland's first business school was founded in Turku in 1839. Several years later, the second business school was established in Vaasa. The school in Vaasa was transferred to Pietarsaari, but it was closed in the 1860s. The next business school started operations in Oulu after the closure of a trade guild institution in 1864. At the end of the 1800s, business schools were established in the major cities of Finland, such as Kuopio, Tampere and Viipuri. Business colleges (i.e., two-year educational facilities) were founded in Helsinki, Raahe, Pori and Turku (Kivirauma 1990, 77 – 78; Santonen 1998, 12 – 13). The imperial decree of 1904 unilaterally defined that "the purpose of business schools is to provide the knowledge and skills that are necessary for businessmen" (Armollinen asetus kauppaoppilaitoksista Suomessa 28.1.1904, SA 1904/I). Educational facilities were divided into business schools and business colleges. A student was eligible to study in a business college, if he/she had completed five levels in the lyceum or had graduated from a business school. Business schools were based on the elementary school system, the duration of which was two years.

Teachers were required "the same levels of competence as for teachers in State elementary and girls' schools as well as competence in the subjects that are taught in business schools, including the skills and ability to manage the teaching of these subjects." (Armollinen asetus kauppaoppilaitoksista Suomessa 28.1.1904, SA 1904/I; Jauri 1948, 21.) Teachers often possessed a very high level of education. For example, during the early years of the Finnish Business College (Suomen Liikemiesten Kauppaopisto or SLK), there were several teachers among the staff who had doctorate degrees or were completing their dissertations. Of the teachers at SLK, the following persons are worthy of mention: J.K. Paasikivi (Licentiate in Law), Leo Harmaja and Iivari Leiviskä (Doctors of Philosophy) (Santonen 1997, 24 – 25). Generally, teachers had a university Bachelor's degree. In 1904, teacher training for business teachers was organized in

conjunction with the Finnish Business College. The teacher training involved a minimum of 50 hours of teaching observation as well as giving practice lessons that were observed by an assessment committee (Tiilikka 2004, 162; Santonen 1998, 34).

Higher education business studies began in Helsinki in 1909, first taught in Swedish, then in Finnish in 1911. In the university-level Helsinki School of Economics (Helsingin Kauppakorkeakoulu), it was possible to complete a business teacher's degree that included teacher training, giving practice lessons and a peer-assessed teaching demonstration (Tiilikkala 2004, 162).

The education model for business teachers was taken from the general education practices. These practices were inherited from the imperial decree (24/1873) for school teachers, including the preparation and teaching demonstrations. The decree defined the teaching demonstration, which was basis for giving a teaching certificate stating the "character and suitability of the person for teaching." The oldest part of the teacher qualification system dates back from the school system of 1724. Therein, it was decreed that persons selected for a permanent teaching position would have to demonstrate their teaching aptitude to a cathedral chapter (Miettinen 1993, 33). The purpose of the teaching demonstration was to ensure that the applicant had command of his/her subjects, and additionally, that he/she was god-fearing and possessed a decent character for the instruction of minors. The applicant was also required to have pedagogical skills and ability (Miettinen 1993, 31 – 33).

In addition to teaching practice, the teaching staff at the Finnish Business College wanted to influence the development of business teaching in Finland on a greater scale. In 1908, the teaching staff organized a meeting whose aim was to develop business teaching on the national level. During the first decades of the 1900s, a great deal of attention was paid to the development of vocational school education. Ideas were sought from abroad and joint perspectives were offered on the development of teaching.

In 1918 after the Finnish Civil War, for a long time there had been little need for educating business teachers. The decrees of 1939 and 1942 more clearly specified the teaching qualifications for business teachers. In addition to a degree from an institute of higher education, the person intending to become a teacher was expected to complete university-level studies in pedagogy and didactics, two semesters of teaching practice in a business school as well as practical teaching exams (Tiilikkala 2004, 162). In contrast to many other fields, teachers were not required to have practical work experience.

The development of business teacher education had been under discussion since the 1920s. Up until the time after WWII, the majority of teachers had completed their teacher training in a lyceum.

In 1950, the Ministry of Commerce and Industry defined the Finnish Business College as a teacher training school for business teachers. The teaching practice for business teachers was organized in conjunction with the business college. Six principal lecturer positions were established in the school for teacher education. The positions of the principal lecturers were divided by subject: commerce, business law, bookkeeping, German language, etc. (Tiilikkala 2004, 163). At the same time, business teacher education was increased. However, at that time there was no actual growth in the demand to increase education. In 1948, there were 68 permanent full-time business teachers in Finland (Miettinen 1993, 31). The increase in education and need for teachers in the 1960s was foretelling of the general augmentation of education.

The business teacher's studies included teaching practice in addition to university-level studies in pedagogy. The teaching practice comprised a minimum of 200 hours of teaching observation during a period of one or two semesters, giving demonstration lessons as well as participation in assessment meetings and seminar exercises organized by the teaching staff. Furthermore, teachers completed teaching exams (Miettinen 1993, 31; Santonen 1998, 56).

Business teacher education was executed according to the same model up until the 1980s. At times, the number of teaching observation hours was reduced and the number of joint seminars was increased. The teacher observations and rote learning inherited from the teacher training school system retained their central status in business teacher education (Miettinen 1993, 47; Tiilikkala 2004, 164; Santonen 1998, 76–77). According to Miettinen, the traits of the teacher training school-based business teacher education were apparent from the teacher-centered and lesson-oriented emphasis on learning. Rote learning was the prevalent learning method.

The Board of Vocational Education set up a committee in 1979 to prepare the joint framework for teacher education in Finland. Teacher education for each field had evolved according to its own requirements and traditions, thus each one was quite different. Additionally, the reform plans for vocational education were instituted. The purpose of the committee was to make teacher education uniform. Therefore, the committee was given the task of creating the joint framework for vocational teacher education.

The committee led by the principal at Hämeenlinna Teachers' College, Markus Sauri, stated in their report that the duties of the teacher are subject to the processes of change. Therefore, teacher education should also coach teachers to develop and respond to the changing demands of employment conditions. The committee proposed 40 credit units of pedagogical studies (one unit = 40 hours of work). The studies would include 10 credit units of general pedagogical studies, 14 credit units of vocational pedagogical studies, 12 credit units of teaching practice as well as 4 credit units of seminar work (Miettinen 1993, 48; Tiilikkala 2004, 165).

In 1985, the Board of Vocational Education set guidelines, adapted from the committee, for the organization of teacher education. The amount of teaching observation and teaching practice decreased in business teacher education. The education included 14 credit units of vocational pedagogical studies, which were carried out by the teacher education unit (Miettinen 1993, 49). Organizing vocational pedagogical studies presented a challenge to the teacher education unit, which led to a broader teacher education development project in the Finnish Business College. In 1986, a teacher education department was established in the college (Santonen 1998, 76–779).

The Finnish Business College realized that the level of education and teaching no longer corresponded to the competence needs required in business, not to mention that schools would be actively involved in the development of business. Students' motivation for study was also waning. There had not been many changes in the teaching methods, learning environments or learning approaches for decades. During the years 1986–1989, business teacher education was developed by a special project. With the aid of teacher education, the purpose was to reduce the gap between vocational education and employment. Additionally, there was the desire to change from passive acquisition of knowledge in learning to an active investigation of issues, knowledge construction and problem solving (Miettinen & Kinnunen 1989, 4–5). Changes in the curriculum and development of the content and methods of instruction led to the start of a new era in business teacher education.

## A dual calling – Nursing teachers

In Kaiserwerth, Germany, the first Lutheran deaconesses' institution was founded in 1836. It was a model for the teaching of healthcare, also in Finland. In Finland, the need for the development of healthcare became strongly apparent at the end of the 1800s during the years of famine. The forerunner to the Helsinki Nursing College (Helsingin sairaanhoitoopisto), the Surgery Clinic of Helsinki General Hospital, was established in 1889.

Head nurses and department nurses were responsible for teaching in the healthcare field. No actual teacher education existed in this field. Many teachers got their education abroad, especially from the United States and England. One noteworthy figure who had a great impact on healthcare in Finland was the head nurse at Surgical Hospital, Sophie Mannerheim, who brought back heaalthcare methods from England.

Since 1924, the Finnish Nursing Association organized continuing studies courses in pedagogy that lasted six months for nursing teachers. The Mannerheim League for Child Welfare (Mannerheim Lastensuojeluliitto) also organized similar courses later. According to Lämsä, later education for nursing teachers was largely influenced by international trends and pedagogical courses (Iivonen 1989, 142; Lämsä 2005).

It was obvious that nursing education was in need of a clearer set of guidelines. In 1929, the responsibility of organizing nursing education was transferred to the State (Erjanti & Willman 1988, 13 – 14). The Helsinki Nursing College's principal, the vice principal and head nurses also functioned as nursing teachers. In addition to these people, teachers employed by the school's board might have also given nursing instruction. There were no actual national guidelines for nursing teacher qualification. In the school regulations there were some guidelines for qualification. The National Board of Health ratified the regulations (asetus sairaanhoitajattarien koulutuksesta 424/1929 SA). A person between the age of 19 – 30, with an upper elementary school diploma and of good health was eligible to apply for nursing studies. In order to become a head nurse, the qualifications included a nursing education, a minimum of one year of work experience in the field as well as excellent work references (Asetus valtionsairaanhoitolaitosten sairaanhoitohenkilökunnasta n:o 425/1929).

The responsibility of organizing courses in pedagogy was transferred to the National Board of Health in 1931. At the same time, the duration of the courses was reduced to three months. The subjects taught were psychology, pedagogy, didactics and hospital administration. The instruction covered the principles, methods and practical organization of

healthcare. During the pedagogy course, students had two, and later three practice lessons. After the practice lessons, an assessment discussion was held. Students also followed instruction (24 hrs.) in the Helsinki Nursing School (Iivonen 1989, 143; Tiilikkala 2004, 60; Tuomaala, Leino-Kilpi & Toiskallio 1986, 10).

During WWII, pedagogical courses were terminated. They were organized again in 1947 in conjunction with the recently established Nursing College for Continuing Studies (Sairaanhoitajien jatko-opisto). The education was also specialized for public health nurses. The education included public healthcare, social policy and ethics. Speech technique was also taught. The education included a new form of instruction: discussion sessions, the predecessor to seminar presentations. The education lasted two semesters. Eligibility for the education included a nursing diploma and work and teaching experience in healthcare. Students also completed pedagogical studies at the university (Iivonen 1989, 146; Lämsä 2005, 69 – 70).

The Nursing College for Continuing Studies and the State Healthcare College (Valtion Terveydenhoito-opisto) merged in 1951. The purpose of the nursing education was to "prepare people for tasks in nursing schools, mainly concerning the different degrees of basic nursing education. The objective is that students will develop judgment skills and become individuals capable of solving problems and carrying out creative planning." According to Iivonen, the purpose was to develop the education to the university level, however still emphasizing professional competence and the needs of the workplace (Iivonen 1989, 147). In the spring of 1955, the Helsinki School of Healthcare (Helsingin sairaanhoito-oppilaitos) made a new two-year curriculum for the teacher education program including pedagogical studies. The teaching curriculum included a two-month paid teacher trainee period. The studies also included seminars in which the work practice and experiences were analyzed as well as preparing for future activities (Iivonen 1989, 148; Tuomaala, Leino-Kilpi & Toiskallio 1986, 11). Teacher education began in the Turku Nursing College (Turun Sairaanhoito-opisto) in 1965. The curriculum emphasized pedagogical studies (Tuomaala, Leino-Kilpi & Toiskallio 1986, 11).

When vocational education came under the authority of the Ministry of Education at the end of the 1960s, teacher education for nurses was also transferred. According to a decree in 1969, teacher education was allowed to people in professions other than nurses such as X-ray technicians, laboratory technicians, physiotherapists and occupational therapists. The professional title that remained in use was nursing teacher. Teacher students were expected to have a lyceum diploma, a degree from

a nursing college as well as a degree from a specialized field. In addition, teacher students were required to have two years of work experience in a field corresponding to the basic degree. Studies lasted for 1 ½ years. The subjects included nursing education and didactics, healthcare policy and nursing studies. Furthermore, the studies included teacher training and teaching observation of a minimum of 200 hours (Iivonen 1989, 151; OPM:n päätös sairaanhoidon opettajan tutkinnosta 226/1969). For the first time, in the decree it was clearly stated that nursing teachers were to receive teacher education. According to the decree, teachers were expected to give 24 hours of instruction per week on the average, to assist the principal in implementing entrance examinations, to prepare certificates and schedules, and to carry out other activities relating to the running of the school as defined by the principal (Asetus sairaanhoidon harjoittajien ja vastaavanlaisen henkilöstön kouluttamisesta, 418/1968, SA).

The teacher education was continually developed with the aid of teacher and student feedback and assessment. This was a highly developed and modern approach to teacher education. According to Lämsä, teacher students actively took part in seminars. Foreign guest lecturers also visited schools. Teachers became familiar with pedagogical research literature in English. Healthcare models were derived from pedagogical models. "Teachers were wholeheartedly devoted to new theories, from which came the thirst for theoretical healthcare knowledge" (Lämsä 2005, 70).

In the 1980s, nursing teacher education was organized in the following institutions:

- Helsinki Nursing College, since 1931 (Helsingin sairaanhoito-opisto)
- Turku Nursing College, since 1965 (Turun sairaanhoito-opisto)
- Helsinki Swedish Healthcare Institute, since 1972 (Helsingfors svenska sjukvårdsinstitut)
- Oulu Nursing College, since 1974 (Oulun sairaanhoito-opisto)
- Tampere Nursing Institute, since 1976 (Tampereen sairaanhoito-oppilaitos)

Earlier in the healthcare field, the behaviorist school of thought had been the norm. In pedagogy, discipline was emphasized and there were always right solutions to problems. Teaching emphasized learning from models and doing according to models. In conjunction with the secondary level education reform in the 1980s, humanistic and cognitive perspectives finally took on more importance. Teaching stressed the learner's personal growth and an R&D approach to subjects and teaching. The goal of

teaching was the teacher's strong professional identity – a teacher who deepens self-awareness and wants to continually grow as a person and a teacher. The teacher student and his/her students, too, learned to analyze their professional competence and to carry out research of the evolving reality.

One central process in teacher education was speculating on and questioning healthcare-related practices. The teacher was interested in the students and wanted to guide them individually. The teacher was also responsible for constructive activity at the workplace as well as the development of healthcare and healthcare education. Teaching encouraged critical thinking. Teaching practice was viewed as a linking factor between theory and practice. A research perspective on healthcare and healthcare education was also desired in the teaching practice that formed part of the teacher education (Lämsä 2005, 67–68; Iivonen 1986, 156–158; Leino, Kilp & Toiskallio 1986, 24–25, 31). In the 1980s, in conjunction with a Master's degree in healthcare, it was also possible to get a teacher education at the university.

## Multidisciplinary universities of applied sciences – Teachers of many disciplines

In the multidisciplinary university of applied sciences, teachers from different fields came face to face with each other. In 2003, the teaching qualifications became uniform in the universities of applied sciences. In part, the same requirements that were required of teachers earlier were also included in the new qualification requirements. The qualification requirements united the skills and knowledge for competence, R&D and teaching as well as competence acquired through work experience. The UAS teacher is required to have a university-level degree, and principal lecturers should have completed either a licentiate or doctorate degree. The teacher, whose main task involves teaching vocational studies, is also required to have a minimum of three years of practical work experience corresponding to his/her degree (Asetus 352/2003). Furthermore, a principal lecturer and lecturer is expected to complete 60 credit units of teacher education. The law on vocational teacher education of the year 1996 resulted in the consolidation of vocational school education and UAS teachers to five university-level vocational schools of teacher education operating in conjunction with the university of applied sciences.

In accordance with new regulations, teacher education is to include vocational pedagogical studies, general pedagogical studies, teaching

practice and elective studies. The objective of teacher education is to provide the knowledge and skills to guide the learning of different kinds of students as well as preparing teachers to develop their field of teaching with employment in mind and the changing nature of professions (Olkinuora 2000, 199 – 200; Laki ammatillisesta opettajankoulutuksesta 356/2003; Asetus ammatillisesta opettajankoulutuksesta 357/2003). Nowadays, schools of teacher education are multifaceted and multidisciplinary institutions offering pedagogical teacher education that prepare teachers for all fields. Increasingly, teacher education takes into consideration the needs of multifaceted vocational education in the continuing education and R&D of teachers and other members of personnel.

The historical background, different qualification requirements for teachers and the various pathways to teaching have all influenced the teaching profession. This is also reflected in the different ways schools operate (Auvinen 2005, 140 – 141; Tiilikkala 2003, 13). Teachers in different fields have had different levels of preparedness to face the changes that accompany the university of applied sciences. Hannu Kotila mentions three traditions: the apprentice-journeyman tradition, the vocational education tradition and the university tradition, which have all had an influence on how teachers perceive their work as well as pedagogical thinking (Kotila 2004, 13 – 19).

One objective in the establishment of multidisciplinary universities of applied sciences has been to develop new kinds of competence by joining different fields. The objective has been to increase the cooperation between teachers in different fields as well as cooperation between schools and interest groups outside of the school. The planners of universities of applied sciences also wanted to offer students more possibilities to choose studies from different fields. According to Jaatinen, it was hoped that teachers would be in the role of synergisers to create a uniform university of applied sciences school system. The multidisciplinary aspect of the university of applied sciences was seen as corresponding to competence needs for employment in the future (Jaatinen 1999, 88, 91, 119; Auvinen 2005, 180; Lampinen 1998, 109).

Teachers in different fields were not always necessarily used to each other's different ways of operating. In the initial establishment phase of the university of applied sciences, there was a tendency for different prejudices to arise concerning the operating habits and organizational cultures of different fields (Jaatinen 1999, 78 – 79).

According to Hintsanen, in the field of technology it was not part of the tradition to give deep consideration for learning difficulties that students might confront. Causes for problems were found from educa-

tional policy decisions (Hintsanen 2005, 42–43). According to Jaatinen, the field of technology has had the greatest differences between its earlier culture and the official culture of the university of applied sciences. On the other hand, the field of technology was interested in developing education, and during the investigation phase, suggestions were made to establish engineering universities of applied sciences. However, the Ministry of Education was of the opinion that single discipline universities of applied sciences should pay heed to the multidisciplinary model instead (Nuorisoasteen koulutuskokeilut ja ammattikorkeakoulukokeilut 2001, 79, 85–86).

The official culture succeeded best in healthcare and the field of social welfare. The traditions of healthcare have included flexibility, obedience and devotion to one's work (Jaatinen 1999, 206; Auvinen 2005, 139; Vanhanen-Nuutinen & Harri 2003, 285). According to Lämsä, in transferring to the educational system of the university of applied sciences, teachers in the healthcare field took on the challenge by raising their level of education, some to the extent of completing a licentiate or doctorate degree. The change has been a "quantum leap from the college-level teacher to that of a research teacher" (Lämsä 2005, 71). Business education is culturally situated somewhere between the fields of technology and healthcare. Traditional ways of operating were not much questioned in the university of applied sciences. The perspective of developing operations can in itself be enough, and the contribution of the employment sector with education also comes into question. There are differences in units and operating models (Jaatinen 1999, 135–136, 142).

According to Tiilikkala, the clear intention of the university of applied sciences to rid field-specific features from the teacher's work has received much criticism among teachers. Tiilikkala labels this learning model striving for uniformity "total pedagogy" (Tiilikkala 2005, 17–18).

On the other hand, the work of the UAS teacher already involves communal activities and operating models encouraging contact with the employment sector such that new perspectives are given to familiar subjects. Many universities of applied sciences have drawn up pedagogical strategies in order to improve the quality of education. Strategies can be applications for specific fields of education or degree programs (Salminen & Kajaste 2005, e.g., 108–109). According to Auvinen, in the development of the work of the UAS teacher, it is important to build sufficiently uniform operating modes without destroying the good traditions from different fields of education, nor should differences in fields of education be artificially denied (Auvinen 2005, 180).

Now after the active construction phase of the university of applied sciences is complete, structures that support the stabilization of change should be built. The same also strongly applies to elements related to the work of teachers. Structures that regulate leadership and operations should encourage and give the possibility for the inspiration and will to develop the UAS teacher's work. The obstacles to creating innovations should be torn down. At the same time, leadership should be capable of confronting and responding to the opposition that results from change (cf. Auvinen 2005, 24–26). Universities of applied sciences have been actively involved in making regional strategies. Therefore, universities of applied sciences are a part of the regional innovation system (e.g., Maljojoki 2000, 216–217).

The number of UAS educational facilities is expected to be reduced. The trend is towards larger schools so that high quality university-level instruction and R&D can be assured. According to the Council of State's report published in 2004, entitled *Osaava, avautuva ja uudistuva Suomi* (Competent, open and self-renewing Finland), in the changing economy more and more jobs will require ever broader levels of competence and interaction skills. In addition, it will become more common to change professions. Business competence and social innovations are expected to take on an important position in the development of jobs and employment along with technological innovations. As a consequence of the reorganization of production, it will become increasingly difficult to draw a line between industry and services as business services and industry become more integrated. The report makes an inquiry into the collaboration between different fields and disciplines in the utilization and productization of different innovations (Osaava, avautuva ja uudistuva Suomi 2004, 23, 34–36, 48, 148; Himanen 2004). The instruction based on working life at the university of applied sciences improves students' possibilities to make the transition from school to employment as well as lowering the threshold between education and employment. The university of applied sciences unites diverse competences arising from collaboration between teachers and the networking between teachers of different schools as well as with representatives from the business community. Through collaboration, teachers are building the future.

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# 3
# The Teaching Profession in the University of Applied Sciences

*Hannu Kotila – Kimmo Mäki*

## A prisoner of his/her environment or an agent of change?

### – The teacher in the work culture of the university of applied sciences

In this article, we discuss the challenges of being a teacher in the university of applied sciences from the perspective of the teaching community. In this context, teaching community refers to the organizational entity that comprises a singular unit of the university of applied sciences. The most challenging interfaces of being a teacher are, on the one hand, between working life, and on the other hand, between other units, other degree programs and other fields of learning both within the same university of applied sciences and between them. This article describes the teacher's changing work culture, highlighting its stratification and diversity.

From the teacher's perspective, the 1990s were the time of building the structures of the university of applied sciences and higher education practices. As the new millennium approached, discussion about the direction of development began to move from development of teaching and guidance counselling to a unique R&D culture within the university of applied sciences. The legislation for universities of applied sciences (351/2003), in its own way, started another wave of development in universities of applied sciences. However, signs of the direction of development were recognizable as early as the beginning of 2000 in education policy discussions. The university of applied sciences was given three tasks or directives: 1) a pedagogical directive, 2) research and development and 3) commitment to regional development. This created pressure to integrate these three tasks into one all-encompassing pedagogy for the university of applied sciences education system. Thus, the role of the teacher as a pedagogue, an expert involved in R&D as well as an agent for regional development, became more pronounced.

The emphasis of the three tasks has expanded the operational arenas of universities of applied sciences, and they have created the need for new forms of collaboration within the organization and with the regional business community and the public sector. Tighter collaboration with the business community and the public sector with their administratively challenging R&D projects and regional organizations have added many dimensions to the work of a UAS teacher. The challenges facing the university of applied sciences have taken the teacher out of the classroom to the field where there are many kinds of projects whose collaborative partners include both students as well as experts from business and/or the public sector.

In order to understand the UAS teacher's perspective, we have to expand our perception of the work culture in the university of applied sciences. In this context, a teacher might meet and work with several multi-professional work groups during the same working day. Work varying in timeframe and length contain R&D and pedagogical dimensions that teachers are responsible for so that they blend into the work culture of the university of applied sciences. We perceive that this development has shaped a mosaic-like work culture (Mäki 2004, 23), in which the central feature constructing the identity of the teacher is the question: what areas should a teacher commit to in such a multi-level and ever-changing work culture? The purpose of this article is to describe the challenges of being a teacher amidst change with the aid of organizational theory as well as research and discussion from education communities.

## Three perspectives on unity in organizational culture

In order to perceive the elements of the UAS teacher's work culture, we should examine the organization where the teacher works. Organizational culture is the perspective that strives to open up internal and external operational norms and regulations. Through organizational culture, a company or organization is able to organize operations in line with its objectives as well as create operational models with which it is able to react to external demands and markets.

In viewing the organization as a cultural element, we can understand it as a place where people interact and share meaning (Rajakaltio 1994). Mäkipeska and Niemelä (2001, 5) state that the organization has its own background and history, which are present in everyday activities. Work communities are composed of living and breathing people, which is the reason why an organization's problems cannot be solved from only one

perspective. As a result, it is a challenge to define the organization, to discover what underlies its activities and the origins of its values and norms. Additionally, the process of commitment and areas of commitment are diverse. They should be examined as multiform, human, communal and dynamically changing processes.

The central perspective of this article is based on the following tripartite cultural division: the integration-, differentiation- and fragmentation perspectives on the unity and disunity of organizational culture (Mäkisalo 1998, 37; Jurvansuu 1998, 55). The perspectives are differentiated by the kind of understanding the paradigm has concerning the social reality and the life of the organization (Jurvansuu 1998, 55).

In the integration perspective, a uniform culture is emphasized between various manifestations. All members of an organization are believed to hold nearly the same understanding of the culture's main features: values, norms and rules for behavior. Such things as consensus, avoidance of conflict and consistency take on greater importance (Mäkisalo 1998, 37). Attention is paid to only those features that increase uniformity in the organizational culture. Generally, the information sources in this kind of research have been representatives from the higher echelons of the organizational hierarchy. Harmony and commitment are considered to be central factors when examining the organization from the integration perspective. Conflicts and disunity have been signs of weakness or total lack of an organizational culture (Jurvansuu 1998, 56–57). The integration perspective comes forth more clearly in a small university of applied sciences, within one degree program or in a narrow field of learning in UAS units.

The differentiation perspective, on the other hand, questions the broad internal consensus of the organization. It reveals the organization's subcultures. Common values and norms are not questioned, but how they manifest themselves is not necessarily consistent. In fact, the values that arise in the public domain might be in conflict with those set by the organization. Conflicts and fluctuation between subcultures are an essential part of differentiation. The subcultures might be formed on the basis of differences between professions, hierarchy, ethnicity, demographic and cognitive processes as well as gender. Conflicts, neutral interaction or consensus can predominate between subcultures. In universities of applied sciences, subcultures can be divisions based on scientific field and/or field of teaching as well as divisions between vocational subjects and general subjects. In this kind of organization, consensus never arises between the dominant culture and the organization's subcultures. Unclear matters and conflicts are channelled between subcultures and outside of

them. In fact, subcultures form a demarcated islet of clarity and consensus. The members of an organization perceive only a part of the complex issues in an organization and its surroundings (Jurvansuu 1998, 58 – 59; Mäkisalo 1998, 37).

In the differentiation organization, consensus is viewed as being meaningful in some way. Consensus is stronger in the core of the organization. However, in subcultures located at the periphery of the organization, unity is weaker. The integration and differentiation perspectives do not sufficiently take into account the indefinite character of culture and its multiple levels of interpretation, which are essential parts of organizational culture, particularly when studying expert organizations.

According to the fragmentation perspective, multiple meanings are inevitable and a constant feature in organizations nowadays (Mäkisalo 1998, 37). Equally inevitable is indefiniteness as a part of an organization's reality as well as the study of the organization (Jurvansuu 1998, 59). The relationships of cultural manifestations are confused and opposing, clear consensus is lacking throughout the whole culture and within subcultures. Individuals sharing the same perspectives and values are united with some other people or groups, but not necessarily with the whole organization or subcultures. Different situations and issues activate the networking of cultures in different ways (Mäkisalo 1998, 37 – 38). Unity and disunity are simultaneous and situationally prevalent states in the organization, so that drawing a clear line between the dominant culture and subcultures is difficult. The only shared experience is indefiniteness. Therefore, how this "emotional state" is experienced and what kinds of meanings are attributed to it, is meaningful (Jurvansuu 1998, 60). In addition, the requirement to network in the organization creates a fragmentation culture.

Networking manifests itself as an internal principle in the organization, whereby decision making is increasingly fragmented throughout the organization. Hierarchical structures are partially disassembled, and projects of varying scope bring together the best heads in the "house" for the required work groups. Projects form socializing subcultures lasting for varying lengths of time, which in turn contribute to a constant state of inconstancy within the organization (Aaltonen & Wilenius 2002, 27).

A similar cultural perspective is examined by Hargreaves (1999, 238), who labels it a "moving mosaic" culture. Internal and overlapping groups form in the organization, which are the basis for the growth of different cultures. During one working day, a teacher might move several times from one culture to another. However, the cultures are not independent, instead they are joined like parts forming a mosaic of the whole operations of the organization. Defining features of the operations of this kind of

organization are flexibility, dynamism and receptiveness. These qualities also make it possible for the organization to respond quickly and precisely to the needs of its customers. On the other hand, the aforementioned indefiniteness, vulnerability and the tendency for internal strife are the weaker aspects of a mosaic organization (Hargreaves 1999, 238).

The mosaic pieces of the work culture in the university of applied sciences are composed of the internal elements of the organization, such as teaching field divisions, regional operational units, different thesis cultures, different leadership cultures and different vocational expert- and knowhow cultures. Multidisciplinary universities of applied sciences represent the foundation for growth of mosaic culture.

The external mosaic pieces are composed of the regional business community, the public sector and collaborative groups operating with the third sector. Expanding R&D with multidimensional channels and regional development form, in conjunction with UAS teachers and other working life experts, operational entities that together plan, research, implement and evaluate projects.

The requirement of the so-called third task contributes to the creation of a mosaic-like organizational culture in the university of applied sciences. In the operations of a university of applied sciences, the pedagogic activity, the R&D activity and regional development should be integrated into one entity. All three activities should be present during normal teaching and guidance counselling situations and thesis processes as well as in work placement. This places demands on the planning and implementation of teaching as well as demanding a broader range of competence from UAS teachers. It creates fragmentation in work and at the same time it places demands on the ability to control different elements of teaching in the university of applied sciences.

Therefore, as an organization, the university of applied sciences creates a basis for differentiation and fragmentation as well as sustaining different subcultures within the organization. The broad organization formed from old vocational schools that extends beyond local boundaries contains former individual school- and teacher cultures. Finding a uniform culture and implementing it throughout all levels of the organization creates indefiniteness and juxtapositions between the dominant and minority cultures. As Jurvansuu stated, unity and disunity is also the prevalent state in the organizational climate of universities of applied sciences. A paradox arises when attempts are made to unify the fragmented university of applied sciences with the integration approach. In this manner, the inequality between the organization's outer rings and inner rings becomes more apparent and the basis for strong subcultures is set.

As a result, according to Mäki (2000, 76), the organizational culture of the university of applied sciences is merely beginning to take shape, containing parts of different cultures transmitted by individual people. The development easily evolves from differentiation to fragmentation because within the university of applied sciences different groups differentiate themselves due to different internal and external pressures for development. The old work communities (the former small school communities) break down within a large organization when different projects bring together experts from different fields. This stems from the objective to make the university of applied sciences an organization of experts, whose staff is expected to be innovative and research-oriented (Vesterinen 2003, 59). The university of applied sciences is expected to have the operating mode of an intelligent and learning organization. This goal is a tough challenge for commitment. A fragmented organization contains many subgroups that become distanced from one another in their work. Taking advantage of specialized expertise increases teachers' autonomy while decreasing the organization's autonomy. Expert organizations are forced to continuously seek a balance in this matter. When a teacher commits to his/her work, does he/she commit to the organization as well?

Teachers in universities of applied sciences are facing different processes of vocational socialization. The UAS organizational culture, the culture of one's own professional field, the culture of the teacher community and students' socialization for professions and professional fields are certain kinds of dominant- and subcultures in which unconscious and conscious choices are made with regard to commitment (Kotila 2004, 11 – 24). The amount of diversifying working life-based projects and research exacerbates the problem. As the amount of operational and independent project groups grows, the boundaries of the organizational culture fade. In the near future, the integration of the three tasks might lead to the development of a loosely unifying organizational culture. It can form a "support base" in the university of applied sciences, which acts as a teacher's work "filling station." Teachers and their students work, in alternating periods, on working life projects or undertake projects within their own organization. The work culture becomes project-oriented, but what will happen to commitment to the organization?

## What to commit to, and why?

To understand what it means to be a teacher in the UAS education system, it is important to know what is their relationship to their work. We can understand this relationship with the concept of commitment, which brings to the fore both the internal calling to work as a teacher, the status the organization attributes to teaching as well as professionalism. In the following, we analyze commitment through the concepts of internal and external commitment as well as separating it into different levels from the perspectives of professional and organizational commitment.

### Individual willingness to commit oneself to the organizational culture

According to Meyer and Herscovitch (2001, 299), uncertainty among researchers prevails in the evolution of commitment. Where does commitment come from and how can it be seen from behavior? Does commitment develop as a whole, such that an individual's relationship to the organization is a union of emotion, reason and behavior? Or is commitment only external activity? In examining the definitions of commitment, the constant perspective is the relationship between the individual and the organization. Next, we consider different definitions of the individual's commitment to the organization.

Shamir (1988, 242–244) divides commitment into two main parts: external and internal. In external commitment, external relationships influence whether a certain activity continues, roles, role behaviours and contact with other people within a social system. In internal commitment, the motivated individual continues to follow a pattern of familiar activity. The individual's internalized objectives as well as norms and values become apparent from his/her activity. The more important the activity, role or contact is for the individual's identity, the greater his/her level of commitment (Shamir 1988, 244). The concept of internal commitment can also be analyzed with the theme of vocational calling.

External and internal commitment receive more profound shades of meaning in the definition suggested by Hackett, Lapierre and Hausdorf (2001), when the matter is examined from the perspective of vocational and organizational commitment. They define commitment as the relationship between the individual and the organization and divide the structure of commitment into four parts: vocational and organizational commitment as well as attachment to work tasks and work itself.

Occupational commitment refers to an individual who is motivated in his/her work in a career of his/her choosing. Such an individual possesses an internal ability to adjust to change, which he/she uses in occupational commitment. A high personal level of occupational commitment promotes the development of the individual's personal skills as well as strengthening commitment to the further development of one's career. In addition, the organization expects strong occupational commitment from its employees because such persons invest their competence in development and their special competence in practice in the work they do (Hackett, Lapierre & Hausdorff 2001, 393). Therefore, how is Shamir's internal and external commitment defined in relation to occupational commitment? Which one does it represent? Both perspectives are emphasized in occupational commitment. A teacher might have a personal bond to his/her own profession and career, but in this process commitment to the organization remains rather loose (cf. Kotila 2004, 11 – 24). The university of applied sciences gives the individual teacher the opportunity to develop his/her own competence and career, in which case commitment to the organization is external.

In the second element, organizational commitment, the individual's experiences as being part of the organization are emphasized. The individual possesses the willingness to believe the goals and values of the organization. He/She maintains a personal desire to belong to the organization and goes out of his/her way for the good of the organization (Hackett, Lapierre & Hausdorff 2001, 393 – 394). In this model, the teacher is internally committed to his/her university of applied sciences and puts forth extra effort on its behalf. Vocational development takes place for the benefit of the organization, not for oneself.

The third perspective on commitment is the individual's involvement in his/her job. In this model, an individual person has psychologically identified with his/her job. Such a person's needs are satisfied from work as well as maintaining personal identity through work (Hackett, Lapierre & Hausdorff 2001, 394, 396). The teacher who is so strongly involved in his/her work, might lose motivation if his/her work tasks change within the same organization. Job involvement maintains an important position in the commitment process. It is the main link in occupational commitment. The UAS teacher, whose level of commitment is highly involved, experiences continuous changes in work as problematic. Change and indefiniteness are constants, and the highly committed person becomes distressed in a changing work environment.

The fourth element in the definition of commitment is work involvement. In contrast to the earlier involvement process (job involvement),

work involvement does not involve specific emotional charges to certain job tasks. The person involved in his/her work perceives work as a whole, not as a set of separate job tasks. Such a person has a strong bond to work as a life value. To this individual, work is an award to which one answers. This person feels guilt if he/she cannot meet the demands set forth in the work. Individuals with a high level of work involvement show contempt towards people who lazily enjoy life. In their opinion, work should be done is in the best manner possible. They consider work to be everyone's moral obligation. The basis for this attitude is the Protestant work ethic, which stirs feelings of responsibility for one's work in the individual. The highly committed teacher, who is so steadfastly involved in his/her work, is also a benefit to the university of applied sciences. Hackett states that the process of organizational commitment is strongly connected to work involvement because the employee that feels a broad sense of responsibility towards his/her work also feels a similar responsibility towards the organization. Thus, a sense of responsibility and loyalty guide the committed UAS teacher (Hackett, Lapierre & Hausdorff 2001, 394 – 395).

Meyer and Herscovitch raise the discussion on the concept of obligation in considering the internalization of values and norms. Accordingly, a committed individual feels obligated to act a certain way in the organization or community for their benefit (Meyer & Herscovitch 2001, 301). Loyal employees are strategically important for the organization and human resource management. They are the internal force of the organization (Morrow & McElroy 2001, 178).

Loyalty can contain the individual's emotional involvement with the organization, the feeling of obligation to remain with the organization or the experience that being part of the organization is something to be treasured (Meyer & Herscovitch 2001, 306). The individual's commitment often gives a picture of his/her values, choices as well as goals and ambitions. The stronger the individual's commitment, the greater is the amount of his/her personal investment. However, at the same time, the threat of stress increases, which manifests itself when the committed individual fails and tires in his/her work (Lazarus & Folkman 1985, 56).

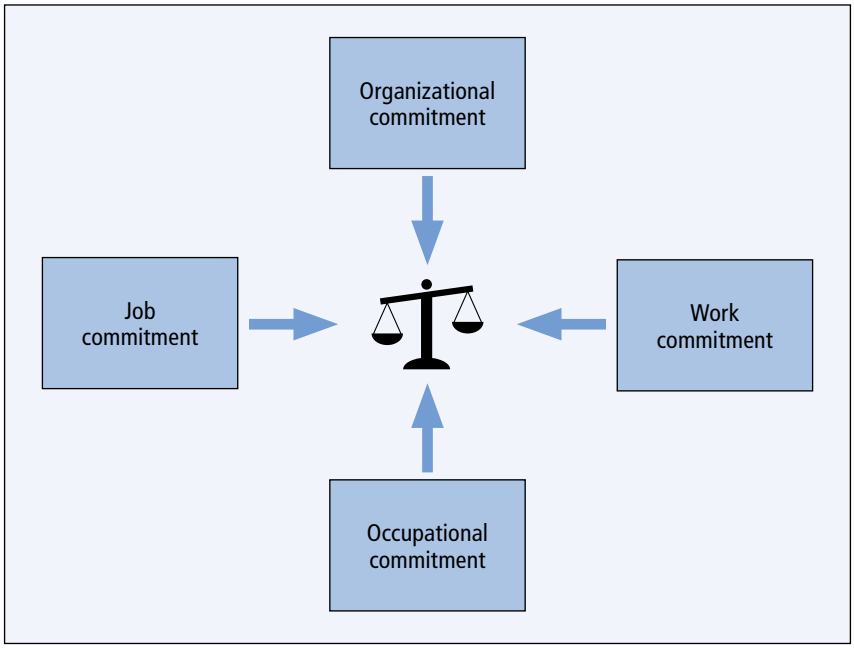


Figure 1. Variations in work commitment

Internal commitment presents challenges to the organization. The individual's needs for commitment can be in conflict with the generally desired and accepted motives and attitudes. The individual might be committed to one or several areas. Thus, the basis for motivation and attitudes can be distinguished from one another, which might have an influence on the lack of external commitment and attitude in the individual's behavior (Meyer & Herscovitch 2001, 301).

External and internal commitment are not mutually exclusive concepts. In real life, the individual who is internally committed strives to reinforce his/her behavior with external commitment (Metsämuuronen 1995, 91). In fact, we can assume that a UAS teacher, for instance, who is committed to the ideology of the UAS education system, consciously strives to strengthen and clarify his/her role as a teacher. This can be observed by students and colleagues as motivated behavior in the organization.

Individual differences can also be noted when considering what teachers commit themselves to in their work. Is the object of the teacher's commitment the organization, in which case the goal of his/her work is tied to the interests and objectives of the university of applied sciences? The organization is thus the object of commitment from the personal work perspective. The object of commitment might be influenced by the normative pressure within the university of applied sciences or the

personal internalization of values and norms. Even though a teacher's work groups and work tasks might change, he/she still wants to be a part of the organization. However, the teacher might only commit to his/her work instead of the organization. The work that he/she performs provides internal gratification in itself, in which case the interests and ideology of the university of applied sciences take on lesser importance. If the teacher feels that the work he/she is doing is a professional calling, then this feeling can serve as a powerful resource. As such, he/she identifies with the values and objectives of work, internalizing them with his/her own sense of professionalism. On the other hand, the individual's own career can be an object of commitment. Making use of one's own competence as well as seeking and realizing personal achievements in the organization take on more importance. In this case, the teacher seeks out challenging assignments in the organization for the betterment of his/her career (Gallagher & McLean Parks 2001, 188 – 189; Meyer & Herscovitch 2001, 302).

Commitment to the organization, work or one's own career receive novel interpretations when the focus of examination is the duration of the individual's employment. Gallagher and McLean Parks (2001) studied commitment among employees engaged in traditional employment, temporary employment and self-employed people. The stronger the sense of job security an individual feels in the organization, the more clearly the individual is committed to both the employer and the organization's goals as well as the work itself. In occupational commitment, the sense of vocational calling and the importance of the work's internal values are emphasized (Gallagher & McLean Parks 2001, 191).

Ruohotie perceives both organizational as well as individual factors as central to the process of commitment. Mutual interaction commits the individual in his/her work to the role of developer, which is not foreign to occupational reform. Expert professions, to which the teaching profession in the university of applied sciences is considered to belong, also denote commitment to a specialized field. The specialist concentrates on developing his/her competence in a certain field. In the field of teaching, this requirement is self-evident. Teachers are expected to have command of the latest knowledge in their subject area in order to guide students on the path of professional development (Ruohotie 1998, 101 – 102). Commitment to development is particularly desired in expert organizations, in which staff training and development is generally appreciated more than the average. Due to the nature of the work, its complexity and independence, the organization should offer various opportunities for development (Sipilä 1991, 141).

Change can also act as a factor that binds people to the organization. Teachers are capable of perceiving that changes in the organization do not only imply more work, but also open up new possibilities as a teacher and personal growth. Change might bring a new sense of community to the organization, including shared views, hopes and fears. The joint recognition and sharing of problems, self-assessment and new ideas about how to behave as a result of change altogether imply change to the entire organizational culture.

### The organization can make commitment possible as a facilitator of commitment

In the division proposed by Strömmer (1999, 163), external and internal commitment are intertwined. Accordingly, the individual commits to the organization in three ways: 1) commitment of the individual on an emotional level, 2) by creating job security and, 3) the individual's obligations are emphasized through the organization's norms and values.

In the commitment that takes place on the emotional level, the teacher feels a sense of belonging in the organization. According to Jokivuori (2002, 18), commitment can be understood as an attitude that is a rather stable and consistent way to react to an object. It is a question of a mental state of mind that is formed through experiences. One component of the attitude is the affective component, which includes emotions. From the commitment perspective, such a person that has evaluative feelings towards the organization, he/she expresses them as either positive or negative evaluations. Emotional commitment is at the core of the commitment process. It describes how strongly individuals are emotionally attached to the organization. Emotional commitment means the individual's reaction to the organization, strong acceptance and belief in the objectives of the organization as well as the desire to remain a member of it.

In Strömmer's second approach, the organization attempts to create an environment in which the individual feels a sense of job security, including the risks involved if he/she should leave the organization. The third perspective is the normative level, in which the organization reaches out to the employee's feelings of responsibility and obligation in order to promote commitment to the organizational culture. (Strömmer 1999, 163) The normative level also includes elements that hamper commitment. The management of universities of applied sciences might set different norms and guidelines for how work is to be performed. Mäki (2000, 77) views the top-down quality assurance framework as one of the biggest

problems in the staff's unwillingness to commit to their work. If the norms are predominantly decisions made from above, it is difficult to imagine that the entire personnel would commit themselves with high quality results.

Commitment is a indicator of which tasks within the organization are worth aiming for, how important he/she perceives them and how enthusiastic he/she is to act in order to reach objectives, despite difficulties (Ruohotie 1998, 55). According to Strebel, the essential feature in staff commitment is how much the personnel wants to work as well as what kinds of recognition, financial rewards or other forms of personal gratification they receive for their efforts. It is also important to note the size of the rewards in relation to the difficulty of the work (Ruohotie 1998, 88).

In addition, a parallelism between individual and organization objectives creates personal satisfaction. When the university of applied sciences is ready to clearly present its own objectives, teachers' awareness of their own objectives in relation to the organization grow. For the organization, good objectives are ones that are clear, realistic, challenging, extensive, inspiring and in balance with overall objectives (Skärvad & Bruzelius 1992, 79 – 80). In order for internal commitment to be possible, trust has to prevail between the teaching staff and the university of applied sciences. Trust is based on matters agreed on beforehand and contracts that hold while maintaining equality. Trust is born when the organization's own objectives are clear and understandable, as mentioned earlier. Additionally, the management should trust the staff's judgments and allow independence as well as giving support and feedback (Maunula 1992, 108).

Commitment to the organization's objectives through one's own personal values becomes stronger the more the personnel has been involved in the development of organizational objectives with the management as well as how much they are able to have an influence on the decisions and solutions that affect their work (Ruohotie 1990, 155 – 156). The management should have firm knowledge of staff competence when setting objectives. Different people in the organization have different levels of experience, so leadership should change according to the experience level of the staff. Some people require more guidance, others less. Therefore, effective leadership requires situational awareness and flexibility (Juuti 1998, 47).

For expert organizations, it is of prime importance that the staff remains committed. In expert organizations, much more is expected of individuals than simply performing their work. Self-regulated working habits and command of a diverse range of tasks requires a novel level of

professional preparedness. Individuals face new, open situations in their work, in which case they need a problem solving and multitasking approach, which requires individuals to internalize the organization's objectives, operating principles and culture (Jokivuori 2002, 11). On the other hand, changes in diverse tasks might lead to weakening of commitment in relation to work tasks and the organization. In this case, the individual's elements of commitment are fulfilled by career commitment, which might result in the individual's leaving the organization (Morrow & McElroy 2001, 179). Responding to challenges requires reciprocity from both the organization as well as its members.

There are indeed challenges for both universities of applied sciences and teachers. The formation of the university of applied sciences has brought on big changes for teachers. Being a teacher has changed from simply carrying out the job of teaching to a wide range of tasks, project management and the development of working life contacts in one's own field. In addition to external commitment, these kinds of changes require that teachers have elements of internal commitment. On the other hand, universities of applied sciences should also know how to make use of staff competence, which leads to greater commitment. Utilization of competence, together with development, raises the organization's ability to perform on the education market (Mäki 2000, 116–117).

In Mäki's study "Factors of quality in the university of applied sciences" (2000, 222), staff commitment to the university of applied sciences is one area that received consideration. Mäki states that personnel is committed to the development of its university of applied sciences, but primarily their commitment is towards the development of teaching. It begs the question whether the work of a teacher solely involves teaching and learning processes? Should the teacher also commit him-/herself to developmental tasks of the institution, the marketing of education and international activities? Commitment has taken on a prominent position in educational facilities. As decision making authority has been broken down and leadership in an educational facility now requires more commitment, the organizational culture based on control and surveillance has reached its end. Nowadays personnel is assumed to commit itself to the organization's strategy, in which case the individual's personal values are based and reflected in the similar values of the organization. One crucial question has come to the fore: What, where and to whom should one commit? Should commitment be directed to one's workplace, colleagues, customers, jointly defined values for operating as well as continuous learning together (Mahlamäki-Kultanen 1998, 37)?

How should the bases of commitment for the teacher's work, personal interests, the organization and possibly university of applied science ideology be perceived? Metsämuuronen (1995, 92) states that commitment is problematic to study because, at its base, it is always charged with values and motives and their related mental processes. Metsämuuronen views external commitment to often be exactly that which can be extracted through research, because the individual is easy to evaluate for his/her performance and accomplishments (Metsämuuronen 1995, 92). The dual meaning of commitment complicates its research. Commitment is understood as a person's desire to put forth energy and loyalty to the organization, but on the other hand, commitment can simultaneously be perceived as an attachment to the organization through social relations. In this definition, the structural and individual perspective unite, which presents a challenge when attempting to understand and analyze commitment in the mosaic-like organization.

## Does the new sense of community bring the pieces of the mosaic together?

Change has been a central element in the short evolutionary history of the UAS teacher from the very beginning. This is also the case now. The first years of the 21st century have presented the UAS teacher with extensive challenges. In addition to the traditional competence requirements – pedagogical, content competence and R&D competence – organizational competence has joined the list. The requirement to integrate the three tasks has added multilevel work tasks and forums to the teacher's workload (Kotila 2003, Kotila & Mutanen 2004). Contact with the business community is growing to become part of the ideology in the work teachers do. Learning in the classroom or lecture hall is giving way to experiential and developmental learning between students and business partners in the business sector.

Multidisciplinary universities of applied sciences create the basis for the mosaic-like organizational culture. The internal pieces of the mosaic consist of the differences between educational fields, subject area cultures, different thesis cultures or leadership cultures. Old established subcultural cliques are dissolved by in-house development projects, which require the recruitment of experts whose educational fields intermingle. The internal life of the mosaic-like organization exists in two timeframes that divide different working cultures. Conversely, the external pieces of the mosaic consist of project-driven expert teaching groups that exist for the dura-

tion of their purpose. The groups are composed of experts, learners and others from both inside and outside the organization. Thus, the boundary lines of the organization begin to fade and the concept of the close community changes meaning. The scattered and layered job description and operating context are the greatest challenge to the UAS teacher, his/her sense of commitment and sense of collegial community.

The mosaic-like organizational culture, in its flexibility and sensitivity to react, also poses challenges for the internal operations in the university of applied sciences. How should a multilayered entity be led, how should each employee's competence be taken into consideration, how can a unifying element be found among the different subcultures, how does the requirement for autonomy build a sense of community?

Is community the element that assembles the disunity and multilayeredness? Encouragement, support and feedback for work done well and job security are still expected from one's work environment (Mäki 2004, 86, 112). The sense of community and its recognition creates stability in an otherwise changing operating context. In the multidisciplinary university of applied sciences, there are many communities. From the teacher's point of view, the most natural one is his/her own field, including colleagues and managers. On the other hand, several fields consist of teachers from different fields, so the sense of community might be derived from the common subject. Long-term projects connect experts from different fields and the project community might take on a life of its own for the duration of the project. Additionally, job positions both unite and separate people, for example, the teaching staff and teaching support staff.

Since community can be continuous or temporary and the individual can belong to several communities within the organization, the concept of community should be re-examined. How can the sense of community be perceived in the mosaic-like organization? Is the sense of community in the expert organization found among these alternatives:

1. Perception of one's own community and sense of community
   - need to belong to a community
   - possibility for dialog
   - possibility for sense of job security
   - possibility for autonomy at the individual and community level

2. Sense of community and shared expertise
   - peace for reflection

3. Planning and implementation of commitment processes in times of change
   - comprehensive planning group
   - well-planned process of application
   - responsibilities for application
   - assessment of process implementation

Recognition of one's own community is important. Everyone has the need to belong to some group. In order for a community to operate as a part of a big organization, the community has to be a natural part of the mother organization. Values and ways of operating cannot delineate from the mainstream. However, it does not exclude the possibility of autonomy and independent solutions for the challenges that might come by.

The key to the intelligent organization is competence (Sydänmaalakka 2002). Cherishing and maintaining competence is based on collective and shared expertise. Within the UAS community, there should be forums where there is time to understand and internalize the knowledge and skills that countless activities and projects produce. There should be peace for reflection, not only for teachers, but also for the multi-professional project teams.

In order for the sense of community to act as an element that promotes job security and commitment during change, great care must be taken in planning the implementation of projects that affect the whole organization. From the organization's perspective, the starting point should be a project planning team with diverse members. Internalization of change will be assured when care is taken that every level in the organization is well informed and critical discussion is allowed. Lack of discussion will probably make it impossible for an expert organization to feel change for itself. Different levels should find the key persons to lead the work of informing about important matters at hand. Assessment of effectiveness assures that the winds of change will flow from one field to another, provided that follow up of its concrete implementation is carried out at a later stage. This process should be made into a model to produce working solutions that can be easily applied in the mosaic-like organization.

Such a model would increase both credibility and transparency as well as facilitate the development of a new kind of role for the teacher in the university of applied sciences.

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# 4

# An Experiment in Teaching Methods for Collaborative Teaching

*Tanja Maaninka – Toini Rossi*

## From an intuitive experiment towards solution-oriented pedagogy

The background for this article is an experiment at Rovaniemi University of Applied Sciences. The starting point of the experiment was the adult learners' needs that teachers observed in their practical work and the wishes presented by students that their different competences and study objectives could be taken into consideration. Adult learners often possess strong practical competence and expertise in their own field, yet conversely, they might be lacking in some competence areas that are required in studies at the UAS level. The majority of the students involved in the experiment worked while studying. In the planning of teaching, it is important to take into consideration the stages of life adult learners are in while studying so that it is possible to both study and care for family needs. Another obstacle is the long commuting distances from one's home to Rovaniemi, because some of the students live far away in the Oulu region or live scattered throughout the vast Finnish Lapland. Therefore, it is not a given that study and work schedules can be easily made to fit. Online studies and guidance counseling with the aid of email are nearly everyday activities. Generally, adult learners have fewer contact lessons than younger students, and as a result, the amount of independent study is considerable.

As the start of studies often requires that students give careful consideration to practical matters, it is of upmost importance that the studies produce results. Teaching should produce results that serve adult students in their specialized tasks. It is important that they get a complete picture of the subjects they have studied, and that a self-regulating attitude towards lifelong learning develops within them. Even though an educational organization is capable of producing and defining the need and objec-

tives for study on a general level, it is not necessarily able to offer either of these things to students in practice. The student can complete studies without actually having learned the things set in the objectives, or he/she might already have the necessary knowledge and skills, in which case frustration and disappointment towards the education and how it was organized ensue. In such a case, studies are redundant. The problem is known by the curriculum planners, but solving it is not easy. It requires extensive personalization of studies, whose objective is to facilitate the student's individual study path as well as define and acknowledge earlier gained competence. In practical work, personalization demands a lot of work from the teacher, which is not always even possible due to time and money constraints. Awareness of these facts has given the impetus to try out different kinds of teaching and learning methods in which consideration is given to the individual student within a large group of students.

The focus of the experiment is a teaching method, which when refined, makes it possible to support adult learners towards self-direction in their studies as well as setting their own learning objectives and assessment of learning. As Hänninen (1994) states, self-assessment is not a self-evident character trait, instead it is either an evolved or consciously developed skill. It is a tool with which a person can develop him-/herself and actions later in life. In the development of self-assessment, one has to demand honesty of oneself, to ask what are the motives for action as well as one's own willingness to receive feedback and take responsibility for one's actions. According to Kalli (2003, 65), the development of professional practices requires critical reflection in relation to the activity and reality at hand. In this development project, the concrete task was an experiment on co-operative learning collectively among teachers at Rovaniemi University of Applied Sciences in the teaching of adult learners.

The influence of many learning approaches can be perceived in the experiment, such as problem-based learning, research-oriented learning or project-based learning. However, further examination of these approaches reveals that, as such, the approach employed in this experiment is not based on any of the aforementioned.

Problem-based learning (PBL) is unique in that it emphasizes the use of tutorials, whose main element is the seven step model with its clearly demarcated stages (Poikela 2003). One common and clear feature between the experiment and PBL is student-centered learning – it is the student who makes the questions he/she wants answered.

In research-oriented learning, the essential feature is work that strongly focuses on prior knowledge and understanding. These problems are tied to students' earlier knowledge and experiences. Work progresses gradu-

ally as a deepening process in which the focus of attention is one's own questions and explanations as well as information derived from sources. This trait is also noticeable in the approach employed in the experiment, but the difference is that research-oriented learning stresses self-direction in the adult learner and gradual advancement in the theoretical examination of a subject as well as the development of one's own theories and explanations (Johansson, Ranta & Seppänen 2003). It can be particularly suited to the adult learner who already knows how to plan his/her studies and possesses sufficient study skills. Research-oriented learning requires a relatively long amount of time in order to reach set learning objectives. In the model used in the experiment, the idea of research-oriented learning did not fulfill expectations with regard to time and self-direction because the learning process is relatively short time-wise and a rather narrow activity. Another discrepancy appears in the purpose of the experiment, which is to increase and support the ability for self-direction, and the student is not assumed to possess these attributes to any great extent.

Project-based learning is also a relatively long-lasting course built around meaningful problems that brings together different fields of knowledge for a predetermined period of time. The purpose of project-based learning is to develop students' real awareness about the practical aspects of work. They learn to join theory and practice into bodies of knowledge whose competence they display through careful reporting (Eteläpelto & Rasku-Puttonen 1999). The essential difference with project-based learning is that in the model used in the experiment, the body of knowledge is not planned in accordance with a ready-made formula or model nor is there any attempt to report the learning process and ways of operating as thoroughly.

As the experiment progressed, it was observed that Kalli's (2003) solution-based pedagogy proved to be a nearly identical approach. Accordingly, teaching has to get people in contact with reality on the experiential, practical and conceptual level so that reality does not depend on a person's conception of it, but that a person's conception of reality corresponds to reality itself. Kalli (2003, 61) states that the student should be helped to see reality as it actually is and to act on the basis of that understanding. Solution-based pedagogy seeks to discover ways with which the teacher is able to improve his/her existent skills in teaching. It attempts to better take into consideration the learner and the conditions of the learning situation. The theoretical basis of solution-based pedagogy is in realism, according to Kalli (2003, 67–69), but pedagogical ideas have been influenced by models of knowledge construction from pragmatism and cognitive constructivism and from views on how reflective thinking

develops. Kalli (2003, 60) does not propose a new approach, instead the objective is to produce a tool that helps in selecting the suitable teaching approach for a given situation, as was done in the research focus of the experiment. Therefore, the purpose is not to construct an omnipotent teaching method, instead it is to create a suitable model or way of operating for only certain applications, which serves the needs of adult students with differing knowledge and skills in specific subject areas.

One element of the experiment is the development of student self-assessment in both the start and end of a course. The purpose is to increase the student's goal-oriented approach to learning, consciously directing one's behavior toward an objective and the possibilities for decision making as a motivating factor to control one's own learning. According to Mezirow (1991), experience is meaningful only when it produces broadened learning, that is, it gives new meanings to both old and new experiences. In Mezirow's theory, this means questioning one's own way of thinking, observations and actions as well as critical examination of beliefs and rationalizations (Ruohotie & Honka 2003, 40).

## The purpose of the experiment and defining the research problem

The basis of studies is the curriculum, with which course offerings are organized. The purpose of education is to produce a certain level of competence with the aid of certain elements or contents. These elements are determined in accordance with vocational qualifications, and the purpose of a diploma or block of studies composed of elements is to produce a certain level of competence for working life (Heikkinen 2004, 172–237). Education and a block of studies are planned and the objective is defined on the grounds of a certain level of basic competence. This competence is defined according to the general level of need, and it is traditionally assumed that all students possess the same level of basic competence. This often leads to a problem between the adult learner and the group of adult learners as it is very seldom that all the students in the group share the same level of competence. Consequently, one person might have to do much more work than another, while someone else might become frustrated because he/she already has thorough knowledge of the matter. In order to attain its objectives, the curriculum defines contents, ways of working, exercises, exams and reading material. Raivola (2000, 45–46) has defined customer satisfaction with education as the requirement to

satisfy student needs and fulfill learning expectations. Additionally, it is important to remember that customer satisfaction is always a subjective experience, an added value for competence.

Learning, change in the level of competence, is a very individual event. The progress of one student might be noteworthy, even though the level he/she has reached does not even surpass another person's starting level. In addition to assessment of learning performance based on measurements and tests, information is needed about the learner's experience of learning when examining whether learning objectives have been met. The student's own critical examination of his/her work, that is, reflection of the learning event and learning experience, according to several researchers (Boud et al. 1985; Kemmis & Mezirow 1995), reveals information about the true nature of learning outcomes. Reflection is part of meta-cognitive skills, which are characteristic human skills of awareness of one's own thinking processes and the ability to control and direct one's own mental processes (Poikela 2003, 54). The learner that has acquired a routine habit of self-assessment possesses a tool to evaluate one's own work to develop study habits. In light of this background information, the research problem is defined as follows: How can cooperative teaching and cooperative learning promote the development of students' meta-cognitive skills? How can cooperative teaching and cooperative learning promote curriculum objectives to reach individual student learning objectives?

In light of the current theoretical foundation, it is rather difficult to discern a descriptive concept defining the competence need that aims at the command of one study module. There are numerous concepts examined at different levels about processes that aim at defining, in some manner, earlier competence in relation to objectives. For this reason, it has been problematic to define a proper concept that could be used in this experiment. Lack of competence is defined in the literature with several different concepts, for instance, a competence deficiency, need for education, competence need gap, learning need, education need index, experienced need for education and subjective need for education. At the organizational level, these concepts all somewhat contain the direction for activity and education that aims at learning. In conjunction with defining the concept, the information searches for defining education and competence needs very often led to different interpretations of the concept depending on the database that was used.

The concepts related to the individual's real need for one's own competence and its definition have also become a more essential focus in research and investigation during the last ten years. A closely defined concept is competence need gap, which Pesonen-Leinonen (1999) has introduced

as the situation in which there is a gap between the demands of work and the employee's needs at the moment. A closely defined concept for experienced activity is personalization, which is customer-oriented and maps the present state of a person's competence as well as planning a personally-customized means for the learner to reach learning objectives (Heikkinen et al. 2004). Personalization is a question of the entire planning and implementation of education, whereas in the method used in the experiment, the most descriptive term is learning need.

Since adult learners have very different competences arising from different work and study backgrounds, it was considered necessary to first clarify what is each person's learning need. On the other hand, everyone has his/her share of competence capital that, when shared, enriches collective learning. For this reason, cooperative learning (Sahlberg & Leppilampi 1994, 39) suits as a form of study. Many actions at work are communicative situations, at least in service companies. It is hoped that cooperative teaching and cooperative learning produce ever more coherent learning content and knowledge structures for learners as well as making teachers' work more unified.

This experiment aimed at clarifying how the overall objectives of a course, the student's self-defined and personalized learning objectives and quality level as well as the simultaneous teaching and joint execution of exercises for two courses would facilitate students' more comprehensive learning. Working while studying, the average adult student's day is hectic, so it is extremely important that assignments produce useful knowledge and skills as well as motivating students to strive to greater lengths. Working and communicating in an organization, human resource management and corporate communication are closely related, so it was natural to examine them as well.

## An action research approach in development

The approach for the practical implementation of the experiment was action research. Action research, according to Heikkinen (2000), is self-reflective knowledge acquisition, whose objective is the development of social practices. The flow of action research is spiral, in which the following phases repeat – planning, action, observation, reflection and changing action. One phase of the cycle is always the foundation for the next phase. A main problem is examining the relationship that forms between the understanding arising from observation and reflection of the earlier cycle

and the action of the next cycle. As such, action research builds a bridge between the past and the future (Suojanen 1992, 40–41; Rossi 1999).

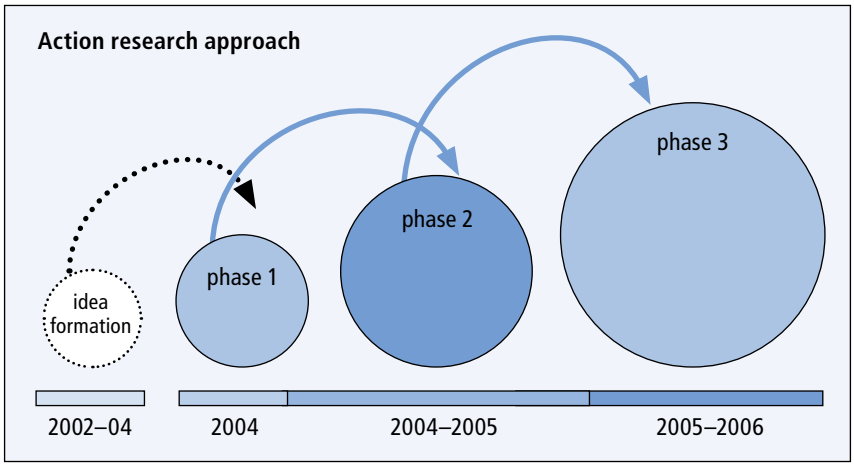


Figure 1. The phases of action research for a development project

The applicability of the action research model can be justified in that work is composed of repetitive cycles, and through action, new knowledge about pedagogical practices in use can be acquired. The first cycle, that is, the idea formation phase, can be considered the beginning of the research process (figure 1). In action, there are situational factors that are taken into consideration in every experiment, and whose meaning we seek to understand.

The different study and learning backgrounds of adult learners cause difficulties in the allocation of teaching. The teacher faces great difficulty in planning learning situations, for example, lectures, so that they would meet the needs of everyone. For this reason, it is essential to have alternative solutions. According to Kalli (2003, 70), the core question is: How does the learner construct a meaningful knowledge and skill structure from earlier and new knowledge? In Kalli's point of view (2003, 69–70), in teaching emphasis should be placed on solution-orientation along with problem-orientation. The command of several solution alternatives likely provides the preconditions for the selection of a suitable instrument to solve a problem. Sometimes the teacher and students must develop a completely new kind of solution. In solution-oriented pedagogy, more consideration is placed on the conditions of the learner and the learning situation as well as limiting the extent of the problem. "A good learning situation steps away from pedagogy: the learner has to regain the self-confidence that what he/she wants to learn is exactly that which is intended to be learned.

An understanding of reality as it is outside of ourselves, independent of us and as it presents itself to us, is also the purpose of vocational education" (Kalli 2003, 73).

## Springing into action: From an idea to experimentation of the method

The experiment involved members from Rovaniemi University of Applied Sciences in the degree programmes in hotel and restaurant management, service production and management, and tourism as well as the adult students from a tourism degree program formed as a result of a merger in 2004. The experimental groups consisted of adult students who commenced their studies in the fall of 2003 and the fall of 2004 as well as a group of adult learners that began their studies in the fall of 2005, bringing together students in hotel and restaurant management tourism and business economics. The project was carried out in several experiments, which formed repetitive cycles.

Responses to the research questions were sought through observing activity. Planning and the course of the experiment were reflected upon from the perspective of our own actions. We hoped to receive information directly from learners with the aid of feedback questionnaires. Feedback discussions took place with groups separately with regard to content in conjunction with giving out course grades. The main questions we sought answers to were as follows: Did learning take place? What importance does the group have in learning? How did the students experience the cooperative learning method? In the text below, after each phase description, we will present the responses to the questionnaire and reflections on our actions.

In the idea phase, we tried cooperative learning as the experimental approach with one student group in a course during the fall of 2004. The group comprised 30 students who started their studies in the fall of 2003. On the basis of a plan drawn up during the winter, the method was first tentatively presented as early as the spring of 2004, at which time the students outlined starting points for a subject area that was the focus of their own investigation and interest. Immediately after the start of studies in the fall of 2004, the working habits in accordance with the method were agreed upon. During the idea phase, the purpose was to test the feasibility of the method for the subject in the course (HRM in a small to medium-sized company), and how students perceived the deficiency of their own learning within the framework of the learning objectives of the study block as well as whether they are capable of assessing their own

learning. During the idea phase, it was tested whether one's own competence need gap was fulfilled in relation to the learning objectives set for the course involved in the experiment. In practice, students possessing the same learning need formed their own group. Groups consisted of people that felt they shared the same kind or similar subject-related needs and objectives in their own learning. Awareness of learning need was guided with the aid of the following simplified phases:

1. At first, students individually sought a matter or subject they lacked knowledge of, yet which interested them or one which they considered necessary to learn with regard to the course objectives.
2. After choosing a subject, groups were formed by subject.
3. Teacher guidance helped the students in getting started with information retrieval.
4. Each group made an assessment with regard to their own objectives, which was graded with the numbers 1, 3, 5 and the status of an objective was defined for each number. The teacher helped in this task.
5. The students became familiar with the subject and possibly exchanged the contents of assignment within the group.
6. The students sent the teacher text extracts to read. In addition, the teacher had a face-to-face meeting with the students.
7. The learning situation for cooperative learning was planned and practices were agreed on.
8. Outcomes were checked during two days; those members who completed work together on one subject were considered to form a home group for that subject and in presenting the work, each member of a home group was transferred to a new group, where everyone's work was gone over by presenting and discussing it. Thus, in the new groups, there was one representative from each subject area. Everyone also received a written peer assessment of his/her oral part, in which the outcome of one's own team was covered.
9. A grade based on predefined criteria was given to oneself (student self-assessment) for the outcome of the learning assignment. The course learning objectives provided support in determining the grade.
10. Everyone gave written feedback and reflected upon his/her own learning.

No pre-testing or assessments were employed in order to define the learning need, instead students were trusted to make an assessment of their own competences and learning needs. The use of tests would have likely created more work in relation to their actual benefit. The purpose was to especially take into consideration the student's self-proclaimed area of learning that is lacking in order to guide him/her toward self-directed action. The students' own decision making and display of tacit knowledge were seen as essential elements to gain cooperation and trust.

After defining their personal learning needs, the students continued by jointly defining the objective that arose from the same subject team. In other words, the groups began clarifying the theoretical foundations for their own problems. The students considered it necessary to investigate the learning organization and developmental research methods as a support for leadership, the development of leadership theories, the day-to-day work of a manager and quality leadership.

Group size varied from three to five people. Some groups worked on the whole block of studies together and others divided the work in parts according to each person's own objectives. For example, for the learning organization, one student went through the theoretical foundations, another examined the matter from a practical perspective, the third read through earlier studies and development projects. In the next phase, they brought their work together. Additionally, each group had a different way of amassing information. Some groups agreed on a meeting, provided that it was possible due to time and travel constraints. Other groups did almost all the work without meeting. Group members used different communication tools to keep in contact, such as the mobile phone and email. At times, they sent their work to a guidance counselor to be read or met with him/her to discuss and receive advice. They had the opportunity to meet among themselves during two contact periods, at which time the guidance counselor was also present to assist in the process.

This block of study lasted for four months altogether, during which time there were 25 hours of contact lessons. In the sessions, over ten hours were used to cover the work, and in the beginning about five hours were used to get the whole project started, so approximately ten hours remained in order to work on the subjects. The work involved extensive assignments worth two study credits and averaging about 30 pages of text. The students did not intend to make an actual portfolio, unlike students in the second cycle, instead they aimed at producing an in-depth report of their subject. The work they completed was examined during two days in eight groups, four on both days. Thereafter, at their own personal rate,

everyone returned an assessment of their own learning, how well they reached their objective and a grade for their own work.

The idea phase of action is significant, because as a consequence, it was noticed that the same method could be used to start up cooperative teaching. The starting point was meeting the learning needs of adult learners and making optimum use of the time available to attain the study objectives. This phase formed the first cycle of the study, during which time the learning of new knowledge generally took place successfully. In most of the answers, the subject areas were listed that were covered during the course. For some people, the knowledge was repetition of old knowledge, but study also opened up new perspectives. Many respondents mentioned some main points that belonged to the contents. "Learning new things and gaining new perspectives was interesting, I felt that I got a good overall understanding of all the subjects." "It is important to think beforehand what is essential, important and valuable information because there is only enough room for the important things."

In addition to learning the actual subject matter, students learned how to collect information and other processing-related skills. "I learned how to use the library and search engines, I think I have become quite a good information seeker." To some degree, problems also arose. This was particularly evident when the work was examined, for the timing of getting work done did not go as well as planned. "There was a lot of information, but there was not enough time to fully grasp it by the time we were expected to present it."

Interaction with the group was considered essential in many ways. The importance of the group was examined from three perspectives: completion of the assignment, group objectives and the learning process. The group had been a source of support, but engagement in one's own assignment took all of one's attention. Each student's own way of working was reflected upon at the problem solving level. "Participating, asking questions and discussing, is also important for learning." "Group work was teamwork. We got support from team members when needed in our discussion meetings. We were able to do our work without being in the same physical space. In the group's opinion, learning was challenging and fun, even if it was also a little frustrating."

Individual success in the oral part of the work was reflected upon and the importance of feedback given by the group for learning was particularly emphasized as well as group support in managing in a presentation situation. "The oral part went well in my opinion. I didn't get nervous and my thoughts stayed on track because I had underlined the parts I thought were most important. I felt at ease and secure and it was

easy to speak with a clear focus because the others were listening intently and appeared to be genuinely interested in my subject." "It's good to get feedback from others/target audience because that is how you know how the presentation went. You cannot evaluate yourself all that easily. Other people notice better because they are on the receiving end of the matter being taught. Getting feedback is an important part of learning." "…positive feedback, it felt really good, by getting feedback from others I got self-confidence in my own abilities and that I have strong expertise in my own work, and a person who is also receptive to new perspectives. I appreciate their feedback and I believe that it was in accordance with their own views."

The teaching format was viewed positively, a refreshing change, but at the same time challenging. The independent gathering of information and its processing had exceeded expectations. This is a fundamental observation because it reveals that the student had defined the objective for him-/herself. "As a form of study, this was excellent, getting a lot of information in a short period of time. Each group member has to familiarize him-/herself with the subject and explain it to others." "The way this course was conducted requires more effort than simply studying at home or listening to a lecture. It's not enough to get to know the subject matter, instead the whole group has to reach a common view of it, which is presented to fellow students in clearly organized parts, which each person can place in the framework of the whole block of study."

Some wishes for change and development were presented with regard to the size and the assignments and the allotted time to complete them. The importance of feedback was also strongly emphasized. From the answers, the importance of taking one's own responsibility in limiting the workload of assignments was apparent as well as mentioning the traits of self-directed learning. "When giving out assignments it is important to remind students of the importance of time spent working collaboratively because understanding the text another person has produced is not always a given." "We could have probably limited the subject more. When giving out the subject, knowing the extent to which the subject is to be covered would have helped."

Assessment of the learning assignments was completed together using both students' self-assessment and teachers' assessments. The assessments given by both students and teachers were similar, with the exception of the assessments of a few students, whose assessments in fact only differed by one number grade. From the teacher's point of view, assessing work in this way was successful and the students' own possibilities to influence outcomes is generally a motivating factor in study. There was still some

doubt with regard to the knowledge foundation the students receive, in other words, did they fulfill the course objectives in terms of the block of study. If this is unclear, one way to check it is with a traditional exam. It does not have to be an extensive exam, but it would provide an overall picture of what students learned about the subject areas of others. Almost everyone was of the opinion that one's own subject area was internalized well, including the overall objective of one's own group.

In order to plan the second cycle, we received tips on the importance of limiting the size of the subject matter to be covered and development of information security methods. The importance of group- and peer support was noteworthy, which gave further impetus to continue the experiment in cooperative learning.

### Cooperative teaching as the objective in the second cycle

Continuation of the idea phase, stemming from the benefits of cooperative learning, initiated a genuine action research study, including setting its objectives. Therefore, in the second cycle of the study the experiment was expanded on the basis of the experiences gained in the fall of 2004 with a group of approximately 30 students. The contents of two courses were united in such a manner that the course on working in an organization was combined with another course on communication. Likewise, cooperative teaching between two teachers was experimented. The students combined their assignments into portfolios, which were presented in a seminar. The experiment in cooperative teaching continued with the group by adding on studies in corporate communication, human resource management and organizational leadership in the third cycle.

In the second cycle, the purpose was mainly to alter the study block and the method so that they could be implemented with cooperative teaching. By comparing the objectives of the courses involved in cooperative teaching, *Working in an Organization* and *Communication*, we tried to find common areas as well as assuring that there are grounds for establishing a joint course based on two courses. We sought a common perspective as concrete as possible. In the planning of the cooperative teaching experiment, we took the timeframe into consideration, making sure that both courses took place in the same period. In accordance with the curriculum, each course in the experiment was worth 2 credits. The curriculum and contracts guiding the organization's operations define the basic resources for organizing instruction. Contact teaching was approximately 20 hours and the share of independent study was close to 40 hours for each course in the block of studies.

In the beginning of the course, we covered the guidelines, and the teachers offered support when the groups defined their objectives. In the contact hours of the course, both teachers approached the common objective of the two courses through the subject matter they teach and by explaining how it links to the other course in the study block. The assignments and the course guidelines were gathered together into one joint newsletter. Part of the lessons was taught together with both teachers present and the work for different groups was given guidance at the same time. When needed, the teachers supplemented further understanding of the study block by giving short lectures. The topics to be covered cooperatively arose from the students' own needs, which were interaction as a team member, teamwork and negotiation, induction in an organization, documents for study and the workplace as well as communication in an operative job from a manager's perspective.

One added element to earlier courses was presenting one's work in portfolio format instead of the earlier report-like format. Furthermore, students presented their portfolios to the whole group in addition to the oral presentations they gave in small groups. Both teachers were present when the work was presented and they gave feedback. After the course ended, in groups the students completed self-assessments of their own learning in relation to the set objectives. An exception to the idea phase was that the learning objectives covered a broader area, thus in accordance with the course objectives, students had to study other things, mainly communication concepts and theoretical foundations in order to receive a grade for the study block. The grade received from the course in the cycle consisted of the course objectives outlined in the curriculum. These objectives were defined beforehand when the curriculum was being made. The grade for the course *Communication* was the average of the following: compiling a portfolio and its contents, self-assessment of the course and a communication essay. The grade for the course *Working in an Organization* was given on the basis of the portfolio content grade. The second cycle involved development of the method and reaching the objectives of the curriculum. In this second phase, we had to give less consideration to the objectives the students had defined beforehand because they were relatively narrow and unjustified on the part of some groups. Therefore, the students' own share of the assessment was mainly assessment of the final outcome.

A feedback questionnaire was made for the second cycle course, which was distributed to the whole group approximately three months after the assignments were returned. This approach was chosen because we wanted to get information on the feasibility of the information used in teaching in

order to support other courses. The responses of the group were narrow, simply stating the facts with little contemplation. However, some reflection was evident, especially in matters that stirred emotions.

Some content concerning learning was brought up, with some people comparing the outcome with the set objectives. "The matters in our own group were clarified really well even though the subject was divided into so many parts. In my opinion, we reached our objective." "It really takes a lot of one's own time. I didn't reach the objectives we set for ourselves in the beginning of the course." According to this group, an increase in information gathering skills and independent processing of information were clear outcomes. "By gathering, researching and familiarizing oneself with information, it is better remembered." "I think I learned a lot. I learned how to be critical enough, but flexible at the same time."

The importance of the group in terms of learning was narrowly treated, but in many responses working in a group was considered to be ridden with problems. "It was tough. Everyone had a different understanding of the whole assignment, how to do it and how it should be." "… I learned the most from others' presentations, when noticing 'mistakes' in their presentations…" "… group support was important!" Some comments were raised concerning the share of oral assignments and the importance of the group: "I did pretty good judging from the feedback of others."

An interesting observation about reflection and the results from studying were given in a response from a student who offered some thoughts on the influence of the learning assignments in future assignments. "Better than expected. As the semester continued, oral presentations have become a lot easier." "I received positive feedback, I presented the subject clearly and understandably." In general, students felt getting feedback was important and increased learning. "Feedback is extremely important, because everyone views matters in different ways. Some things come up that you haven't thought about at all yourself."

On the basis of feedback given by the second group, there was room for improvement in how the study block was organized. The course contents and the idea of cooperative teaching in and of themselves were considered interesting, but it was problematic to work with such conditions. The reasons were the overabundance of subjects, varying group sizes and insufficient intsructions. "Very interesting (as an idea). However, the timing was a little bad because we had just started school and everything was new. At first, the work seemed really difficult but (positively) challenging." "It requires a lot of work during your own time. I didn't reach the objectives we set for ourselves in the beginning of the course." "Maybe now would be a better time, we would know each other better, we would know how

each one works." Many suggestions for things to change for the next course were given. "I would start the course later, after study habits have set in." "The start could have been clearer, everyone didn't understand the assignment, but otherwise it was a pretty clear concept."

In the students' responses, focus was placed on the external process, how the assignment was to be completed and successful completion of the assignment. The responses of the first group were mainly coherent texts, in which multifaceted views related to the course on the whole were mentioned. In itself, this information is valuable because it helps to develop the learning method further. Reflection cannot be separated from the learning method, but unfortunately it was not a primary starting point when planning the study block. Therefore, the planning of the study block can be considered deficient in this respect. On a positive note, it can be noted that the first group reached the objectives set for the studies.

It also became apparent that neither group had reflected much on the learning of the actual content to be studied. It was the essential objective, which was not reached successfully in accordance with the set objectives. In this case, it is important to take into consideration that the first group was not separately instructed to focus on reflection. We believe that the benefits of this teaching approach come later on, and students also notice them, as well as the related learning process. In order to clarify this matter, it would have been necessary to make another feedback form, which eventually never took place. On the basis of the open discussions with students, we came to the conclusion that another feedback form would not lead to the desired outcome. Therefore, reflection on the teachers' further planning was made on the basis of information available at that time and the feedback given by the groups, which required that teachers gave a thorough re-assessment of their own actions before the start of the next phase.

In both learning situations, the schedule was considered to be too tight, especially in the idea phase when presenting the assignments, which requires a large amount of time. For the future, this fact is of upmost importance already in the beginning of the course, as well as more clearly limiting the extent to which the subject is to be studied. Another problem area was group size and member absences, which were more pronounced during the second cycle. Since the courses were placed at the beginning of the students' studies, many problems arose because group formation was still midway. This fact should have been taken into consideration more seriously as it is characteristics of adult learners that true learning, which includes a change in thinking and behaving, takes place slowly (Malinen 2004, 74). In this case, the first cycle (i.e., idea phase) the behavior of

the groups in cooperation and cooperative learning was more successful because they knew each other better and had already internalized the demands of studying in a group.

### Online teaching offers support in guiding students in the third and fourth cycles

In the third cycle, the courses *Human Resource Management* and *Leadership* were joined with the course *Corporate Communication* in a format for cooperative teaching starting in the beginning of the year 2006. The group was the same as in the earlier experiment. The experiment took place in the students' second year of studies. In planning the work, the feedback received from earlier phases was taken into consideration. Consequently, the online learning platform Optima was employed to support student guidance by increasing interaction and offering more possibilities for guidance. The instructions for assignment completion were described more carefully in writing and how they were to be completed and other possibilities for completion were discussed. The students formed groups on the basis of common objectives that they felt were meaningful in terms of their needs. Two students carried out the work individually, but the others formed 2–4 person groups.

The outcome of the study block was portfolios in which students examined the HRM and corporate communication of case companies. The portfolio contents comprised report-like text and correspondence exercises as well as meeting documents. In order to assure that the subject matter was learned, an online exam was arranged. The teachers taught in lecture format, but the assignments were common to all. The students used the Optima learning platform to exchange information about the case companies. There was a discussion board for peer feedback and mutual support. The students posted the portfolios compiled in groups onto the learning platform so that everyone else could see them in preparation for the online exam. At the end of the course there was an oral feedback discussion for every group, as well as agreeing on making additions to the portfolio if applicable. The outcomes of the feedback were varied in scope. Those students who had enough time to engage in the study block felt satisfied with their work, but most students felt that the online format hampered their ability to work. The merger of two courses was considered overly demanding with respect to the allotted time.

The teachers' own reflection on their work revealed the importance of how the courses are started. It is essential that learners know the re-

quirements of the assignments in as much detail and concretely as possible. As the amount of contact teaching for adult students is 16 hours for 3 credits, the importance of guidance increases if a student is unable to participate in the contact lessons. Use of the online platform and peer support was meant to assist the learner, and in fact much online discussion took place, but in most situations more teacher support and contact lessons were desired. Getting started caused difficulties due to the use of the online platform. On the basis of several comments gathered from the discussion board, we can nonetheless conclude that the group interacted and gave each other peer support. "Hey! Does this work after all and do I already really know how to use this discussion board feature? – Wake up and start working because soon it has to be done!" "I finally dared to come online and I should…" "Are you in any group? The idea is that we do this thing together in a group."

The fourth cycle started in April 2006 and it included the same combined courses as in the second cycle, that is, *Working in an Organization* and *Communication*. In planning this cycle, the feedback and assessment of the earlier phases were taken into consideration as carefully as possible. It started by planning online guidance and the contact period, in which we covered the method and objectives as well as the basic contents of the course. Students started their work in the beginning of May 2006 by defining their own objectives and forming groups. More emphasis was placed on making the guidance closer and more supportive of the students' objectives. On the basis of tentative inspection of the findings, the students seem to have internalized the study objective and method. "About pre-assessment… in my opinion, first our common objective has to be made clear. We want to complete a comprehensive presentation on work motivation, which also gives motivation for our studies." "Our objective has to be consistent within the group and all of us have to commit ourselves to reaching it, we are here for each other, giving support and our opinions. Another one of our objectives is to improve our interpersonal communication skills and to bear responsibility. All the while, it is important to remember to give feedback, offer encouragement and give useful tips to one another."

In this phase, online guidance is in a more important position than before as the contact lessons are held in another place. In order to offer support, a platform of the method was constructed mainly so that students could start working on their portfolios and to initiate group interaction. On the basis of our current knowledge, it appears that the starting points and assignment outline have gotten off to a smooth start and students have actively started the process. The students' activity level in the starting phase

is portrayed by their enthusiasm toward the subject matter and setting their own objectives. "I think the most important thing in reaching the objectives is that the whole process has developed one's own knowledge and skills as well as giving us new perspectives on work motivation. We learned how to combine and make use of theoretical concepts and models in our presentation so that we would more deeply understand the factors influencing work motivation. In addition, the means with which we can develop and maintain our own work/study motivation became clearer.

Analysis of the third and fourth cycles is still incomplete and the final results will not be available until the autumn, for the courses involved in the experiment were placed along with the students' other courses in the period of May-June 2006. Therefore, the current situation is incomplete and requires further analysis.

## Implications of the experiment

The purpose of our experiment was to clarify how we could support and promote the reflective skills, self-direction and the ability to formulate personal learning objectives of adult learners with pedagogical measures to obtain optimal learning outcomes. Our tentative results indicate that more time is needed to develop reflective skills.

The development of critical reflection as a cognitive skill, referring to Kalli's (2003, 67) studies, is a rather multiphase process from childhood to adulthood. In many models on the reflective learning process, one common core aspect is re-enactment of experience, listening to the related emotions and re-assessment of the experience (Tornberg 1994, 107; Boud et al. 1985, 20–34). Mezirow (1991) delineates three different levels of reflection: 1) content reflection, which is actual thinking about the experience, 2) process reflection, which is consideration of problem solving strategies and, 3) premise reflection, which are the prevailing social assumptions, beliefs and value judgments related to the problem. Accordingly, it is only at the third level that leads to new learning (Ruohotie & Honka 2002, 269–271; 2003, 40). According to Ruohotie (2003, 76), reflection of what is learned and what should be learned in the future can build bridges between work and learning and support learning during work.

Evidence of this reflection appeared after the third cycle in the feedback discussions when a student wanted to complete the exercises on personally defined needs for an actual company. On the other hand, students made references to the fact that time is needed to reflect upon the

studied subjects to form a bond, and for their meaning to become clear. Exercises completed in haste remain detached and reflection on problem solving skills is only introductory: "We just got started" "We barely got it done." The significance of feedback and guidance especially proved to be preconditions for deep learning results. The placement of the learning event at a suitable time also appears to have decisive implications for reaching an outcome of high quality.

In the problem-based pedagogy presented by Kalli (2003), learning is viewed as a process in which progress is made in various phases. Accordingly, these phases are the diagnostic phase, the direct- and indirect support phases and the critical reflection phase. With reference to the aforementioned and several other studies, in our cooperative teaching and cooperative learning experiment the same features can be observed as in Kalli's problem-based pedagogy. The experiment started intuitively, but through further understanding of Kalli's method, grounds were found for developing the final phase of the experiment in particular as well as more focused development of the teacher's work toward supporting a self-directed learner on his/her personal study path in accordance with a solution-based pedagogical approach. The phases in solution-based pedagogy are presented phase by phase in simplified form accompanied by the students' presentation phase of their work (Table 1), which as such was not presented in Kalli's approach. The table is intended to aid conceptualization of the overall process and the significance of presenting the work. The table can be used as a template, for example, which will offer support for students as online material or in the examination and analysis of their activity. The phasing of the model can be built around a subject area, for instance, work motivation or the foundations of communication, thus to reflect on actions from both the teacher and student perspective as well as to conceptualize activity within the framework of different subject areas.

On the basis of the results of the experiment, when studying in extensive blocks of study it is necessary to limit the different sub-areas into their essential parts in order to facilitate profound acquisition. The guidance counselor's support, particularly in the beginning of studies, is needed for joining different parts or cycles. Additionally, it can be concluded that the adult who starts up studies is seeking added value for his/her own work and competence from education and learning. According to the findings, it can be tentatively proposed that the adult learner is able to individually define his/her own learning needs quite well. Curriculum planners should be able to meet this need by supporting the student with purposeful pedagogical measures in order to obtain the

best possible learning outcomes. By employing cooperative teaching, the personalization of teaching can be promoted because simultaneously offering several perspectives for examination gives students the possibility to conceptualize different frameworks. Teachers are expected to possess deep understanding of the contents of different courses, commitment to common methods and timetables, flexibility and patience.

Cooperative teaching brings transparency and openness to the work of teachers as well as giving the strength and courage to experiment with new operating models. Co-teaching with another person offers encouragement as well as someone with whom to discuss and share responsibility. The teacher's work is transformed to that of a guidance counselor and coach, in which deep satisfaction comes from the opportunity to support a student on the study path of his/her choice toward a personal objective.

| PHASE | ACTIVITY OF STUDENTS | ACTIVITY OF TEACHER |
|---|---|---|
| Diagnostic phase | Defining starting points and setting individual objectives. (Cf. description of the process, parts 1 and 2.) | Clear and thorough instructions and support in individual definition of learning needs and in starting work in groups. |
| Direct support phase | Contact teaching. Group work. Setting common group objective and defining assessment criteria (Cf. description of the process, parts 3 and 4.) | Support in setting objectives and in predefining assessment. (Defining assessment criteria for numerical assessment in relation to learning objectives.) |
| Indirect support phase | Becoming familiar with and compiling the work for the subject matter under examination. Interviews, for example, can be used as a means of support. (Cf. description of the process, parts 5 and 6.) | Group backup support, advising, assistance in gathering and processing information. (E.g., online guidance, discussion with students, searching for different alternatives in problem solving or reaching an objective.) |
| Presentation of group work | Presenting work in an agreed method, for example, portfolio presentation or a group learning situation. Groups present all their work to all members of other groups. (Cf. description of the process, parts 7 and 8.) | Assuring that every group presents their work and learning experiences and facilitating a comprehensive learning process for everyone in accordance with the course objectives. |
| Critical reflection phase | Students give themselves a numerical grade including justification, which covers the originally set objectives and assessment criteria. Reflection on the learning process and learning both in a group and as an individual student. (Cf. description of the process, parts 9 and 10.) | Students' assessment of learning (written feedback, which can also be, along with a numerical grade, a pass/fail, it is also possible to give oral or written feedback) and giving feedback as well as receiving feedback from students. Assessment criteria are set beforehand in accordance with the course, which are examined together with the students. |

Table 1. The processes of solution-based pedagogy according to Kalli (2003) and the correspondences of the different phases in the cooperative teaching experiment between students and teachers in each phase.

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# 5
# Developing Collaborative Writing

*Liisa Vanhanen-Nuutinen*

Writing has taken on greater importance for teachers in universities of applied sciences. This situation is a consequence of the development of information technology as well as the increase in large projects, along with planning and development tasks. Teachers also communicate between themselves and increasingly with students through the medium of writing than verbally (Auvinen 2004). However, teachers' command of pedagogical writing-, scientific writing- or project reporting genres is not sufficient to meet the new challenges of writing that UAS teachers face in development projects for universities of applied sciences and the employment sector (Lambert & Vanhanen-Nuutinen 2005).

Project networks have become more widespread and thus have increased the need for teachers, students and partners from the employment sector to work together (Suntio & Konkola 2003). As a result, collaborative writing is also becoming more commonplace in universities of applied sciences. Through collaborative writing, teachers, students and partners from the employment sector have the opportunity to make visible the jointly produced activities and newly learned knowledge from development projects (Ahonen, Ora-Hyytiäinen & Silvennoinen 2005).

In academic research, collaborative writing is very common, but traditions differ greatly depending on the field. Nowadays, upwards of 85 percent of scientific publications are written collaboratively (Cronin 2004). On the other hand, in the humanities emphasis continues to be placed on independently written publications, even though extensive research is no longer possible without a research team (Hakkarainen 2003). Collaborative writing has been studied and tools that promote it have been developed as multidisciplinary collaboration has become more common. Especially toward the end of the 1980s and the 1990s, collaborative writing tools have been developed and their functionality has been evaluated. There has also been discussion concerning redefinition of scientific publication authors. In fact, some scientific journals have switched over to the practice in which those persons who have participated in the writing of an arti-

cle and their contribution of the publication is named instead of simply naming the writers (Risteli & Saarnilehto 2000, Risteli 2001).

Writing a publication in a group is visible collaborative writing, but collaborative writing can be understood in a broader sense, as the community's influence on the development of the topic to be written and the writer's expertise as well as the actual text. Even if one writer produces a text independently, it is the result of many different people and communities such as the research team, work- and research communities (Cronin 2004, Hakkarainen 2003). Kai Hakkarainen (2003) has analyzed the phenomenon from the perspective of collective expertise. Accordingly, participation in a community activity increases the individual's intellectual resources. When a community supports the individual's development, he/she can exceed personal limitations and accomplish something that would not be possible without the community. Joint publications should represent the learning outcome of a complex culture, which should be appreciated in the scientific community, according to Hakkarainen.

Collaborative writing can be approached from different perspectives. It can be examined as a writing strategy, but also as a theoretical and methodological question. In this article, I will examine collaborative writing in the work of a UAS teacher: What is the form of collaboration in which UAS teachers write and how do they develop collaborative writing in their work community? I will present answers to these questions based on experiences received from the training program entitled "From Project to Publication" organized in Helia School of Teacher Education (Helia AOKK) during the years 2004 – 2005. The training program was intended as continuing education for UAS teachers.

## Collaborative writing strategies

Collaborative writing can be described as a process that requires preparation, structured collaboration and termination of the writing process. In preparation for collaborative writing, the writing objectives are set, the formation of the writing group is agreed upon, suitable writing tools are selected and then the writing begins. Collaborative writing is well-planned work that includes agreeing upon teamwork tasks, planning teamwork, producing documents and compiling the written work. A document written collaboratively is saved and distributed as agreed, the writing process is evaluated and a plan for further collaboration is made (Lowry et al. 2004).

Paul B. Lowry, Aaron Curtis and Michelle R. Lowry (2004) have classified collaborative writing strategies as follows: group single-author writing, sequential single writing, parallel writing and reactive writing. In group single-author writing, one person writes on behalf of the whole group. In sequential single writing, each author writes his/her own share of the text, after which it is given to the other members of the group to be worked on. In parallel writing, every author has his/her own defined area of responsibility. In this manner, the text is either divided into areas of responsibility or the role of the group members are divided so that one person is responsible for the writing, one for editing and one for evaluation. In parallel writing, the division of work can take place horizontally or sequentially. In reactive writing, the authors work simultaneously and adapt their share of the writing in response to the work of the others.

Group single-author writing is effective and assures that the style of the text is uniform throughout. The shortcoming in this kind of writing is that the text does not necessarily represent the views of the whole group. Sequential collaborative writing is easy to organize, but the writing might become ineffective and "falls apart" if one author has differing opinions. Effectiveness is the hallmark of parallel writing. However, authors can become blind to each other's texts, and different writing styles are not easy to remove from the text. Reactive writing promotes creativity and the building of common understanding, but it can also be difficult to organize, and most writing programs do not make this kind of writing possible (Lowry et al. 2004).

By modelling collaborative writing strategies, computer programs or work environments have been developed, with which collaborative writing can be more effectively executed. A limited view of collaboration in creative activity has been reported as a problem common to most programs, such as in writing (van Waes 2004). One example of collaborative writing online is a wiki. Hundreds of people can take part in writing the online dictionary. In online collaborative writing, negotiation skills take on greater importance because collaboration always involves a question of power, responsibility and conflict resolution in the interaction between authors, the writing strategy and the contents of the writing (www.falcon.tamucc.edu/wiki/WikiArticle/WikiAsAWritingTool).

Participation in joint publications requires that all authors take responsibility for the content of the publication. Participants in the joint publication should take part in the planning and execution of research, data collection, analysis and interpretation, writing, coordination of the research or giving advice and support throughout the whole process.

## Collaborative writing in universities of applied sciences

### The "From Project to Publication" Training Program

The "From Project to Publication" training program organized at Helia AOKK was based on the view of writing as a collective, targeted and multi-voiced activity (Lambert & Vanhanen-Nuutinen 2005). The starting point was that in UAS R&D projects, the writing genre, which is used in collaboration with people and tools, is developed, reformulated and adopted (cf. Spinuzzi 2003, R. Engeström 2001). Texts mediate human activity and its historical development. In fact, writing is examined in conjunction with activity such that the single author is part of the activity system (Russell 1997, Russell & Yanez 2003). The genre of writing includes both what and how to write as well as why and whom to write. Teachers were thus producing something new in the writing genre for universities of applied sciences.

In the "From Project to Publication" training program, teachers wrote an article or report and analyzed their writing and its conditions within the activity system of the university of applied sciences. Texts and analyses of activity systems written by teachers as well as the tensions that arose in them were examined in the writing seminars, where the group gathered approximately once a month for one year. The results of the analyses of activity systems have been presented in the article "Developing the writing genre in the university of applied sciences" (Lambert & Vanhanen-Nuutinen 2005). For the final assignment in the training program, teachers analyzed the phases of writing and assessed their writing as authors. In addition, I interviewed the group that participated in the training program who wrote the article collaboratively. The group included a representative from the employment sector and two teachers, one of whom was responsible for the research and the other for instruction in the joint project between the university of applied sciences and the employment sector. The interview was transliterated for research purposes.

I analyzed the final assignments of the training program and the interview with the aid of the following questions: In what form of collaboration do UAS teachers write? How do UAS teachers develop collaborative writing in their organization?

I present the results of the analysis with excerpts from the assessments and interviews of the aforementioned teachers. Interview excerpts are presented in italics in the text. The teachers that participated in the training program and the interviewed group have given written permission to use the data in the study.

The development of collaborative writing is part of the research of the writing genre in universities of applied sciences and the development project "The development of work functions in the collaborative network between the university of applied sciences and the employment sector" (Lambert & Nuutinen 2004).

## The UAS teacher as a collaborative writer

The UAS teachers who took part in the course "From Project to Publication" mainly wrote alone (Lambert & Vanhanen-Nuutinen 2005), but also in a different form of collaboration. I have named these collaboration-based ways to write, which arose from the training data, as "alone in collaboration-" and "collaborative" writing.

The teachers' "alone in collaboration" writing consisted of using different texts produced elsewhere, for example, in a project group or as assignments given to students, which served as the starting points for writing. On the basis of the students' assignments, the teachers wrote such that they either produced the theory part from the students' theses for the joint publication or they worked on their own publication, for example, an article based on the assignments completed by students. An example of the division of work between a teacher and students in the writing of the joint publication is represented by the following citation from the course "From Project to Publication":

> Writing takes place with the students, another teacher also possibly participates in the project. …the collection of articles consists of the theses of stylist students. In order to support them, a light theoretical basis was needed, which led into the topic while at the same time deepening the importance of dressing up and outward appearance. As the counselor, I will write the theoretical part.

The teacher might have also used the assignments produced by the students as data, from which in deepening the analysis he/she extracted new information and wrote an article. In the following citation, the teacher explains the way of working:

> The students have written the "rough drafts" for the reports, to which I have also added supplementary parts, made corrections and deepened the analysis. I have constructed the empirical part of the article on the basis of these reports. However, writing has not been an interactive process. I assume that collaborative writing would slow down the process but would improve the level of quality.

The same type of writing based on other texts was also executed in projects. The teacher who was responsible for reporting wrote about the project on

the basis of different documents. The teacher assembled the otherwise disjointed written data produced in the project into project reports:

> My writing has been largely based on the text first outlined by others. For example, to write the yearly reports I have received information and also direct pieces of text from many people who took part in the project. I have freely rewritten the pieces of writing and have received some feedback from the people who gave me information. This has guided my writing forward. I have also received comments from my colleagues on the texts that I wrote.

The teachers' collaborative writing involved pairs of teachers writing together or writing together with a group. In this kind of collaborative writing, the nature of the writing process was at the core. Collaborative writing was described as an intensive process that develops the participants. Writing in teacher pairs was carried out in close collaboration in which the text was produced through joint reflection:

> We write in pairs. This kind of writing takes time because we reflect on the text together. On the other hand, collaborative writing serves communal learning and improves the quality of the text, provided that the same theoretical perspective guides both writers.

A new, collaborative writing group distinct from others consisted of a team with a teacher, a representative from the employment sector and a research teacher. This group described its collaborative writing as a negotiation- and learning process in which the object of collaborative writing is constructed. The following is an example from the interview data:

> **Research teacher:** In a sense each person presents his/her own ideas and we test them out together, considering whether this can actually be like this? Then we either reject or accept it, but in my opinion it also requires that everyone has the courage to say what they think. Then we try it out to see what fits, and that's it, because I think that it cannot work if everyone doesn't give their opinion, because only then are we really creating something new that nobody had when they joined the team. None of us had that which is created here.
>
> **Teacher:** In a way, the thought becomes clearer in my opinion when thinking about collaborative writing, and the thought becomes more defined and clear as we explain it to each other. It's like in a way we have slightly different perspectives, and that's when we definitely explain our opinions to each other. A spiral would best picture how our thinking evolves.
>
> **Representative from the employment sector:** My writing experience has been pretty limited, just writing and being involved in this kind of process, I think I learn. …and then there is the role, sometimes I feel that we're talking about it like "hello, let's get back to reality" when (referring to the research teacher) the teacher is like somewhere in the clouds. Then on the other hand, if you write the article with a nurse, then you have to try to stuff some theory in there somewhere, so it's like some different kind of role. But somehow I think that I'm personally developing in doing this.

Collaborative writing was viewed as a project as well as a means to develop writing skills for writers. One of the group members later evaluated the process in the following way:

> Through collaborative writing, I have experienced a lot of personal growth because earlier I have never taken part in such an activity. Personally for me, collaborative writing was a very valuable experience because the group came up with new ideas to carry the project forward. The work was also always on an equal level in my opinion, the opinions of all the group members were heard. What really enriched our writing was that our group had representation from the employment sector as well as two different scientific viewpoints from the university of applied sciences.

In "alone in collaboration" writing, there are overlapping parts with the definition of group single-author writing by Lowry et al. (2004). The teacher wrote on behalf of some group either a theoretical part for a joint report or compiled a project report on the basis of texts produced by others. This kind of teacher who writes can be compared to a "professional writer," who produces texts according to an agreed format and purpose. However, this form of collaborative writing easily only produces texts written from the teacher's perspective.

Linking the writing of R&D projects to teaching by taking advantage of students' project-related assignments and theses (e.g., Suntio 2005) is one opportunity to promote writing in and about projects. The importance of writing broadens when assignments are used for application in the employment sector, thereby having an impact on the development of activities at the workplace (Lambert, Reunanen & Helle 2005). If a teacher writes an article or report from students' assignments, he/she should also take into consideration the students' rights about what they have written and make this clearly visible in the publication.

The collaborative writing strategies that teachers used resemble the parallel writing and reactive writing strategies described by Lowry et al. (2004). In this instance, collaborative writing was agreed upon and well planned. In the teachers' opinion, lack of time was a concrete obstacle for this kind of collaborative writing.

In the group in which there are representatives from various fields and organizations, in addition to the question of constructing an object of collaborative writing, it is the compatibility of different writing cultures. From the perspective of learning, they offer opportunities, as the teacher stated in the data example. In writing that crosses the boundaries between the school and the workplace, new learning can be produced that is "something big," as one of the teachers mentioned.

## Developing collaborative writing in universities of applied sciences

Collaborative writing can be promoted in many ways in universities of applied sciences. The UAS teachers that participated in the course "From Project to Publication" took initiative and developed working habits that promoted collaborative writing and the learning of writing in one's own project and university of applied sciences. Teachers organized discussion sessions in which they gathered together people conducting research and UAS representatives carrying out projects. They also established collaborative writing groups.

> In our university of applied sciences, we have held meetings with our continuing education students and project members, where we have had open discussions about the criteria, motives and even the difficulty of conducting science.

> For the publication of project X, I have gathered together a group of experts to write collaboratively. The group included one principal lecturer, 5 teachers and representatives from the employment sector.

> A new kind of culture is spreading in writing partnerships. In my community several article projects are in progress. The article is written in different combinations, in four different combinations altogether (teacher-teacher group, teacher-teacher student pair, teacher-teacher business partner group and teacher alone). Writing with students has yet to be tested.

Teachers actively tried to influence the writing practices in their universities of applied sciences. They wrote initiatives, of which one example is the initiative of a teacher to revise the publication series in an university of applied sciences:

> On the basis of input received at the end of the course "From Project to Publication," I made a presentation on the publication strategy and development of publishing activities at my own university of applied sciences. The presentation was meant for the director of development at the university of applied sciences, and its purpose was to start up concrete procedures to improve the aforementioned issues.

In the writing seminars during the course "From Project to Publication," every participant's text was covered two times, in the planning and manuscript phase. In addition, the teachers also took advantage of the writings of other experts and peer groups in order to develop their own writing.

> The members of the continuing studies seminar group as well as the opponent gave feedback on my writing.

> I have commissioned proofreaders and have had many discussions with them. Some of the readers are from my own university of applied sciences, another group is from companies and one reader is from the university.

> My most valuable learning experience was that alone, one cannot accomplish anything; instead there is power in collaborating. From now on, I will invite a collaborative partner and I will consult different fields in order to get new perspectives for my writing.

Writing for R&D was discussed on both the informal and formal context:

> I have given my texts to my colleagues to be read and have had discussions over coffee about these matters. In our internal training sessions at our university of applied sciences, I have taken the stand to talk about the matter.

Additionally, teachers developed materials that promote writing for their teaching:

> I have made materials that promote writing. For research methods in instruction, I have introduced writing-related assignments.

The transfer from writing alone to writing collaboratively was carried out in many ways: by participating in collaborative writing, by taking one's own incomplete texts as an object of a joint discussion and by taking up the topic of writing in the work organization. The writing groups formed by teachers were built around projects at universities of applied sciences, in which case they had representatives from teachers, students and the employment sector. The forums and groups made by teachers were the result of their personal contacts and their research interests that crossed organizational lines. They were the seeds of unofficial networks based on trust between participants (cf. Helakorpi 2005, Kantola et al. 2006). In the course "From Project to Publication," teachers were encouraged to act as change agents in their universities of applied sciences. The course participants and teachers acted as an expert group in which representatives from different fields together developed the writing genre in the university of applied sciences and then continued the development within their own organizations. It can be said that the interventionist mode of operating in the course initiated the learning, which led to new experiments (Lambert & Vanhanen-Nuutinen 2005).

## From collaborative writing to writing in collaboration with the employment sector

The teachers' collaborative writing groups and writing networks can produce expertise for horizontal and vertical development in universities of applied sciences. Development can manifest itself as learning by students and broadening and deepening of competence by teachers, but also as new kinds of relationships between actors (cf. Hakkarainen & Paavola 2006). Outi Ahonen, Elina Ora-Hyytiäinen and Pirjo Silvennoinen (2005) have stated in their article that collaborative writing between employment sector representatives, students and UAS teachers offers the possibility for universities of applied sciences to promote regional development. Additionally, it offers new learning opportunities for all parties involved and it gives teachers the opportunity to become familiar with the requirements of the employment sector. Collaborative writing can, according to Ahonen et al., serve as one solution to integrate teaching, research and regional development in the work of teachers (cf. Vuorijärvi 2005).

Ahonen et al. (2005) base their perspectives of the collaborative writing process on knowledge, time and context-specific information and tacit knowledge. The collaborative writing environment is formed by the community of the university of applied sciences as a work and study community and the development activity of the employment sector. They describe the process of collaborative writing through five phases: narration, listening, individual comprehension and communal comprehension, knowledge construction and writing. Participants bring their own perspectives in writing: the student brings knowledge that is still in the process of development about work, work processes and the environment, the teacher brings theoretical and researched information concerning work and work processes, and the employment sector representative brings information concerning work processes and the environment. The final outcome is a written text for an audience.

Collaborative writing is a theoretical-methodological question in how writing is to be understood; is it the transfer of matters to paper or a content-producing process (Jokinen & Juhila 2003)? Arja Jokinen and Kirsi Juhila (2003) base their view of collaborative writing on social constructivism and discourse theory and emphasize the character of language to construct social reality and sense-making in social interaction. Accordingly, the foundation of collaborative writing is in discussions and in the close interaction between writers that give rise to texts. In their own collaborative writing analysis, Ahonen et al. (2005) also refer to this kind of social interaction and communal knowledge construction. Col-

laborative writing requires and includes collaborative learning, which is made visible through writing.

Traditionally, writing has had a different role in education compared to work. At work, written text has an instrumental task in order to accomplish a certain activity. In school, texts are generally viewed as products and outcomes in and of themselves. They are also generally intended for a certain, limited group of readers. For instance, a student's assignment is written for the teacher (Dias et al. 1999, Ketter & Hunter 2003). The writing conventions learned at school are not as such applicable to the workplace, neither can texts written in school necessarily be used at work. This applies to both writing by students and teachers, even if teachers have command of broad genre repertoires (Lambert, Reunanen & Helle 2005, Helle 2005).

The challenges of collaborative writing in universities of applied sciences arise from writing in groups in which there are representatives from both school and work organizations, that is, writing in collaboration with the employment sector. Writing in collaboration with the employment sector gives the possibility to produce knowledge for practical applications as well as the opportunity for close interaction with teachers, students and employees who act as researchers and developers. Examined from the activity theory framework, writing in collaboration with the employment sector in universities of applied sciences is writing in the border zone between school and workplaces. Written texts can serve as instruments to cross the border (that is, "border objects") between the university of applied sciences and the employment sector, with which the need for change is justified, operations are modified or a new mode of operating is made implemented (Konkola 2003, Lambert, Reunanen & Helle 2005). According to Pirjo Lambert, Raija Reunanen and Merja Helle (2005), these kinds of texts can be used as tools in developing, for example, guidebooks and theoretical texts that justify the need for changing operating modes. The aforementioned examples or expert articles can also be alternatives to traditional theses (Salo, Söderqvist & Toikka 2004, Helle 2005, Vuorijärvi 2005, Lambert et al. 2005). The broad genre repertoire of writing, as Merja Helle (2005) suggests, could be a thesis and a means for writing to promote development in the workplace and to produce developmental transfer.

Joan Ketter and Joan Hunter (2003) describe a piece of writing on identity that takes place at the border between two different operating cultures from the writer's perspective, in which the writer is continually forced to renegotiate and redefine her identity as a writer. What does this mean in a collaborative writing group that represents the activity built

around the border zone between the school and work? How do writing genres derived from different operating systems blend together in collaborative writing to form a new genre? In writing in the border zone between school and work, questions arise such as how is the joint object of writing constructed, what kinds of collaborative tools are developed for and used in collaborative writing as well as how does collaborative writing promote the developmental transfer between schools and workplaces (Vanhanen-Nuutinen 2006). Research of these questions requires documentation of collaborative writing processes and analysis of the critical aspects in learning.

In the current writing practices in universities of applied sciences, there are signs and experiments of a new kind of writing genre, which through further development, might offer new solutions for practical applications of writing in development projects. Pirjo Lambert (2005) has developed a project writing plan for use in development projects between universities of applied sciences and the employment sector. The writing plan has been proven to be an effective tool in projects. In the planning of writing, possible problems in collaboration and ethical issues should also be anticipated. These matters were referred to earlier in this article when talking about the teachers' publications that were written based on student assignments. For this reason, I suggest making a writing contract.

When agreeing to write in collaboration with the employment sector, on the basis of the project writing plan, it should be agreed as to what will be written collaboratively, to whom is it written, what is the division of work and responsibility in the writing and how will the outcome of the writing be divided (i.e., who will receive credit for what?) among the authors and the organizations they represent? In the division of work, collaborative writing strategies can be applied (Lowry et al. 2004). Dividing the outcome can mean, in addition to a material outcome (e.g., remuneration), how the writing and its outcome (e.g., an article or report and the new solution presented therein) is employed in both the university of applied sciences and the employment sector, that is, how to promote the start of developmental transfer? The writing contract could serve as a tool for the teacher when he/she is guiding students in collaborative writing or when he/she is forming and participating in collaborative writing groups in projects for the employment sector. Discussing issues of collaboration and agreeing about them becomes more important, the more there are parties involved in collaborative writing.

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