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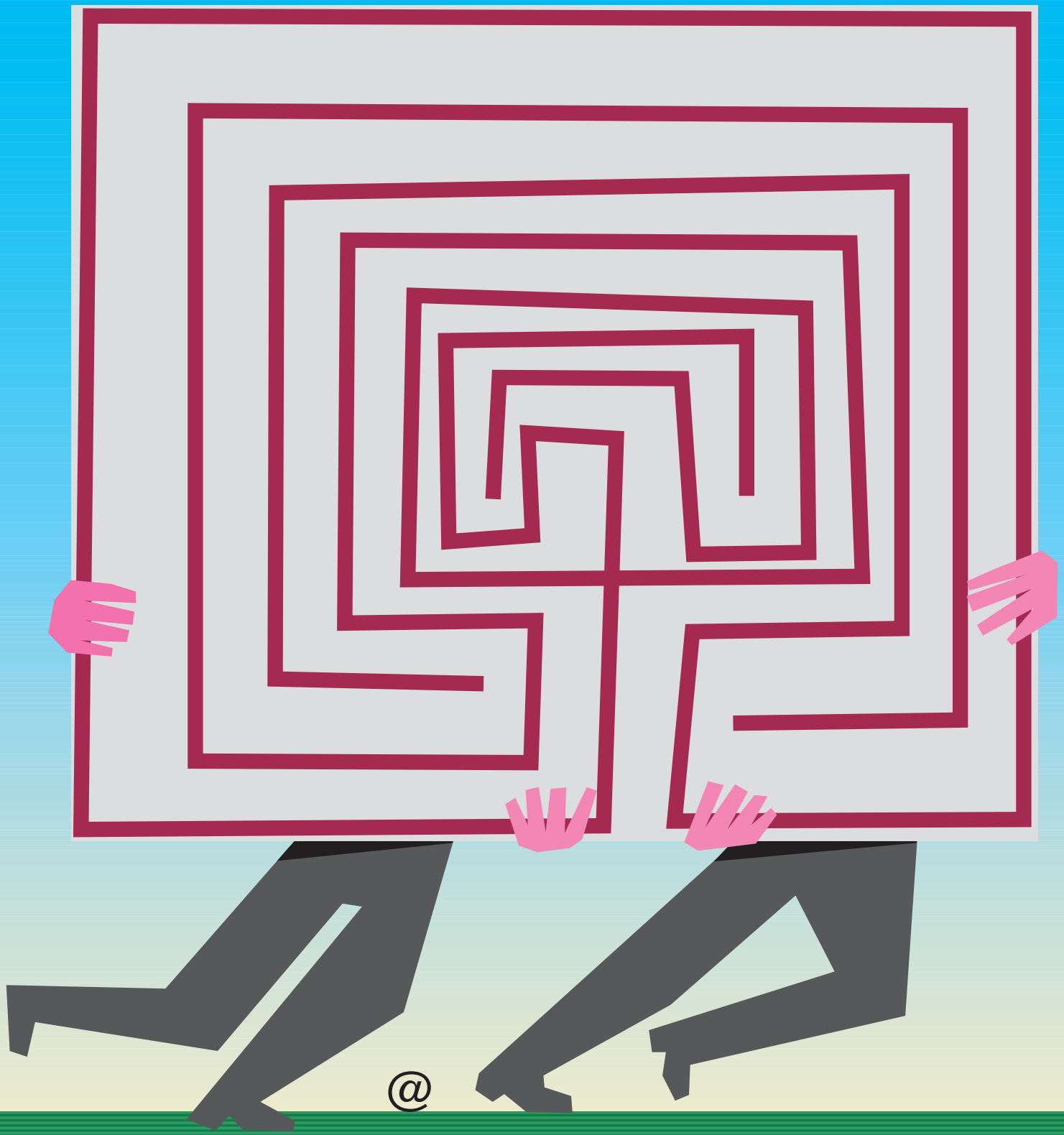

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Cedefop assists the European Commission in encouraging, at Community level, the promotion and development of vocational education and training, through exchanges of information and the comparison of experience on issues of common interest to the Member States.

Cedefop is a link between research, policy and practice by helping policy-makers and practitioners, at all levels in the European Union, to have a clearer understanding of developments in vocational education and training and so help them draw conclusions for future action. It stimulates scientists and researchers to identify trends and future questions.

Cedefop's Management Board has agreed a set of medium-term priorities for the period 2000-2003. They outline four themes that provide the focus of Cedefop's activities:

- **promoting competences and lifelong learning;**
- **facilitating new ways of learning for a changing society;**
- **supporting employment and competitiveness;**
- **improving European understanding and transparency.**

The opinions expressed by the authors do not necessarily reflect the position of Cedefop. The *European Journal Vocational Training* gives protagonists the opportunity to present analyses and various, at times contradictory, points of view. The Journal wishes to contribute to critical debate on the future of vocational training at European level.

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Quality in E-learning
The learner as a key quality assurance category

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Quality is determining the future of e-learning. Many recent analyses and developments have reached this conclusion. Quality assurance will therefore acquire great significance. This poses two questions. What is quality? And how can we assure it? Finding answers to these questions is a major challenge, which we need to face if we want to raise the future profile of e-learning to the same level as traditional training measures.

The article takes this as a starting point and outlines key quality assurance factors which put learner needs first. It compares subject-based quality research with objective quality criteria. The result is a learner-integrating quality assurance approach. It examines the latest findings from the largest survey on quality in e-learning to date (Lernqualitaet.de) from an unprecedented learner perspective.

Quality will determine the future of e-learning. Many analyses have reached this conclusion ([1]). The KPMG eLearning zwischen Euphorie und Ernüchterung (E-Learning Between Euphoria and Sobriety) ([2]) survey from November 2001 highlighted the fact that e-learning does not only depend on good technology, but should also pay much more attention to the corporate learning environment and the learner than it has to date and find effective ways to incorporate them ([3]). Berlecon, IDC (International Data Cooperation) and other institutes are recognising that although e-learning is a growing market, it will only develop its full potential when we can respond with high-quality e-learning concepts ([4]).Quality development and assurance is therefore becoming a central issue in the e-learning debate ([5]). Quality assurance concepts are featuring more prominently. In a wider context, the growing significance of the quality debate is affecting the entire education sector, not least as a result of the shock over the results of German pupils in the PISA study.

Quality development in education, and particularly in e-learning, is also increasingly taking centre stage throughout Europe. The European Commission is currently sponsoring numerous research projects for advancing and harmonising European debate on quality in e-learning as part of a pertinent initiative. For example, the European Quality Observatory (EQO) project (www.eqo.info) is building an Internet portal with options for analysing and comparing the different and competing quality systems in Europe ([6]). One of EQO's main objectives is to promote the integration of quality systems in education. Efforts are also underway to synchronise international debate on quality standards ([7]).

The particular relevance of quality development poses two immediate questions: (1) What is quality? and (2) How can we assure it? Answering these questions is a major challenge, which we need to face if we want to raise the future profile of e-learning to the same level as traditional training measures. The good news is that e-learning does not invalidate the basic principles of quality assurance. We can therefore call on tried and tested ideas, models and methods when planning, developing and applying e-learning quality assurance concepts.

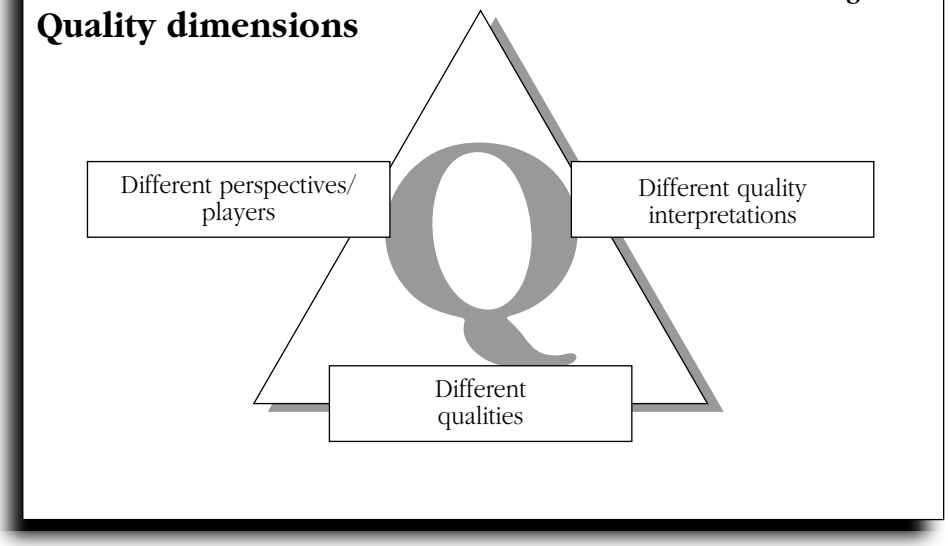
The bad news is that the drawbacks of conventional approaches remain. Therein lies the challenge. Ascertaining the actual nature of quality in e-learning opens up an extremely heterogeneous and opaque realm of concepts, methods and proposals. First we have to shed light on the mystery surrounding the definition of quality, then we must apply it consistently to e-learning.

Quality as a multifaceted concept

Learning quality – or educational quality in a wider context – is a multifaceted concept. It is not an absolute, it always depends on the situation in which it is employed. No European country has reached a social, political or academic consensus on what educational quality actually is. What we define as quality is therefore a normative setting which refers to a specific context. Consequently, situations and interests always influence its definition.

This applies even more to social and pedagogical services, since here we cannot follow patterns which are *virtual laws of nature* and always turn that which we deem 'suitable in its composition to fulfil a requirement …' – i.e. quality (according to the ISO 900X definition ([8])) – into a negotiable issue between variously propounded academic theories and subjec-

Figure 1:



We can distinguish between three fundamentally diverse elements in the discussion:

❏ different interpretations of quality

❏ different players with different perspectives of quality

❏ different forms of quality, e.g. input, process, output

Together, these three basic elements provide a frame of reference for all debate on quality.

Quality reflected in various meanings

One dimension of quality is the differing interpretations of the term. Numerous definitions from various fields are available. For example, economics ([10]) adopts the *product-based approach*, which defines quality as a physical characteristic. Thus the quality of a piece of jewellery depends on its gold content, and the quality of a whiskey on its length of storage. There is also the *user-based approach*, which relates to individual customer preferences. Quality is defined in terms of user-friendliness. Under this interpretation, optimal fulfilment of demand signifies the best-possible quality. An oft-borrowed book therefore attains a higher quality than a seldom-loaned volume. User preferences are the determinants. We also have the *production-based approach*, which stems from the manufacturer and sets standards, compliance with which equals quality. Here, the primary goal is functionality, so a Swiss precision watch could have the same quality as a no-name product from Hong Kong. All books that do not fall apart have the same quality.

Of course, these attempts at definition cannot simply be transferred to the education sector. Unlike business, education does not involve classic supplier-customer relationships. It is an association of co-producers. An e-learning programme supplies technology and content, but it is down to learners themselves to actively use it, i.e. learn. The interaction between the learning programme and the learner is known as a co-producer relationship ([11]).

In education we can currently identify around five different meanings or intentive political and social interests. Donabedian (1968) highlights the relational character of the term in his definition of quality. 'Quality is the degree of conformance between a performed service and the goals set for the service ([9])'. In this sense, quality describes a relationship. Evidently, discussion of quality involves considering a metatheoretical category which concerns the composition of the object under scrutiny.

The origins and impact of the quality debate, which now encompasses a large section of society and affects many social sub-segments, are no longer easily visible. However, we can observe that quality is becoming an increasingly important and desirable category in individual and social contexts. We can regard quality more and more as a subjectively individual and collectively influential category. Achieving good/top quality is a hotly debated and much-sought-after goal in all sectors of society. Even language bears witness to the concept's significance, as the renaissance of phrases such as 'quality of life', 'quality of services', 'product quality' and 'water quality' shows. The very impact of the word 'quality' on behaviour demonstrates its meaning. The word merely signifies 'composition' (Latin *qualis*), but in everyday language it is used to distinguish a characteristic of an object as being of a higher calibre than that of another object.

To critically analyse quality, it is helpful to identify the basic points of the debate.

([1]) See also Ehlers et al., 2003, particularly Chapter 6.

([2]) Cf. KPMG, 2001.

([3]) A UnicMind study, 'E-Learning and Knowledge Management in Major German Enterprises', also airs this problem (2001).

([4]) Berlecon Research (2001) elaborates this subject in its study Wachstumsmarkt E-Learning: Anforderungen, Akteure und Perspektiven im deutschen Markt (E-Learning Growth Market: Challenges, Players and Prospects in the German Market).

([5]) See also Ehlers, 2002 on development of e-learning.

([6]) Pawlowski (2003) describes the research project in detail.

([7]) For example, Germany's Deutsches Institut für Normung (DIN), Europe's CEN and ISSS and the ISO organise workshops on this topic.

([8]) We can find an explanation of the ISO quality definition and parameters in Gräber 1996, for example.

([9]) Donabedian, 1968.

([10]) Cf. Müller Böling, 1995.

([11]) Cf. Fendt, 2000, p. 69; Ehlers 2003, Chapter 3, for example.

tions for the term 'quality' ([12]), some of which resemble the definition examples in economics:

❏ quality as an exception describing the surpassing of standards

❏ quality as perfection describing the state of flawlessness

❏ quality as functionality referring to the degree of utility

❏ quality as an adequate return measured by the price-performance or cost-benefit ratio

❏ quality as a transformation describing the above-mentioned co-producer relationship between the learner and the learning programme and referring to the learner's progress via a learning process.

Quality in the clash of perspectives

However, there are not only different interpretations of quality but also various players' interests and perspectives ([13]): the enterprise – the user of the training measure, the tutors supervising an e-learning programme, the personnel managers who establish the framework for continuing training in their sector, and the learner. Each of these four players generally has divergent interests and differing quality requirements and interpretations. We must therefore regard quality not as a static element, but as a negotiable relationship between the players involved in the social process.

Quality at all levels

Last but not least, quality can also refer to different education levels or processes. We can cite the different levels of the famous quality triad (according to Donabedian) as examples:

❏ training measure **prerequisites** (input/structure quality): availability and capability of computers or tutor qualification for of e-learning;

❏ the **learning process** (process quality), i.e. the interaction of learners, learning format, corporate learning culture, learning content and desired training goals – or;

❏ the **result** (outcome quality) of e-*learning*, i.e. the increase in learners' professional competence.

Defining quality therefore involves navigating this multidimensional space ([14]). There is no easy answer or standard quality assurance solution. We have (unfortunately) had to abandon the hope of only having to define quality criteria once to be able to appraise e-learning courses and formats properly in future. Ultimately, e-learning measures strive to boost learners' professional competence. A key factor in e-learning will thus be quality orientation which spans all processes and puts learners first. They must take pole position in e-learning quality concepts, since their professional competence is at stake ([15]). Researchers and politicians are called to establish exactly what this involves. However, we can already clearly identify several fundamental requirements which the new learning formats and social developments impose.

Learner-integrating quality assurance

It is imperative that we do not perceive a new focus on learner needs merely as a whim of fashion. Below we will therefore list and explain basic dimensions of learner-integrating quality assurance. We can use two main arguments to justify strengthening the learner perspective:

❏ a **paradigm shift** with consequences for defining learning quality is appropriate and necessary for quality assurance in e-learning;

❏ investigating quality from a user perspective entails integrating learner-oriented quality development at **all levels** of the training process.

The following section lists reasons for prominently integrating learner variables in quality models and traces the consequences for the quality assurance process.

Paradigm shift in quality assurance

A paradigm shift has been evident in continuing vocational training for some time: a move from lecturing to enabling – from

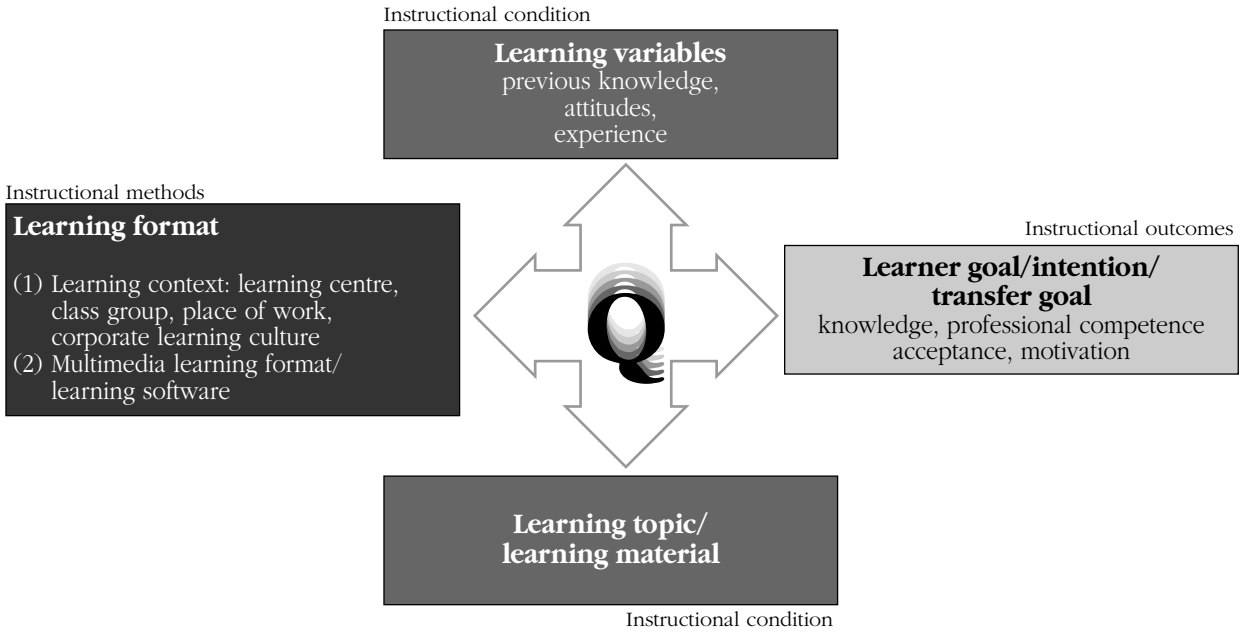
([12]) Harvey/Green, 1993, p. 9ff present an analysis of interpretations of quality in education. Wallmüller, 1990, p. 7f also features a systematic assessment of quality concepts, though this is more generalised and is not specifically related to education.

([13]) Cf. Fischer-Bluhm, 2000, p. 680; Ehlers, 2003, Chapter 3.

([14]) Cf. Fischer-Bluhm, 2000, p. 680f.

([15]) Professional competence here has a broader sense of 'ability to interact creatively with one's environment in a complex world'.

Figure 2:



behaviourist to cognitive didactics and from instructionalist to constructivist approaches ([16]). E-learning opportunities are generally radicalising this development. They pave the way for previously non-existent need orientation and programme individualisation – not least by replacing teaching along the lines of 'one for many, now and here (Taylorist principle) with teaching/learning organisation which advocates 'need-oriented learning, any time, anywhere'.

On the whole we can see that learners are being granted more and more say in defining continuing training quality ([17]). This applies to e-learning in particular. We can identify four reasons for this development: (a) from an **economic point of view**, learners are having to make an increasing financial contribution, either directly, by paying for private further training measures, or indirectly, by sacrificing leisure time to participate in further or continuing training organised by the company; (b) from an **educational and didactic point of view,** this is reflected in less lecturing and more hands-on experience. This change originates in a shift from behaviourist learning theories to cognitive learning models and from instructionalist to constructivist approaches. This generally involves less standardisation and more orientation to situation and subject; (c) at a **social level**, one reason lies in the emergence of the knowledge society. Globally available knowledge currently doubles every four to five years. U.S. sociologist Richard Sennet ([18]) predicts that American college students will change jobs eleven times during the course of their career and completely renew the basis of their knowledge three times. This lifelong learning process is individual and cannot be standardised. The challenge for e-learning programmes is to match individual requirements as closely as possible to the available learning formats; (d) **e-learning's special traits** are a fourth reason for learners' increasing influence on definition of quality in this area ([19]):

Access and learning forms: individual access to software has eliminated the need for standardised times and shared, public locations for learning processes. Learning primarily takes the form of private study,

([16]) Harel et al., 1999; Jonassen, 1996; Reeves, 1999; Wilson et al., 2001 and others describe this development.

([17]) Cf. Gnahs, 1995.

([18]) Cf. Sennet, 1998.

([19]) Cf. Baumgartner, 1997.

often at home, independently of teachers or other learners. E-learning facilitates individual, unrestricted access to material any time and anywhere. It also offers a wealth of learning forms: classroom phases, virtual self-study, tutor support, working and sharing with other learners. This range of possibilities allows individual tailoring of learning opportunities.

Status quo and needs structure: groups of e-learners may have a heterogeneous **status quo**. This applies particularly to demographic components (professional status, level of education, etc.), content (previous knowledge, skills, etc.) and learning experience. Uniform learning backgrounds within the group, such as those found in a classroom-based scenario, cannot automatically be assumed. This has a special bearing on the option of tailoring learning processes to individuals. Whereas traditional group teaching only works with relatively homogeneous backgrounds, e-learning is not subject to this restriction. Moreover, learners themselves are responsible for determining when, how long and how often they study.

The **need structure** usually has a similarly heterogeneous status quo. The envisaged objectives and related motivation structures of media-supported learning are entirely open. However, these diverse needs not only influence learning success, but are also instrumental in defining it. The number of goal structures is manifold: course participation inspired by personal interest in a subject is just as feasible as acquisition of an additional professional qualification or continuing training to gain a skill which has become indispensable for normal working life. A group of learners on one e-learning programme may pursue a very disparate range of goals.

Freedom of programme selection: e-learning gives learners the chance to decide for themselves how quickly they wish to learn, at which times and which section they want to focus on, skip or intensify. Learners can largely choose their own topics, schedules and strategies. Each person can decide individually which content, section or course they digest, when and how. Scope for such individual organisation of learning also engenders individual quality requirements.

To summarise, all four reasons – economic, educational/didactic, social and special e-learning traits confirm that learners should be more instrumental in defining the nature of learning quality. For quality assurance this specifically means that learner variables gain more weight in relation to the other learning process variables.

The 'paradigm for constructing and evaluating multimedia learning environments', which Rainer Fricke ([20]) devised, drawing on proposals from Reigeluth ([21]) and himself ([22]), clearly illustrates the relationship between learner variables and learning formats. Fricke avers that a learning format's effectiveness depends on four factors:

- the **learning environment**: both the multimedia system (LMS) and the social learning environment (corporate learning culture, locations, etc.);
- the **learner** or the learner variables: previous knowledge, education, learning skills, media skills, interests, expectations, goals, etc.;
- the **learning topic**: content and presentation of study material;
- the (intended) **learning outcome** or objective: goals to be achieved via learning, such as promotion as a result of increased professional competence.

An e-learning format only takes shape when all four of the listed factors unite. All four aspects influence learning success, learning effectiveness and quality. The quality of an e-learning format therefore depends on the interaction of all four factors. The depicted paradigm shift boosts the significance of the learner variables within the entire learning format. This does not mean disregarding all other factors and treating learner needs the same as before but using technological or content-based/curricular learning process aspects. It merely involves **shifting the emphasis** on learner factors.

Four consequences for quality assurance in e-learning

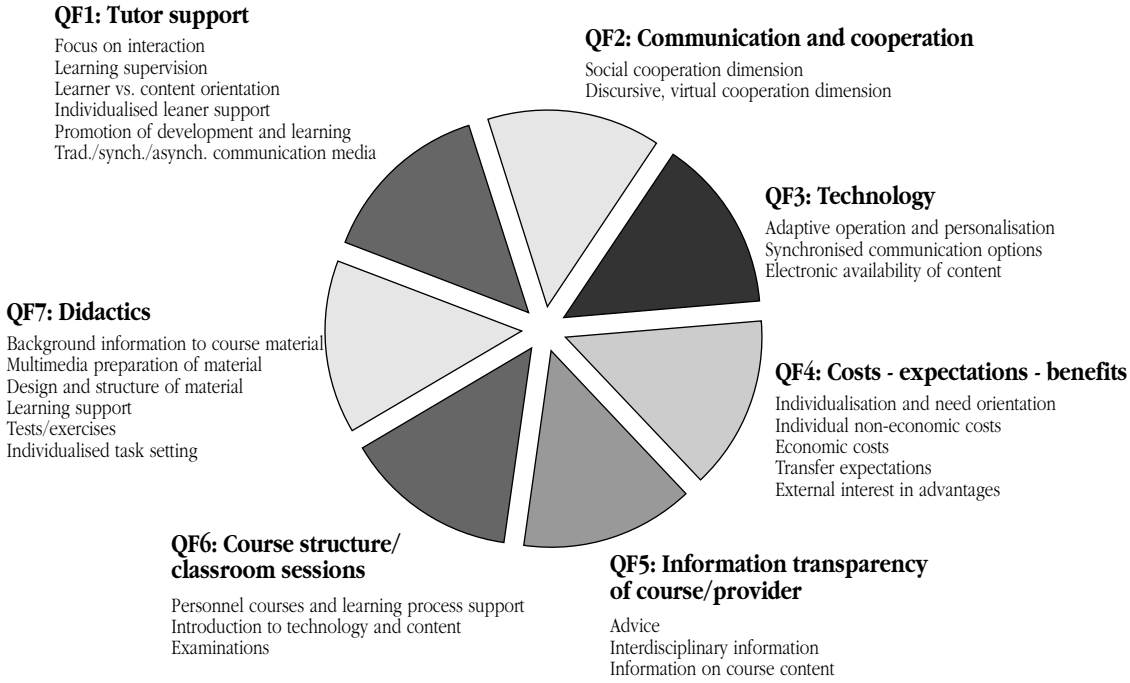
Giving learners a key position in quality assurance has consequences for what we

([20]) Cf. Fricke, 1995, p. 405.

([21]) Cf. Reigeluth, 1983, p. 22.

([22]) Cf. Fricke, 1991, p. 15.

Figure 3:



define as quality in e-learning. The following four points will explain their relevance for quality assurance in e-learning programmes.

Consequence 1: From technological orientation to clear user orientation

The maxim for e-learning should be 'technology-supported but not technology-oriented'. The quality of the course does not hinge on what technology can achieve, but on how the appropriate technology can be used to tailor content, methods and situation to learners' needs. Studies show that (qualitatively) poor CBT which is sensibly embedded in a learning format can produce better results than (ostensibly) good programs which are not used sensibly ([23]).

Consequence 2: From programme orientation to learner orientation

This does not just mean rehashing the generally accepted principle of participant orientation without further reflection and merely considering how programme presentation and design can be made more user-friendly and adapted to the specific situation. This is undoubtedly important and correct. However, the paradigmatic shift goes one step further. It involves a change in perspective. Hence the question is not what training measures can be offered to staff, but what do they need now and in the future in which areas, and what forms of teaching suit their career and level of education?

Consequence 3: Quality originates in learning (and with the learner)

The depicted paradigm shift has far-reaching consequences for defining quality and quality assurance in e-learning. This viewpoint does not regard learners as course consumers but as co-producers of their own learning success. From this perspective the widely advocated economic view of the learner as a customer is unacceptable. On the whole it appears that the common definition of quality as 'what the consumer wants', now popular even in education, which was triggered by the transfer of different quality management philosophy principles (e.g. TQM) from industry to social services, and to education since the late 1980s (Berwick, 1989), sheds little light on what quality really is. It is not even easy to establish who the consumer in vocational training is. Is it the

([23]) Cf. Schenkel, 1995, p. 22.

([24]) Cf. Müller Böling, 1995.

([25]) Cf. Behrendt, 1998.

([26]) Cf. Meier in Schenkel, 1995; Zimmer/Psaralidis, 2000; Behrendt, 1998; Schenkel, 1995; Behrendt, 1998, p. 43ff; Schenkel, 1995, p. 13ff.

organisation making a demand – the company which sends its staff on further training – or is it the course participants themselves? Moreover, learning processes are not a service which an education provider must supply to or for a potential customer. They require the cooperation of the 'customer' (i.e. learner). We therefore assume co-production of the training product in education and social affairs.

Quality only results when the learner interacts with the learning format: i.e. only when learning takes place (co-production in learning success). An e-learning format has no learning quality in itself. It merely supplies the framework (the format) to support the learning process.

Consequence 4: Quality promotion instead of quality assurance?

Most of the evaluation concepts for assessing learning software applied in quality assurance processes today follow a so-called mechanical model of impact research (Müller-Böling also refers to an *ex ante* evaluation model ([24])). Learning software which has been tested according to certain quality criteria (e.g. AKAB, MEDA '97, etc.) is used to achieve a particular effect – growth in workers' professional competence. This neglects to consider that evaluation of learning software says nothing about its potential impact. Rather, investigations such as the case studies Erich Behrendt has performed in several sectors ([25]) reveal that not only the learning software but also the learning formats, the corporate working, learning and management cultures and learner motivation, activity and guidelines for behaviour are deciding factors for effective e-learning. This confirms that learning quality involves the interaction of various givens, only one of which is software.

Quality only ensues from the harmonisation of learning requirements, the e-learning format and other contextual aspects. Prognostic standards barely hold water as forecasts of learning quality ([26]). After all, quality can only be achieved through constant optimisation – or promotion – of this interaction. It therefore makes sense to strive for quality promotion rather than quality assurance in future, since only standards can be assured. That does not mean that from now on, all standards should be annulled, but it emphasises that providers and services are only the framework model. Learners are the primary sculptors of their e-learning process and hence the learning quality. It is they who

Figure 3:

Subjective quality model

Quality segment 1: Form of tutor support
Quality requirements which learners regard as significant for online tutor support: assigned tasks, behavioural guidelines, rights to tutor time, tutor qualification requirements and information on desired communication media.

Quality segment 2: Online course cooperation and communication
Quality requirements which learners impose on communicative and cooperative online learning processes. These concern specific forms and options of communication between the learning process participants, and their design ([28]).

Quality segment 3: Learning technologies
Quality requirements which learners impose on selected technological components in an online learning platform.

Quality segment 4: Costs – expectations – benefits
Learners' cost-benefit considerations also play a vital role in e-learning quality assessment. Learners' investment in online continuing training and the ensuing results, e.g. improved professional competence in a work context, must be in an appropriate ratio ([29]).

Quality segment 5: Information transparency
Quality requirements for information on online training providers and the courses they offer. The main question is: What course and provider information should learners have access to, and what advice services are needed to create transparency?

Quality segment 6: Classroom sessions
Quality requirements for course structure, particularly classroom sessions: design and frequency of classroom sessions, study advice services, timetables and organisation, evaluation of online courses.

Quality segment 7: Didactics
The didactics segment covers content, learning goals, methods and materials. Quality requirements chiefly affect the following aspects: course material background information, media-compatible multimedia material design, sectioned and structured course material, promotion of learning competence, feedback via exercises and monitoring of learning progress, individual tasks adapted to learners' personal goals and abilities.

([28]) These can be learner-learner interaction, learner-tutor interaction, learning group-tutor interaction, learner-expert interaction, etc. The element of learner cooperation is seen to be linked very closely to the concept of collaboration, i.e. cooperation here does not signify work division, but describes shared cognition in a spatially divided learning system.

([29]) However, costs are not restricted to the financial aspect. The time learners invest, the difficulties of self-organisation and commitment to self-motivation involve considerable sacrifices for learners. On the plus side, learners can harvest various other fruits from their efforts as well as a financial ROI.

Figure 4:

Target-group-specific quality profiles (selected characteristics)

The individualist

(N=328)
Content-oriented
- Content-based quality requirements
- Individualised programmes
- Didactic structure
- Self-directed leqarning
- Classroom sessions, interaction and communication

The results-oriented learner

(N=235)
Independent and goal-oriented
- Individualisation
- Standard programmes
- Work-integrated learning
- Instrumental purpose orientation
- Learning and media competence
- Classroom sessions, interaction and communication

The pragmatist

(N=293)
Need-oriented
- Individualised programmes
- Practical tutor support
- Non-economic costs
- Information & advice
- Personalisation of the LP
- Didactic requirements

The avantgardist

(N=392)
Interaction-oriented
- Discussion/communication
- Learner-oriented tutor support
- Avant-gardist media/tehnology
- Virtual learning groups
- Information & advice
- Variety of techning methods

learn. It goes without saying that e-learning courses must conform to minimum standards. But minimum standards do not themselves imply any learning quality.

Learner-oriented quality development

The vital role of the learner, which the four cited consequences for quality assurance in e-learning stress, indicates the future need for reliable learner-oriented quality research. This particularly involves setting determinants for quality definition from a learner point of view and fixing them so that they can be employed in constructing concrete e-learning programmes. The fundamental question is therefore, what are significant factors of e-learning quality *from a learner perspective*? The status of learners must be reconsidered.

Lernqualitaet.de – quality research from a learner perspective

The lernqualitaet.de – Qualität aus Lernersicht (Quality From a Learner Perspective) study ([27]) takes this issue as its starting point. It has two innovative goals. First, it aims to define quality from a learner point of view. Second, it moves away from the common practice of applying the same quality equally to all learners. Instead, it creates target-group-specific quality profiles. The results show that quality criteria do not apply equally to all learners. These findings prove that the common practice of developing quality according to generally applicable criteria makes no sense.

The research project provides the first-ever empirical classification of subjective e-learning quality requirements. This now sets the stage for viable and appropriate quality development for networked learning courses focusing on learner needs.

Comprehensive e-learning services for learners

A subjective quality concept for online learning formats must consider more and broader determinants than 'mere' didactic or technological aspects, as the survey results show. They reveal that learner quality requirements for e-learning can be divided into seven quality segments:

It is clear that learners in a self-directed learning process desire assistance from a network of supporting learning services. Moreover, we can see that learners' quality requirements apply to the entire continuing training process and not just the learning process. Learners also attach importance to learning conditions (structure quality) and results (output quality).

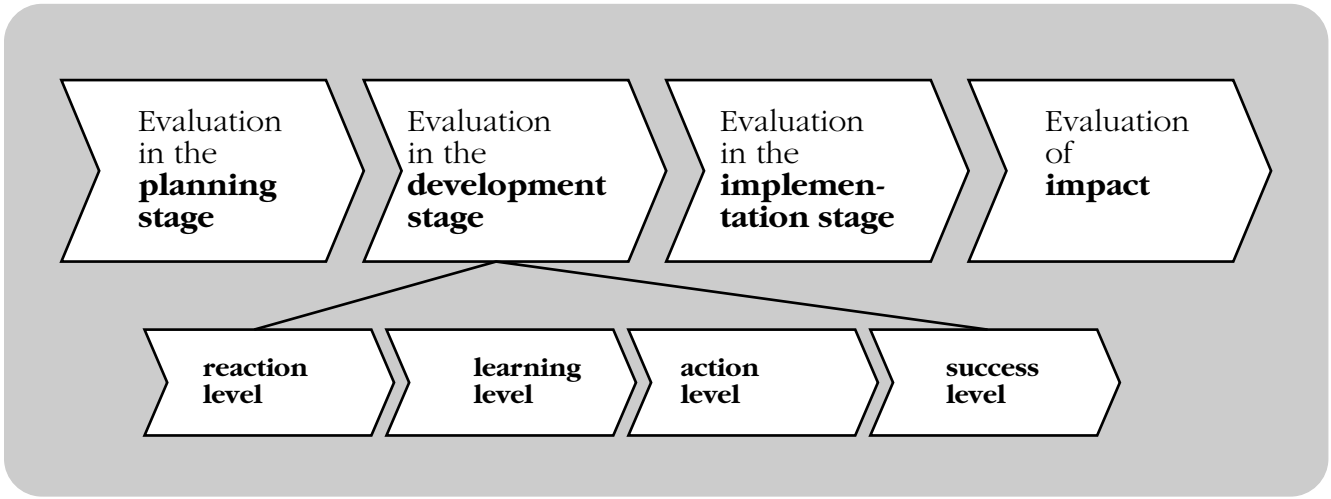
Target-group-oriented quality concepts

The survey shows that quality requirements differ from learner to learner and depend on various aspects, such as educational experience, individual learning competence and socioeconomic factors. The survey compiles target-oriented quality profiles from the wealth of individual quality requirements, which appropriately

([27]) The study was performed at the University of Bielefeld (Ehlers 2003) and will be published in Germany in spring next year (2004). More information on the Internet at http://www.lernqualitaet.de.

Figure 5:

Evaluation model for comprehensive quality assurance (Kirkpatrick, 1994)



reflect the existing differences in e-learners' quality demands. These prototypical profiles can act as models for learner-oriented quality development. Analysis suggests that the following target group structures would be viable (Figure 4):

❑ **Content-oriented individualists**, who want to learn independently and do not consider tutor support vital for high quality. They have little need of support services. Their quality requirements only concern content. They attach no importance to communication and interaction.

❑ **Independent goal-oriented or results-oriented learners**, who use e-learning chiefly to achieve a previously defined objective and require only the support necessary for this. They are satisfied with standard programmes and attach no importance to individually tailored learning formats.

❑ **Need-oriented pragmatists** are interested in communicative discussion but adopt a practical approach, focusing on what is absolutely necessary. Extreme individualisation of the learning programme is not a priority, and they do not regard special application of various media as a prerequisite for high-quality learning formats.

❑ **Interaction-oriented avant-gardists** perceive quality in a comprehensive palette of support services. They are interested in improving learning competence as well as attaining specific goals. They require an interaction-oriented learning format which incorporates a rich and varied use of media.

We can assign a different set of quality factors from the seven subjective quality model segments to each target group. The study proves that quality development for learning formats intended to facilitate self-directed learning must take very different learner quality definitions and requirements into account. This applies particularly to guidance services which take the form of advice or tutor support. Consideration of target-group-specific quality needs is therefore a strategic success factor for providers of continuing e-training. If e-learning is to reap the benefits of these new findings, it must develop tools which integrate them into *all* levels of the electronic continuing training process. In the next section we will present a feasible evaluation approach which analyses the different education process stages, apply it consistently to e-learning and couple it with the learner orientation model developed above.

Evaluation in the planning stage

Evaluands

- ❏ **Target-group-specific prerequisites:** Previous knowledge, interest in the quality measure, expectations, participant media application skills, information on educational context, learning competence, self-organisation/self-direction, how does the learner define learning success? (subjective quality model and target-group-related quality concepts)
- ❏ **Contextual prerequisites:** onsite organisational/technical requirements, corporate learning culture, private learning environment, etc.

Methods

- ❏ Qualitative methods: survey, observation

Evaluation in the development stage

Evaluands

- ❏ Target-group-applicable pedagogical design of course/learning modules and course structure (e.g. blended learning vs. purely virtual self-study)
- ❏ Ergonomics
- ❏ Acceptance
- ❏ Motivation effects
- ❏ Do the concepts suit learner requirements? (subjective quality model and target-group-related quality concepts)

Methods

- ❏ Formative evaluation through iterative optimisation loops, observation, behaviour recording, log file analyses, tests and checklists

Evaluation in the implementation stage

Evaluands (subjective quality model and target-group-related quality concepts)

- ❏ **Reaction level:** How do learners react to the course? What form should the e-learning programme take to generate a positive reaction from learners?
- ❏ **Learning level:** What are the learning results? How can the learning process be influenced positively?
- ❏ **Activity level:** Were learners able to use the learning content for their own purposes, e.g. transfer it to their work situation? Has professional competence increased (reconstructive analyses)? What form should an e-learning course take to support learners in developing initiative and competence?
- ❏ **Level of success:** What impact does continuing training have on learners' situations, e.g. their status in the company or workplace? Was the e-learning measure a success for the learner?

Methods

- ❏ Combination of qualitative and quantitative methods: Surveys, observations, tests

Evaluation of impact

Evaluands

- ❏ Has the continuing training measure achieved the desired success (e.g. in a corporate/organisational context)?
- ❏ Have the individual or organisational goals (corporate training) been attained?
- ❏ Is the desired increase in the learner's professional competence visible?

Methods

- ❏ Cost calculation (ROI), staff discussions (quality management), reconstructive analyses of increase in professional competence

Assuring quality at all levels

Until recently, monitoring the success of continuing training measures was limited to asking participants how satisfied they were, and at best, to examining direct learning outcomes ([30]). Now, however, detailed evaluation models are also available for e-learning (for learning software and online learning formats). In general we can affirm that quality assurance is more than simply monitoring direct learning effects. It considers all determinants (see Figure 5): learner, learning topic, desired results and both the technological and the social learning environment (place of work, corporate learning culture, private learning situation, etc.).

Quality assurance does not solely consist of good planning and preparation. It must extend to all phases of the training process and involve the learner. It begins with quality awareness and ends with assurance of the transfer function, which is the ultimate aim. A tailored evaluation concept is also essential for ensuring quality.

It is vital to consider every stage of the training process, from planning, through development and implementation, right up to transfer assurance.

It is a widespread misconception that e-learning has only to be well planned and prepared to achieve the desired outcome. A detailed quality assurance concept might mirror Figure 5. It spans all stages of a qualification process and goes beyond standard evaluation procedures ([31]) for continuing training measures by incorporating the planning and development stage and the impact of the measure (e.g. return on investment in company training) as well as assessing the implementation stage in detail.

Each level must consider the four factors of learning format, learner, learning content and learning outcome/intention. Consideration of learner variables is particularly important. Thus, quality assurance involves integrating the learner in every phase of planning, development and execution. ***Learner-integrating*** quality assurance should therefore include at least the following evaluation questions, which render it possible (summarised on page 12).

Figure 6:

Media competence model according to Baacke

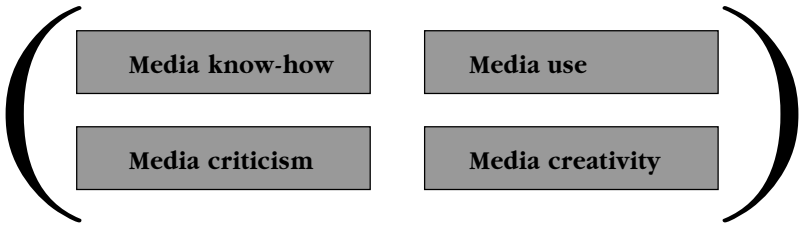
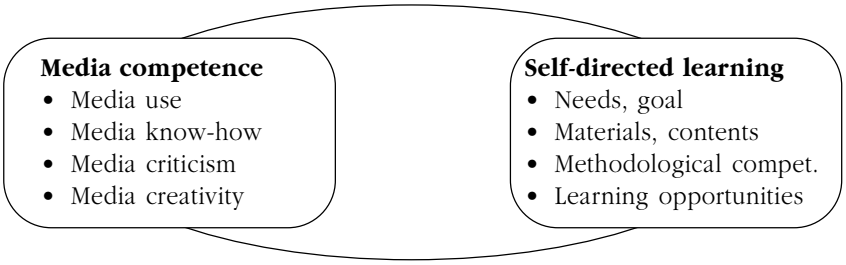


Figure 7:

Assuring quality means actively strengthening learners' learning competence



Outlook: Promotion of learning competence as a quality condition

It is clear that learners are becoming more relevant and taking centre stage in quality development. However, a further aspect is essential for establishing quality in learning: the learning competence of learners themselves. In 2001 Stiftung Warentest (the German consumer evaluation foundation) published a survey which examines whether a Stiftung Bildungstest (education evaluation foundation) would be advisable in the German training provider landscape. It concluded that an institution of this kind is urgently needed, because …

'… autonomous decisions by private users presuppose the existence of comprehensible markets. Ideally consumers should know what is on the market, in what qualities the desired product is available on the market and what price-performance ratio is appropriate to their requirements.' (Stiftung Warentest Dec. 2001)

([30]) Bliesener, 1997, p. 163-167.

([31]) Kirkpatrick proposes a four-stage evaluation model for training programmes, which still constitutes the standard evaluation approach in the U.S. (Kirkpatrick, 1994).

However, to make these decisions, learners must first identify their needs. They must know what training they require or wish to obtain in the course of their lifelong learning process. They must develop their own definition of quality. They must become their own training manager.

Only when learners are capable of doing this will they be in a position to proactively shape their own learning success and positively influence learning quality. E-learning providers and enterprises/other work organisations are 'only' facilitators in this scenario. Learners can then assume a high degree of *responsibility* for the learning quality of training processes. For both learners and providers bear responsibility for the learning process and hence for the quality of all learning in the co-producer relationship between training programme and learner. Assuring quality therefore always entails strengthening learner competence in this way. Against this backdrop, 'training for self-training' (learning to learn) gains significance. What is necessary for acquiring this competence?

Training programmes should aim to impart **media skills** to learners. They must also foster media creativity and a critical approach to media-based information over and above pure media competence. According to Baacke, comprehensive media competence comprises four dimensions ([32]):

The ability to acquire knowledge via the media, use it creatively and reflect critically on media-imparted communication processes and information is vital for effective media-based learning.

Supporting and promoting **self-directed learning** proficiency continues to be vital. Learners should be equipped to analyse their own **education needs**, formulate **goals** and access and exploit **materials and content** independently. To do this they require a high level of **methodological competence** and the capacity to arrange their own **learning opportunities**. It is not merely a case of empowering learners to solve individual, isolated problems. It also involves comprehensive training in a rapidly changing social and professional world. Otto Peters ([33]) emphasised this connection.

'The question of whether we … advocate self-directed learning is no banality, … in view of the social and cultural problems we are likely to encounter it is a sheer survival tactic.'

Above all, assuring quality in e-learning also involves assuring learning competence in learners. This enables them to shape high-quality learning processes themselves and to make the most of programme potential within the learning format.

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([32]) Baacke states that the concept of media competence is based on the concept of communicative competence. He presented this as the Bielefeld media competence model in Baacke, 1997.

([33]) Cf. Peters, 1999.

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The learning organisation as seen by workers

In the light of new management concepts, the role and function of enterprises in fostering individual competence has moved into the spotlight. This development is unanimously welcomed as beneficial to both workers and companies.
This article presents the results of a survey conducted in two high-tech enterprises which regard themselves as learning organisations to establish whether this was indeed the case.
It revealed that although the two enterprises have adopted several recommendations pertaining to the learning organisation concept, there is a discrepancy between their claims to be learning organisations and reality.
However, firms which class themselves as learning organisations must realise that implementing the conditions necessary for fostering worker competence is one of the obligations of corporate development.

Introduction

The fundamentals of mainstream management doctrine have shifted in the past three decades to focus on the role and function of workers. Until the 1980s Taylorist work structures with detailed process regulation dominated the workplace, and faith in technology nourished the vision of factories without human operators. However, the MIT study *The Machine That Changed the World* (Womack, Jones & Roos, 1990) prompted rethinking in executive offices. The lean organisation idea was born. This approach entailed reducing the regimentation of business processes and decentralising responsibility and decision-making. It was intended to streamline operations and permit swift reactions to market swings. The role of workers changed. They became creators of operational processes. The rest of the 1990s witnessed the establishment of various other corporate work organisation approaches, which embraced mastering change as a key challenge and were designed to rationalise processes. They pursue the idea of the learning organisation, motivated by the common goal of valuing workers' individual skills. Meeting corporate demands should no longer be the preserve of a small group of managers, but should involve the entire workforce (Sattelberger, 1999). This tenet derives partly from the assumption that several heads are better than one or two and have greater capacity for finding appropriate solutions to dilemmas which unforeseen developments pose.

If we perceive workers' individual competence as key potential in mastering future, unanticipated problems and are interested in establishing a broad basis of individual competence, we will naturally regard individual skills as a resource to foster and nurture. Many enterprises therefore consider themselves learning organisations. In the meantime, even enterprises structured along traditional lines have implemented some aspects of the learning organisation concept, such as internal improvement proposal schemes, to advance the company by harnessing the creativity and skill potential of their own staff.

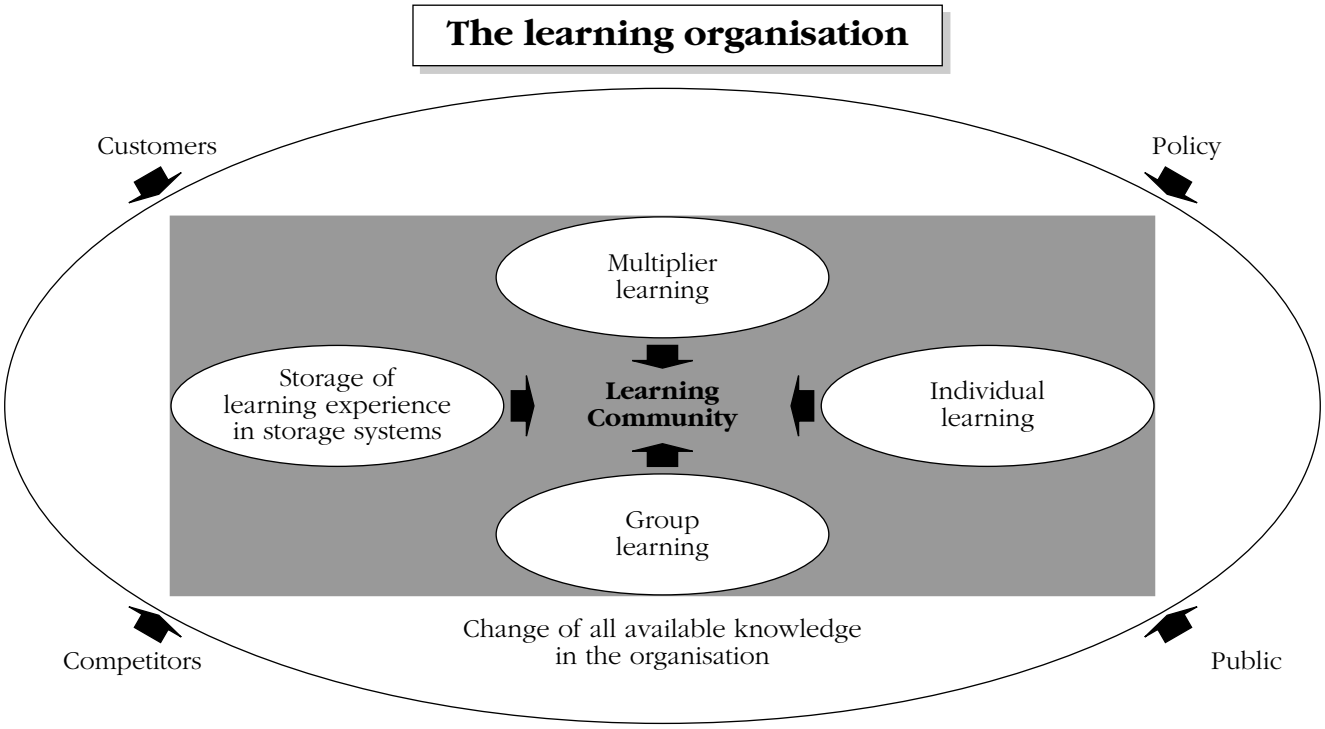
This article first provides a brief overview of how workers' individual competence is categorised in learning organisation concepts. It then proceeds to use findings from an exploratory empirical study to investigate how employees of two major German industrial concerns feel the learning organisation approach has been realised in their work environment.

The standing of individual competence in learning organisation concepts

A learning organisation is an institution in a constant state of transformation because workers are encouraged to continuously initiate change and adaptation. A learning organisation concentrates on creating, acquiring and transferring knowledge and acting differently in the light of that knowledge (Friedman, Hatch & Walker, 1999, p. 168). Practical guidelines for implementing learning-oriented organisation concepts (e.g. Probst & Büchel, 1994) mention procedures and regulations which offer possibilities and leeway for skill development processes and consider different learning process dimensions and how they interact (cf. Fig. 1). From an educational theory perspective, these approaches are problematic. Although they identify the goal – to become a learning organisation – they remain abstract, unclear and vague on specific ways to fa-

Fig. 1:

Dimensions of a learning organisation (Probst & Büchel 1994, p. 63)



cilitate and support worker knowledge acquisition. Consequently staff must try to meet fuzzy requirements. They are expected to comply with ambiguous skill demands but usually have no control over the conditions for capitalising on their skills, as these are generally defined outside their sphere of influence (e.g. by customers, the market or management).

The depicted scheme implies that change in the organisational knowledge pool is a reaction to change in the corporate environment. It takes into account both individual and social learning processes and knowledge acquisition by and subsequently via multipliers. Various systems store and document learning experiences to support the intended learning processes. This concept therefore incorporates ideas which generally crop up during discussion of knowledge management in private enterprises (e.g. Freimuth, 1997; Willke, 1998). Together, these four learning dimensions form an organisational learning concept which is designed to facilitate the harnessing of workers' problem-solving capacity (cf. Wildemann, 2000, p. 325 ff.). This is the main challenge to companies in rapidly changing markets (cf. for example Berryman & Bailey, 1992, p. 10 ff.; Kühl, 1998, p. 35 ff.; Lesgold, 1997, p. 167). The lack of clarity in predicting future requirements is explained by the fact that learning organisation programmes strive to promote as broad a worker competence spectrum as possible and allow comprehensive exchange of organisational knowledge.

As Figure 1 illustrates, modern approaches to corporate work organisation, which structure companies run as learning organisations, are specifically characterised by the high level of decision-making and responsibility they require from staff and their consequent reliance on workers' individual skills. The greater the formal relinquishment of control from central areas of the company, the more likely it is for workers to formally receive the opportunity to codetermine the purpose of their occupational activity and the means they employ to achieve it. We can interpret the growing attractiveness of approaches advocating organisational learn-

ing as evidence that management accepts and fosters this involvement in decision-making (for whatever reason) and will attempt to secure the basis for such involvement, i.e. development of individual competence.

Generally, requirements 'in modern work processes are characterised by greater cognitive and communicative demands, growing separation of work and production processes, more flexibility, mobility and efficiency, increased work intensity and new monitoring forms' (Dehnbostel, Erbe & Novak, 2001, p. 11). Daily work routine undergoes constant change. The form this will take is rarely predictable. Workers are expected to cope with this change economically and efficiently. This state of affairs does not allow definition of specific qualifications. Constant change would soon invalidate any which were set down. The more closely skill requirement formulation draws on existing workplace demands, the greater the risk that new developments in the employment system will undermine it (cf. Heid, 1996, p. 20). Mertens (1974) pinpointed this danger when he presented his key qualifications concept. More recently, educational policymakers and vocational training experts have tended to invoke the concept of occupational competence (to act) when defining demands on workers, since this masks the fuzziness and enables them to give workers the responsibility for meeting requirements (cf. Hof, 2002).

Questions and empirical procedure

The corporate philosophies of modern industrial enterprises describe learning organisation scenarios. They stress the significance of individual competence for a company's future success and propagate conditions which foster and require workers' individual competence. However, some people raise justifiable doubts about the comprehensive realisation of such objectives (Büchter, 1997). Moreover, a representative IAB/BIBB survey revealed that organisational changes have no direct effect on the field of activity of many workers in industry and services (Jansen, 2001). This therefore raises the question whether workers really feel that their working environment nurtures their skills, as the objectives demand or postulate.

The article approaches this issue from two different directions and reports interim findings from a more extensive Delphi study (Harteis, 2002):

1. Do workers believe that the views expounded by modern corporate work organisation methodologies foster and require their individual competence? To resolve this issue, workers had to state spontaneously what they felt fostered and required their individual competence in their day-to-day work, without the aid of examples.

2. To what extent do staff find performance of learning organisations wanting? As this question presupposes workers' familiarity with learning organisation approaches, which we cannot automatically assume, it was posed indirectly. Subjects were asked to formulate proposals for optimising their work environment in terms of fostering and requiring their individual competence.

To this end, a group of 32 workers from two high-tech companies (one from the automotive sector and one from the electronics sector) which consider themselves learning organisations were confronted with various questions in a four-stage Delphi process. The two above-mentioned questions formed part of the wider Delphi survey. A two-stage approach was adopted. First, both questions were posed without a prescribed response format. In a second step, all answers were submitted for further assessment to obtain a more differentiated picture. Respondents had to estimate how significant they felt the choices were. Answers to the first question also had to be evaluated with regard to the extent of proposal realisation in the respondent's work environment. Answers to the second question had to be evaluated with regard to improvement proposal feasibility. Respondents' subjective opinions were desired, not an assessment in the context of a corporate strategy. Assessment criteria for the second stage of the survey had only minor relevance. The investigation was primarily concerned with an intersubjective valida-

Table 1:

Overview of the most significant points (S) on fostering individual competence and applicability of examples to respondents' work environment (z)

	S	z
Assistance with problem-solving from supervisors and peers	88	.27
Project work	84	1.90
Decision-making scope	80	1.26
Participation in continuing training, feedback sessions and interdepartmental task forces	75	.2
Transfer of responsibility to staff	72	.84
Stricter standards through varied work tasks	68	1.6
Targeted and systematic training of new staff	67	-.44
Strategic planning of work organisation	64	-.15
Experience-sharing with colleagues and supervisors	61	-.44
Diversification of tasks	53	1.05
Regular staff meetings	52	.48

tion of findings to distinguish between individual opinions from potentially untypical work relationships and mainstream responses.

Findings

The following tables show the answers to the two questions. Table 1 contains answers to the question on what fosters and promotes workers' individual competence in their work environment. It includes the aspects to which respondents attributed particular importance in the second Delphi stage. Column S contains the number of points awarded for significance. Column z contains the z-standardised assessment of the desiderata achievement level.

Similarly, Table 2 shows the improvement proposals regarded as most important. Again, Column S shows the points awarded for significance and Column z the feasibility rating.

Discussion

First question

The first question served to ascertain the conditions which workers feel foster and require their individual competence within their work environment. Findings for this question can be viewed in the light of modern approaches to corporate work organisation, particularly those of the learning organisation, which consider workers' individual competence a key determinant of the future success of the company. Respondents' answers reveal their perceptions of what boosts their competence in their work environment. We can compare them with the tenets of learning organisation doctrines.

The most significant examples are: assistance from supervisors and peers with solving problems; project work; decision-making scope; participation in continuing training, feedback sessions and interdepartmental task forces; transfer of responsibility to staff; stricter work standards; targeted and systematic training of new staff; strategic planning of work organisation; experience-sharing with colleagues and supervisors; diversification of tasks; regular staff meetings (cf. Table 1).

The examples conform very closely to the organisation features foreseen by the new corporate work organisation approaches (cf. Harteis, 2002). The introduction of lean organisation went hand in hand with delegation of decision-making powers, project work and quality circles in the form of interdepartmental task forces. Stricter work standards and enrichment of work tasks accompanied the deregulation of work processes. Cooperative problem-solving and a strategic work organisation emphasis characterise a fractal or

Table 2:

Overview of the most significant points (S) on fostering individual competence and assessing their feasibility (z)

	S	z
Greater willingness to change structures and established routines	103	2.124
Management should make more allowances for workers' strengths and weaknesses	83	-.01
Job rotation and task extension	78	1.743
Organised communication between peers, feedback sessions with supervisors and personnel department	69	1.353
Elimination of the gap between responsibility and freedom to act: more decision-making scope	59	.277
Orientation to common values	55	.914
More say in defining higher goals	49	-.35
Fostering and recognition of creativity	49	.329
Long-term planning must be publicised more precisely; clearer, more structured goals	48	-.06

a virtual enterprise, which permanently relinquishes internal structures in favour of temporary cooperation formats. Experience-sharing and explicit reference to participation in continuing training measures feature in learning organisation approaches.

The example of staff responsibility transfer does not comply with the goal of a learning organisation, for it seems to embody a hierarchical disparity which the introduction of lean management has been seeking to overcome. Initially we must assume that the delegation of staff responsibility also creates a hierarchical difference.

Nevertheless, we can see that the majority of examples assessed as particularly significant for fostering and requiring individual competence adopt characteristics of newer organisation concepts. In this sense we could take the findings as confirmation of these organisation concepts, as workers perceive the stated characteristics exactly as they are intended: as fostering and requiring individual skills.

Assessment of significance, however, remains on the level of normative, programmatic statements, possibly reflecting the wishes of survey participants. The second score provides information on the extent to which these examples are implemented in everyday occupational practice. Here, respondents had to state how relevant they felt the examples were for their area of activity. The examples of project work, strict work standards, decision-making scope and diversification of work tasks ranked particularly high and were all more than one standard deviation above the group mean (cf. z value in Table 1).

Realisation is assessed more cautiously only for training of new staff, mutual exchange between colleagues and supervisors and strategic planning of work organisation. These three factors received negative z values, i.e. their marks for significance were below average, but nonetheless close to the mean ($z = [-.44;-.15]$, cf. Table 1).

All the other eleven examples classed as particularly significant receive positive z values between $z = .2$ and $z = .84$. They therefore appear to be a largely accurate description of the work environment conditions which respondents experience.

Overall, favourable conditions for restructuring corporate work organisation prevail. These foster and require workers' individual competence.

In an assessment of the significance of instances of fostering and requiring individual competence in the course of daily corporate routine, a high value was accorded to those cases characteristic of new organisation concepts and particularly of learning organisations. From this we can conclude that the qualities of corporate work organisation defined in the programme help support skill acquisition and application.

The empirical confirmation that the examples presented largely describe the work area of the surveyed respondents stretches beyond the realm of objectives to that of corporate reality. Respondents thus confirmed that they perceive specific situations in their work environment that foster and require their individual competence. They thus verified the existence of work conditions conducive to boosting skill levels (in selected cases).

Second question

Besides the question regarding how favourable to skill development workers experience their work environment, the potential obstacles to fostering and requiring individual competence in occupational routine also play a role in examination of competence-boosting work conditions. These were elucidated indirectly through improvement proposals.

These findings can also be analysed in the light of new organisation concepts. The introduction of improvement proposals which ought already to have been implemented under these concepts may be an indication that objectives have been insufficiently applied.

Respondents listed the improvement proposals in Table 2 as particularly significant for more effective fostering of individual competence. These examples focus on three different aspects of day-to-day corporate practice: (a) formal procedures, (b) behaviour and interpersonal relations, (c) fundamental improvement proposals.

Re (a): formal procedures include the improvement proposals pertaining to participation in and structuring of objectives, calls for job rotation and organised communication. It is interesting to note that these proposals each complement the first question: i.e. they featured points which were also listed as competence-boosting examples from routine operations. Other important factors were 'high standards through diversification of work tasks', 'experience-sharing with peers and supervisors' and 'strategic planning of work organisation'. What may appear contradictory at first glance can be plausibly explained by the survey procedure. In the first stage, test persons were asked to mention both instances of competence-boosting and improvement proposals. The task in the second stage was evaluating *all* submitted proposals. It was therefore possible for one subject to list an aspect from their own everyday experience as an example which another simultaneously submitted as an improvement proposal in the first stage. In the second stage, all interviewees had to assess this aspect both as an example from work routine and as an improvement proposal. Both cases first required an estimation of the importance this factor held for fostering and requiring individual competence. A similarly high or low rating in both cases is probable and logical. Differences were more likely in the second evaluation, i.e. the extent to which examples were regarded as applicable to respondents' own sphere of activity and how viable improvement proposals were considered to be. This second evaluation was designed to interpret the apparently contradictory findings.

The complementary element of the job rotation improvement proposal was rated as very applicable in the examples of promoting competence. We can therefore assume that higher standards through diversification of work tasks are part of most respondents' occupational routine. This also explains the high marks awarded for the feasibility of this aspect. We should therefore not regard its inclusion in the list of improvement proposals as evidence of insufficient implementation.

Assessment of the other two apparent paradoxes in the findings took a different form. We can find the complementary element of the call for participation in designing, structuring and publicising objectives in the list of examples under 'strategic emphasis of work organisation'. However, this example did not score highly in terms of respondents' assessment of its relevance for their own field of activity ($z = -.15$). It therefore seems to be an unusual example. This is also reflected in the assessment of the feasibility of improvement proposals, which was generally average ($z = [-.35;-.06]$). It is therefore logical to conclude that although the subjects desire worker participation in formulating higher goals and disseminating long-term plans and regard it as important for boosting competence, it is underdeveloped in occupational practice. However, such findings conflict with

newer organisation models, which strive to instigate self-management of corporate sectors, partly in temporary partnerships. Structures of this kind presuppose that workers will shape objectives. Limited awareness of long-term plans and objectives suggests insufficient implementation of a trait common to all newer approaches. For increased delegation of decision-making powers must go hand in hand with explanation of corporate goals to lay the foundations for competent and sensible decision-making which benefits the company.

The last 'pair of opposites' is rated similarly in the different lists. The improvement proposals considered particularly significant included the call for organised communication between colleagues and feedback sessions. The feasibility of this proposal is rated especially high (z = 1.353). In comparison, experience-sharing with peers and supervisors is mentioned as a particularly important example of fostering individual competence. Nonetheless, few respondents find this item very applicable. The negative z value reflects this. It could indicate a particularly serious weakness in implementing newer organisation concepts. Both statements focus in detail on different aspects of internal communication. However, as the improvement proposals call for implementation to take an organised and thus formalised form, it follows that practice would reveal deficits which could be reduced by varying the degree of communication process organisation. This would be problematic for implementation of newer organisation concepts in two respects. First, it would indicate that corporate work organisation conditions do not foster communication between workers, and second, regulation of such communication processes would conflict with deregulation efforts.

Re (b): the second heading groups together behaviour-oriented proposals, namely calls for management to take more time to consider workers' individual strengths and weaknesses and for orientation to common values. The first proposal targets identified deficits in managerial behaviour. Its feasibility was rated as average, which leaves scope for an ambivalent interpretation. On the one hand, we can view this proposal as an expression of a shortcoming in this area, which points to a glaring obstacle to the fostering and requiring of individual competence. On the other hand, attribution of high significance reveals relevant comprehension of the problem, which bodes well for solving it.

Assessment of the orientation to shared values proposal is a different matter. As Table 2 shows, this point received a high feasibility rating. First, the proposal can be interpreted as evidence of a deficit, although the data does not indicate where the cause could lie. One plausible explanation would be that some workers are indifferent to common values. Another would be that the prevailing corporate values are not shared or are rejected.

Both possibilities, indifference and rejection, would undermine the foundations of newer organisation concepts, if they applied. Shared values play a key role, particularly in newer corporate work organisation approaches. In principle, this begins with seriously viewed and implemented delegation of responsibility and managerial powers, which grants workers freedom and opens up viable options for action and decision-making. A foundation of mutual values which necessarily shape the activity of organisation members is vital to help ensure a company's permanent existence and continued high performance on the market. It goes without saying that these values can only refer to normative orientation factors which have a bearing on corporate activity. Private or religious values should not play a role here. We can also assume that respondents observed that restriction when evaluating this proposal. The issue of the opportunities and consequences of surfacing discrepancies and value collisions between the world of work and private life is deliberately skirted.

Re (c): The third heading comprises fundamental improvement proposals, which include how to eradicate the discrepancy between accountability and freedom of action by granting wider scope for decision-making and how to embolden staff to change structures and established routines and foster creativity. These perspectives question the implementation of key aspects of modern organisation models which concern delegation of responsibil-

ity and decision-making powers; the breakdown of old, rigid structures; and innovations.

However, we can only speak of delegation of responsibility if those to whom it is delegated are given freedom to act (cf. Heid, 1999). The exceptionally high importance attached to this improvement proposal suggests that the relationship is not automatic and that responsibility in a corporate context usually means the effective mastering of externally defined tasks. Detailed findings from another part of the Delphi study confirm this hypothesis. Here respondents did not interpret responsibility (from an educational science perspective) as a moral right in the context of corporate work routine, but – in accordance with a distinction made by Tenorth (1990) – tend to regard it as a task which implies successful mastering, no matter what criteria apply (cf. Harteis et al., 2001).

The wealth of popular literature on change management (e.g. Berndt, 1998; Doppler, & Lauterburg, 2000; Gattermeyer, 2000) is not the only indication that change plays a central role in the organisation of corporate operations. Newer management concepts in particular also regard a swift reaction to market and customer demands as the best recipe for entrepreneurial success. This adaptation cannot coexist with blind adherence to established procedures. A rapidly changing or turbulent corporate environment destabilises companies. This engenders structural change, whether in interfaces with the corporate environment or within the company itself (cf. Priddat, 1999). The great significance attributed to this aspect and the call for more recognition of creativity indicates the presence of deficits in both the implementation of newer corporate work organisation models and the creation of competence-boosting work conditions.

Conclusions

Learning organisations concentrate on fostering and requiring workers' individual skills. The described study examined the extent to which workers from companies which perceive themselves as learning organisations experience the introduction of competence-boosting work conditions. As the findings show, a serious discrepancy between desirability and reality arises in learning organisation objectives.

On the one hand, the models appear to be 'on the right lines', since respondents see such corporate work organisation traits as fostering and requiring their individual skills, which is what the newer management doctrines, and particularly those of learning organisations, foresee and intend. It is also reassuring to know that a large number of respondents feel that facets of competence-boosting work conditions have been achieved in their own field of activity.

On the other hand, the findings also show that we are a long way from complete implementation of learning organisation concepts. This is evidenced by the fact that workers make improvement proposals (and hence spotlight deficits) which (a) ought already to have been realised in accordance with the objectives and (b) most respondents consider feasible. There are indications that these deficits could stem from managerial behaviour. However, the data does not provide a sufficient basis for an in-depth analysis of causality.

Learning organisation objectives therefore fulfil their potential in that workers do feel that they foster and require their individual competence. The corroboration of the assumption underlying learning organisation doctrines, that workers are interested in nurturing skills in their occupational environment, shows that they believe their field of activity has scope for individual competence development. In practice, inadequacies arise in the form of unsatisfactory implementation of objectives. These, however, do not result from a conceptual weakness but can be traced to the behaviour of individuals. We can therefore confirm the oft-stated observation that the keystone to a company's future lies in building on the competence of its staff. Enterprises which endorse these insights are under an obligation: establishment of competence-boosting work conditions is also a corporate organisation development task. The degree to which staff develop and use their skills in performing their jobs also depends on whether the occupational environment offers appropriate conditions and incentives.

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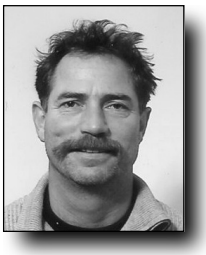
School policy-making through electronically supported discussion involving teachers and managers



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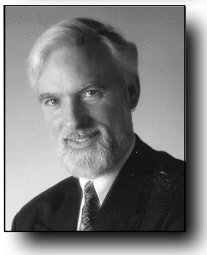

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In this article, the research question is examined whether teachers' involvement in school policy-making can be stimulated through Computer-Supported Collaborative Working (CSCW). An explorative case study on the use of an electronically supported platform for discussion among teachers and between teachers and school managers to increase teachers' participation in school policy will be described. Based on the research findings, recommendations will be formulated on how to make teachers experience the added value of CSCW with respect to formulating new school policy.

Introduction

In The Netherlands, as well as in many other countries in Europe and outside, schools are expected to successfully handle a bundle of mandated large-scale educational innovations. In secondary agricultural education, the innovations are concentrated on the implementation of a compulsory core curriculum for students in their first three years (so-called basic education) and a programme aimed at better attuning the certificates and diplomas obtained by students to vocations available outside school (so-called qualification structure) (see also Jongmans, Sleegers, Biemans & De Jong, under review). Within this framework, schools are encouraged make their own policy. To be able to develop their own procedures, strategies and guidelines for educational and organisational change, schools should have policy-making capacity (see also Giesbers et al., 1987; Jongmans, Biemans & Beijaard, 1998). School policy-making capacity can be defined as "the extent to which schools can independently perform their tasks in policy-making" (Sleegers et al., 1994, p.148).

Research has revealed that schools differ with respect to their policy-making capacity. This appears to be highly determined by the extent to which teachers participate in decision-making processes: schools in which teachers are highly involved in educational (and administrative) policy-making have more policy-making capacity that schools in which this is not so or only to a lower extent (Sleegers et al., 1994). Thus, increasing teacher participation in (major) decision-making processes is considered as a way to transform schools into more professional organisations and to improve and innovate education (cf. Jongmans, Biemans & Beijaard, 1998).

Innovation processes in schools often appear to proceed with difficulty because teachers work in isolation (see also Jongmans, Sleegers, Biemans & De Jong, under review). There are more and more indications that collaboration between teachers and between teachers and school managers can support and stimulate the improvement and innovation of education. More specifically, teachers' participation in school policy is often named as a structural work condition capable of positively influencing the implementation of innovations in schools. Participation in school policy implies that teachers consult colleagues and school managers and take decisions together about policies at school level. Research into the relation between teachers' participation in school policy and improving and innovating class practice has shown that participation has a positive influence on factors stimulating the implementation of innovations. Participation is thought to be important for the improvement of the quality of teachers' work as well. Finally, research has indicated that teachers' participation in

school policy is positively related to teachers' efficiency expectations, contributes to the acceptance of (new) policy decisions, most of the time leads to a better quality of the decisions being taken and is important for schools' capacity to pursue a policy.

Despite the positive influence of participation on the innovative way of functioning of schools and on aspects of teachers' professional functioning, teachers are not always willing to participate. Research by Smylie (1992) into teachers' willingness to participate in decision processes shows that teachers' willingness differs for each decision domain: teachers are prepared to participate most in decisions about matters that have to do with the curriculum and instruction (the educational domain). Teachers are least willing to participate in decisions about matters having to do with personnel and management (the management domain). The lack of a direct relation with the primary process and the daily practice of teachers appears to constitute an important objection for many teachers to participate in such decision-making. Furthermore, teachers' willingness to participate is influenced, among other things, by a more fundamental aspect of teachers' work. In this connection Little (1990), has drawn attention to the fact that the culture of teaching can be characterised as individualistic and conservative, in which norms of 'privacy' and individual autonomy play an important role (see also Smylie, 1992). These professional norms of autonomy and 'privacy' influence the ideas teachers have about their work and teachers' professionality with it. Seen in this light teachers' professionality could be a potential factor influencing the level of teachers' participation in decision processes (see for more details Jongmans, Sleegers, Biemans & De Jong, under review).

Thus, based on the research mentioned above, the conclusion seems justified that schools should involve their teachers in school policy-making in order to be able to innovate. In this article, the research question is examined whether teachers' involvement in school policy-making can be stimulated through electronically supported discussion among teachers and between teachers and school managers. Because of increasing workload, changing educational organisation and content, flexible timetables, part-time work and schools consisting of many locations, it has become increasingly difficult for teachers and school managers to find regular moments to consult each other face-to-face. In this respect, ICT might offer a solution. First, we will focus on Computer-Supported Collaborative Working (CSCW) in general and discuss relevant aspects of Computer-supported Collaborative Learning (CSCL) as well. After that, an explorative case study on the use of an electronic discussion platform to increase teachers' participation in school policy-making will be described. We will finish the article with some conclusions based on the case study and a discussion of the research findings.

Computer-Supported Collaborative Working (CSCW)

Specific literature on school policy-making through electronically supported discussion involving teachers and school managers is lacking. There is, however, some relation with studies carried out by Beck, Brown, Marshall and Schwarz (2002) and Mwanza (2001). Beck et al. (2002) studied teachers' roles in a team in email discussions and Mwanza (2001) studied the (dis)advantages of applying Computer-Supported Collaborative Learning (CSCL) in training on-the-job. CSCL is aimed at learning processes; the focus is on learning and knowledge construction (Veldhuis-Diermanse, 2002). CSCW, on the other hand, is aimed at working processes and is considered to be an adequate way to share information, develop opinions and make decisions in working situations. Although CSCL and CSCW can differ in aspects like target group and nature and aim of the discussions, research findings on CSCL can be relevant with respect to CSCW whereas CSCW involves aspects of learning as well.

Engeström (1987) developed a model that can be used to implement an electronic network for CSCW and to keep participants motivated during the whole dis-

Table 1:

Eight-step model for implementing an electronic network for CSCW (Engeström, 1987)

1. Activity of interest	In what kind of activity am I interested?
2. Aim of the activity	Why does this activity happen?
3. Target groups of the activity	Who is involved in carrying out this activity?
4. Tools	Which tools are used to carry out the activity?
5. Values, standards, norms	Do cultural values, standards or norms affect the task?
6. Distribution of the work	Who is responsible for which part of the task and how are roles divided?
7. Context	In which context is the activity carried out?
8. Results	Which results are being aimed at when executing the activity?

cussion (see Table 1). The model includes eight aspects of collaborative learning/working and corresponding questions that should be asked to the participants on a regular basis to discover possible bottlenecks. When implementing an electronic discussion platform to reorganise collaborative learning/working processes in order to make those processes more effective and/or efficient, it is of crucial importance that the people involved accept this new way of collaboration.

Collis, Peters and Pals (2001) developed the so-called 4-E-model. On the basis of this model, one can predict to what extent an ICT application will be used in educational practice. The model consists of four factors, namely: 1) educational effectiveness; 2) ease of use; 3) engagement; and 4) environment (organisational, social-cultural and technical factors).

In a pilot study, Alaké-Tuenter and Jongmans (2000) showed that the use of an electronic network has to compete with the teachers' other daily activities. Teachers should experience the added value of CSCW before they will consider sharing knowledge electronically on a regular basis. Besides, introducing an electronic network will transform human activities: people will do their work in another way (Orlikowski, 1992). This will not only affect the work itself, but also the working culture (Mwanza, 2001).

Another, related problem is to motivate participants in electronic discussions. In regular educational settings, interest, involvement, authenticity, current events, discussion topics, assessments, etc. will motivate people. When implementing an electronic network, participants have to become, and to stay, motivated by formulating clear goals and creating added values (see also Eales, Hall and Bannon, 2002).

Beck *et al.* (2002) stressed the importance of the presence of reflective communicators in an electronic discussion. A reflective communicator is someone who interprets information from other sources and constructs his/her own ideas and opinions. Moreover, (s)he shares these

ideas and opinions with the other participants in the discussion and stimulates them to communicate with each other. Furthermore, a moderator could coach, motivate and stimulate participants to take part in the discussions.

Mwanza (2001) studied possibilities and bottlenecks of using electronic discussion platforms in business and training on-the-job or internal knowledge management. In this way, knowledge generated while working can be shared with colleagues more easily so that they do not have to reinvent the wheel. However, results also showed that employees' social and cultural habits with respect to team working, sharing knowledge and interacting should be taken into account.

In this context, the difference between synchronous and asynchronous communication should be noted. In synchronous systems, people can work from different places in real time. In asynchronous systems, work is independent of time and place. The nature of the communication medium has a direct impact on the extent and quality of interaction between the users of that medium (Moore, 1993). Veerman and Veldhuis-Diermanse (2001) described four studies, in which university students had to work collaboratively on complex tasks by using a CSCL-system. Two of the systems used were synchronous, the other two were asynchronous. In the synchronous systems, short messages were brought into the discussions in a high frequency. In the asynchronous systems, frequencies were less high but messages were much longer. These differences characterise the various types of collaboration and communication patterns associated with synchronous and asynchronous CSCL-systems. Synchronous collaboration has to be fast; the psychological pressure to react as fast as possible is high (Moore, 1993). Synchronous discussions can be perceived as ongoing dialogues, while asynchronous discussions can be regarded more as printed text (Mason, 1992). Consequently, in synchronous communication, students have less time to search for information, their contributions are not always evaluated thoroughly, elaborated questions are asked rarely and ideas are not always supported with explanations. When choosing an electronic discussion platform, these differences should be considered and the choice for a synchronous or an asynchronous system should depend on the particular goal.

Finally, with respect to collaborative working, Irish (1994) listed the following factors as being crucial: personal responsibility, positive interdependence, supportive interaction, collaborative skills and method of working within a group. Besides, group size is of influence; a group size of eight is preferable according to Kinney and Panko (1996). Mwanza (2001) stated that the success of a knowledge management system depends on the participants' willingness to work with the system on a daily basis, to collaborate and to share information. Furthermore, it is considered to be important to organise face-to-face meetings in addition to the online discussions. In this respect, Roschelle and Pea (1999) even stated that is very difficult to create a common view or policy without having face-to-face meetings.

Case study on CSCW aimed at school policy-making

Aim of the study and research questions

As stated in the paragraph Introduction, the conclusion seems justified that schools should involve their teachers in school policy-making in order to be able to innovate. In the current project, the general research question was examined whether teachers' involvement in school policy-making can be stimulated through electronically supported discussion among teachers and between teachers and school managers. Therefore, an exploratory case study was designed. Case studies allow researchers to reveal the multiplicity of factors, which have interacted to produce the unique character of the entity under study. It is a method of learning about a complex instance through description and contextual analysis. The result is a description and theorising about why the instance occurred as it did, and what may be important to explore in similar situations.

A case study investigates a contemporary phenomenon within its real-life context; when the boundaries between the phenomenon and context are not clearly evident; and in which multiple sources of evidence are used.

The research centred on a multiple actor group (teachers and school managers) who participated in electronically supported discussions aimed at school policy-making. CSCW was introduced as a way to engage the participants in deliberative decision making (not depending on time and place) on actual topics in school policy, as opposed to free sharing of information on general educational ideas and options for innovation without actual engagement in school policy-making. In a pilot study, merely exchanging information proved not to be effective to ensure teacher participation (see Alaké-Tuenter & Jongmans, 2000). We expected that the use of an electronic discussion platform as specified above could be a valuable contribution to the collaboration between teachers and school managers and their involvement in the process of creating common views and school policy-making.

The following specific research questions were examined:

• How can the process of CSCW during electronically supported discussions among teachers and between teachers and school managers be described?

• Do the participants experience added value of CSCW with respect to their involvement in school policy-making?

• Which conditions need to be fulfilled in order to experience added value of CSCW with respect to involvement in school policy-making?

Design and procedure

From September till December 2001, six teachers and two school managers participated in three online discussion rounds aimed at school policy-making (supported by face-to-face meetings) on a voluntary basis. Although these teachers and school managers were used to share information by using e-mail, CSCW was a new way for most of them to share and discuss information concerning specific topics in education and to formulate new school policy. The case study consisted of three phases:

• Phase 1: *Introduction session* (face-to-face):

This session was meant to introduce the electronic discussion platform Web Knowledge Forum (WebKF - KF, 2001) and to explain the aim and procedure of the study. Moreover, subjects filled in an online questionnaire concerning knowledge, skills and attitudes with respect to electronic discussion platforms.

• Phase 2: *Three electronic discussion rounds* lasting about three weeks each; these discussions were studied and described in-depth:

For each discussion round, school managers formulated topics for discussion related to actual school policy to motivate the participants (cf. Eales, Hall & Bannon, 2002). The electronic discussion forum Web Knowledge Forum (WebKF) was used to support CSCW processes of creating common views and formulating school policy. WebKF (KF, 2001) is an asynchronous discussion platform developed by the Ontario Institute for Studies in Education (OISE) (see also Veldhuis-Diermanse, 2002). In WebKF, participants can write new contributions (new notes) as well as reply notes (build-on notes) and authors can edit their written notes. It is possible to write alone or with co-authors. Furthermore, participants can make links or reference notes. Besides writing notes, participants can read all the notes in the system. Furthermore, it is possible to see who has read a certain note and how many times this has been done. Notes are organised in a view or folder, a thematic discussion list. All notes in a view are structured by a thread, but it is also possible to structure notes by author or by date. Two directories are created for larger documents. Each participant has a personal directory and, moreover, there is a shared directory. Finally, in WebKF there is an option to consult WWW-sources. The discussions were monitored actively and subjects were stimulated to participate in the discussions (see also Alaké-Tuenter & Jongmans, 2000). School managers summa-

rised the discussions on a regular basis and formulated conclusions for school policy.

• Phase 3: *Evaluation session* (face-to-face):

This meeting was organised to evaluate the discussions; subjects again filled in the online questionnaire concerning knowledge, skills and attitudes with respect to electronic discussion platforms; in this questionnaire, the added value of electronic discussion platforms was questioned as well.

Research findings

Expectations

All participants had a computer with Internet connection both at home and in school. Before the start of the discussion rounds, they expected to log in a few times a week or at least weekly to participate in the discussions. Most of the participants had positive expectations concerning the use of WebKF to share and discuss information from the perspective of formulating school policy. The following quotations are illustrative in this respect:

• *"As a co-ordinator, I want to probe opinions concerning actual issues and organise arguments in order to prepare decision making in staff meetings."*

• *"I think it is useful to share different kinds of knowledge and questions."*

• *"I hope to gain experience on the process of informing other people and being informed by people who cannot spend much time together in real life."*

• *"I hope to receive more input and support for decision making."*

• *"I hope to be introduced to the possibilities of an electronic discussion forum that can be used both for organisational matters and learner-centred activities."*

• *"I expect discussions to improve in terms of purposefulness and thoroughness through using an electronic discussion platform. Besides, I think that I will be more involved in school policy since I work part-time."*

• *"I do not have clear expectations. I hope that both the involvement in decision processes and the quality of the decisions will improve. Maybe it is possible to optimise the total process of school policy-making."*

Discussion rounds

• First discussion

The first discussion round dealt with the topic "organisation of internships" based on a concrete proposal. Six (of eight) participants took part in the discussion. Remarkably, interaction mainly occurred between teachers and school managers; teachers rarely interacted with each other. Sixteen messages were contributed to the discussion. Six messages were meant to clarify the subject, seven messages contained comments and/or suggestions with respect to the topic, one reaction summarised the discussion resulting in a conclusion and two messages were reactions to this summarising note. Afterwards, the school management stated that the ideas and opinions generated by the teachers were useful for formulating new school policy.

• Second discussion

The topic of the second discussion round was "assessment of learning results" and again a concrete proposal was formulated. Half of the participants took part in the discussion and they contributed six messages. One message was meant to clarify the subject of discussion, four messages contained comments and/or suggestions on the level of content and one reaction summarised the discussion resulting in a conclusion. As in the first discussion round, teachers did not react to each others' contributions. Interaction took place between school managers on the one hand and teachers on the other hand. According to the school management, several suggestions could be helpful to prepare new school policy but further elaboration and debate was considered necessary.

• Third discussion

The third discussion focussed on the topic "role of providers of internships".

Three participants took part in the discussion and they put only five messages on the forum. Two messages were meant to clarify the subject, two messages contained comments and/or suggestions on the level of content and one reaction summarised the discussion resulting in a conclusion. Again, interaction only occurred between school managers and teachers. In this case, the school management did not get enough input to formulate new policy. Further discussion appeared to be necessary. In this respect, the school management expressed the intention to continue using WebKF for discussions aimed at school policy-making.

Evaluation

Most participants had experienced WebKF as user-friendly. Because of lack of time, they had spent only about a quarter of an hour per week working in WebKF. Half of the participants considered the chosen topics as adequate for discussion in WebKF from the perspective of preparing school policy. However, it was considered of crucial importance to formulate topics and proposals for electronic discussions in a clear, unambiguous way. Almost all participants were satisfied with the composition of the group (teachers and school managers). Group size, however, was considered to be too small. The participants found it useful to have a moderator stimulating participation and structuring the discussions. They mentioned as an advantage of CSCW that participants responded in a well-considered way. A disadvantage, on the other hand, was the lack of personal contact.

Almost all participants were unsatisfied with their own level of participation and the interaction between participants in general. Although they had expressed the intention to participate in the discussions to a higher extent, most of them did not achieve this goal. As reasons for their lower level of participation, subjects mentioned the activity level of their colleagues and the lack of real interaction between the various participants. As a consequence, teachers did not feel as involved in the policy-making process as they had thought they would be. They expressed that they were still convinced about the benefits of CSCW but that, under the conditions of these discussion rounds, the full potential of CSCW had not been used. According to the participants, clear rules regarding school policy-making through electronically supported discussion should be formulated and followed during CSCW.

Conclusions and discussion

This case study was carried out to explore possibilities to increase teachers' involvement in school policy-making through electronically supported discussion among teachers and between teachers and school managers. In this respect, the following specific research questions were formulated:

- How can the process of CSCW during electronically supported discussions among teachers and between teachers and school managers be described?

- Do the participants experience added value of CSCW with respect to their involvement in school policy-making?

- Which conditions need to be fulfilled in order to experience added value of CSCW with respect to involvement in school policy-making?

With respect to the first question, the conclusion can be formulated that, in general, the process of CSCW was characterised by interaction between teachers and school managers and not among teachers themselves. Teachers mainly reacted on the proposals for school policy formulated by the school managers and they did not discuss these proposals with their colleagues. The quality of these reactions differed for the various discussion rounds. The ideas and opinions generated by the teachers in the first round were useful for formulating new school policy. During the last round, however, the quality of their responses turned out to be rather poor. Moreover, the level of participation decreased during the study. According to the teachers themselves, clear rules regarding school

policy-making through electronically supported discussion are necessary to increase and ensure participation and interaction. Such rules should be agreed upon at the beginning of CSCW and followed by all participants during the discussions. Therefore, especially at an early stage, a discussion supervisor should monitor the whole process of electronically supported discussion aimed at school policy-making.

To monitor and analyse the content of contributions to electronic discussions, classification systems can be used, e.g. the scheme developed by Veerman and Veldhuis-Diermanse (2001). They distinguished between task related and non-task related messages. Task-related messages include new ideas, explanations and evaluations. A new idea focuses on relevant content not being mentioned before. An explanation is a contribution in which existing information is refined or elaborated. An evaluation is a message in which an earlier contribution is critically discussed and, often, involves reasoning processes or justifications. Although this classification scheme was developed in the context of CSCL, discussions on a CSCW platform could be analysed with this system as well. Besides analysing discussions on type of contributions, the classification system could also be useful to moderate discussions and to minimise the number of non-task related messages. In other words, the discussion supervisor could use such a classification system to monitor the content of the contributions of the participants and to give them specific feedback with respect to the nature of their own comments and suggestions.

Regarding the second research question, the conclusion can be drawn that participants did experience some added value of CSCW with respect to their involvement in school policy-making. However, although the participants were rather positive and believed in the possibilities of electronic discussion platforms to support teamwork of teachers and school managers in order to formulate new school policy, almost all of them were unsatisfied with their own level of participation and the interaction between participants in general. As a consequence, teachers did not feel as involved in the policy-making process as they had thought they would be. They expressed that they were still convinced about the benefits of CSCW but that, under the conditions of these discussion rounds, the full potential of CSCW had not been used. In a way, the use of the electronic network (again) lost the competition with the teachers' other daily activities: apparently, teachers should experience even more added value of CSCW before they will consider sharing knowledge electronically on a regular basis (cf. Alaké-Tuenter & Jongmans, 2000).

According to the participants, clear rules regarding school policy-making through electronically supported discussion should be formulated and followed during CSCW. This conclusion refers to the third research question (Which conditions need to be fulfilled in order to experience added value of CSCW with respect to involvement in school policy-making?). With respect to discussion rules, participants should know: the aim of the discussion, the topics of discussion, the approach used to tackle the problem, their expected roles, how the results of the discussion will be used, and so on (see also Irish, 1994; Eales, Hall & Bannon, 2002). The 8-step model of Engeström (1987) could be useful to implement CSCW, to organise and to support collaboration between teachers and school managers and to find out possible bottlenecks at an early stage. According to Engeström, failures or conflicts in carrying out activities serve as a basis for developing new insights concerning tools to use and possible activities by the participants (learning by expanding).

Another suggestion, following Beck *et al*. (2002), would be to deliberately include several participants in a discussion group who can be characterised as reflective communicators. As stated earlier, a reflective communicator is someone who interprets information from other sources and constructs his/her own ideas and opinions. Moreover, (s)he shares these ideas and opinions with the other participants in the discussion and stimulates them to communicate with each other. According to Beck *et al*., a minimal critical mass of reflective communicators is necessary to keep a discussion alive. Not the amount of messages being contrib-

uted to the discussion, but the content of these contributions determines whether a participant is a reflective communicator or not.

Moreover, a moderator should coach, motivate and stimulate participants to take part in the discussions. The influence of a moderator, however, should not be overestimated. Although a moderator can grow in his role(s), (s)he cannot be expected to fulfil the roles of problem solver, technical facilitator, editor, manager, content expert, discussion leader and motivator at the same time (Berge & Collins, 2000; McConnell, 2002). Additionally, organising face-to-face meetings regularly is assumed to be useful to stimulate group feeling, to short-circuit procedures, and to evaluate progress: without having face-to-face meetings, creating a common view or policy is difficult (see Roschelle and Pea, 1999). Finally, participants should have enough time to read each others' contributions, to reflect and to (re)formulate own ideas. With respect to formulating new school policy, deliberative thinking is more important than speed: in this respect, the use of asynchronous communication systems is preferable (cf. Mason, 1992; Veerman & Veldhuis-Diermanse, 2001). When such conditions are met, teachers' willingness to work with an electronic discussion platform, to collaborate with each other and to share information is likely to increase.

What could be the impact of improving and realising the above-mentioned conditions for electronically supported collaboration involving teachers and school managers on the running of schools? In our opinion, thus, both the quality and the effectiveness of collaborative policy-making are likely to be fostered. In other words, the quality of joint contributions of teachers and school managers with respect to (re)formulating school policy is likely to improve. The same holds, in our view, for the effectiveness of their discourse, especially when the effects of the CSCW sessions are reinforced by face-to-face meetings aimed at collaborative school policy-making. When teachers participate to a higher extent and with better results in school policy-making, the school's policy-making capacity will increase: teachers' participation in school policy is often named as a structural work condition capable of positively influencing the implementation of innovations in schools. In this way, running the particular school will become more professional whereas the school staff will be more able and prepared to innovate if necessary. Moreover, as mentioned in the introduction session, participation is thought to be important for the improvement of the quality of teachers' work as well. Finally, teachers' participation in school policy appears to be positively related to teachers' efficiency expectations, to contribute to the acceptance of (new) policy decisions, and to be important for schools' capacity to pursue a policy.

In our view, effects may be expected especially with respect to the educational domain of school policy (as opposed to the administrative management domain). According to Smylie (1992), teachers are prepared to participate most in decisions about matters that have to do with the curriculum and instruction (the educational domain). Teachers are least willing to participate in decisions about matters having to do with personnel and management (the administrative management domain). As stated in the introduction session, the lack of a direct relation with the primary process and the daily practice of teachers appears to constitute an important objection for many teachers to participate in decision making in the administrative management domain. Therefore, as a result of increasing quality and effectiveness of decision-making processes, especially the quality of the school's decisions with respect to curriculum and instruction may be expected to increase. The topics of the various discussions in our own study ("organisation of internships", "assessment of learning results", and "role of providers of internships") can serve as examples of specific themes in the educational domain. Moreover, when teachers participate in formulating educational school policy, they are more likely to support this policy and to implement the new policy in their own classroom practice (as opposed to situations in which the school management imposes the school's educational policy on them). In our view, this may result in more successful educational innovations, for example with respect to implementing new didactical

and educational guidelines, learning environments, and assessment procedures.

Stimulating teachers' involvement in school policy-making might also have a positive effect on the culture of teaching, which is often characterised as individualistic and conservative (see also Smylie, 1992). It is considered important for the development of innovative schools that teachers should not only concentrate on their own practice, but also on their colleagues and the school organisation as a whole. In this respect, it is crucial to pay attention to the development of a collective engagement of teachers and to working in a professional community. This might also have a positive influence on the improvement of one's own practice and the enhancement of teachers' involvement with present-day complex and demanding work situations. The teachers participating in our study indicated that computer-supported collaborative working could have clear benefits in this respect, provided that the above-mentioned conditions are met. Thus, to conclude, school policy-making through electronically supported discussion involving teachers and managers might not only be a way to increase the schools' policy-making capacity but also to reduce the individualist culture of teachers.

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Enterprise creation initiatives in Basque vocational training centres

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This article sets out to examine the initiatives developed to foster the entrepreneurial spirit and the creation of enterprises by students in the specific context of vocational training in the Basque Country. The article therefore looks in depth at best practice in the centres of the Basque Autonomous Community, with the aim of disseminating first-class experiences to other training centres in Europe.

1. Introduction. Vocational training in Spain and the Basque Autonomous Community

The vocational training system in Spain is currently arranged in accordance with the Organic Law on the Education System (LOGSE, 1990). Under this Law, the new vocational training system is split into three levels: initial/compulsory education, job training, and continuing training. Continuing training for workers falls under the Labour Administration, and a substantial part of it is managed through the Foundation for Continuing Training (FORCEM ([1])), while the national and autonomous Labour Administrations are responsible for compulsory education and job training for unemployed workers (Perez Esparrel, 2000).

LOGSE has led to the introduction of a series of highly pertinent reforms that have had a considerable effect on teaching in vocational education and training. The introduction of these subjects into the education system is reflected in figure 1:

In contrast to the situation that obtained before LOGSE, in which it was possible to enter vocational training at the age of 14 years without completing the preceding basic education, compulsory education now extends until 16 years of age, and it is necessary to have successfully completed compulsory secondary education (ESO) to proceed to intermediate vocational training. In order to pursue advanced vocational training, it is necessary to have gained the upper secondary leaving certificate, the Bachillerato. These increased educational requirements have led to a re-evaluation of vocational training so that it is no longer regarded, as it used to be, as a form of education taken up by less well prepared students who do not wish to continue studying.

While 82 % of Spanish compulsory vocational education students had no contact with the world of work in the school year 1995/96 (CEDEFOP, 2001), the gradual adoption of LOGSE has led to the inclusion of the compulsory module 'Work Centre Training' in all intermediate and advanced courses. This module provides for placements in enterprises lasting from 8 to 15 weeks, and has brought about closer ties between training centres and employers, which helps those completing vocational training to find jobs.

In respect of growth in student numbers, the figures for completion of vocational training in Spain are far removed from the European average, where vocational training attracts more students than general upper secondary education. By contrast with such countries as Austria, Germany and Italy, where more than 70 % of students follow vocational courses, the figure is only 33 % in Spain (EURYDICE, 2000), a higher number of students going on to the Bachillerato and subsequently to university. Only Ireland and Portugal in fact have a percentage of students in vocational training lower than Spain (CEDEFOP, 2001).

The situation is similar in the Basque Country, and has led to growing concern over the match between the education system and the needs of employers. According the Basque Employers' Federation CONFEBASK, there is a shortage of 18 000 workers in the Basque Country with basic vocational training, while the

([1]) The Basque Foundation for Continuing Training (HOBETUZ) was set up in 1997 and has independent control of training for people in work in the Basque Autonomous Community.

supply of university graduates has grown more rapidly than the demand, and has led to high levels of unemployment among graduates (CONFEBASK, 2000; Araujo et al., 2001). Some research studies of Spain as a whole reveal the same problem, suggesting the existence of a phenomenon of 'overeducation' which is giving rise to high rates of unemployment and to working conditions for Spanish graduates that are worse than those of European graduates (Albert et al., 2000; Dolado et al., 2000; Sáez and Rey, 2000; García Montalvo and Mora, 2000).

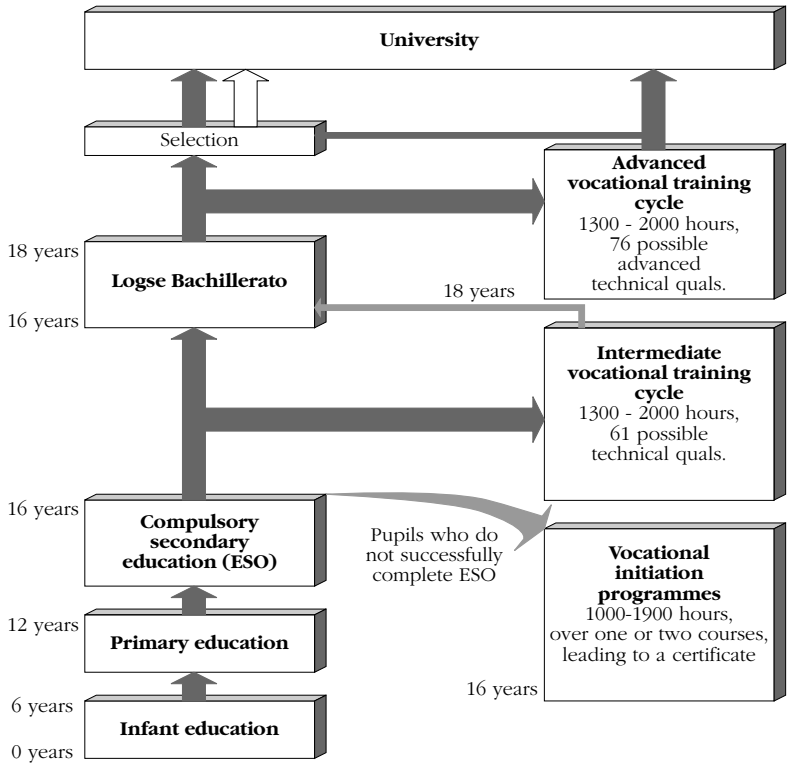
The scarcity of people who have completed vocational training has led to an increase in the resources devoted to this type of education by the national government, the autonomous communities and the local authorities. Both Central Government and the Basque Government, and provincial governments, are carrying out publicity campaigns to attract more students to these courses, and employers' associations have also become involved in promoting them. In the Basque Country, this joint effort has produced a rise in the quality rather than in the quantity of students. In the last three years, for example, the number of students in intermediate courses has fallen by 40 % while there has been a rise of 66 % in admissions to advanced vocational training courses, which currently account for 58 % of the 31 000 and more Basque students of vocational training (EUSTAT, Education Statistics).

The vocational courses most sought after by students at intermediate level are in engineering, electricity and electronics, hairdressing and beauty, and plumbing. In advanced vocational training, it is administration, engineering, electricity and electronics, and information technology which have the largest numbers of students. The high numbers of students in technical fields such as engineering reflect the business situation in the Basque Country, which has a relative preponderance of industry.

In terms of legal status, there are more public vocational training centres in the Autonomous Basque Community than private. The private network takes the lead in training, however, in the three provinces ([2]).

Figure 1:

Organisational plan of the education system.



Source: Department of Education, Universities and Research of the Basque Government. http://www.euskadi.net/lanbidez/fp/organigrama_c.htm

2. Aims and methodology of courses

This article forms part of a research project ([3]), the main aim of which has been to analyse the relationship between vocational training centres and employment in the Basque Autonomous Community. Within this research, one of the aims of the research team has been to study the initiatives implemented by various centres to foster the entrepreneurial spirit and the creation of enterprises by students, exploring in depth the best practices that exist in the centres in the Basque Country.

Although many European vocational training centres are fostering the entrepreneurial spirit and enterprise creation, these initiatives are seldom reported in scientific articles and publications. This is the reason why we are presenting this article, in the belief that experience of enterprise creation in a number of Basque vocational training centres may provide

([2]) For greater detail on vocational training in Spain and the Basque Country see LOGSE, 1990; Perez Esparrel, 2000; Alonso García, 2000; Gobierno Vasco, 1998, 2001; Basterretxea et al., 2002; Ministerio de Educación, Cultura y Deporte, 2002.

([3]) This project was subsidised by the Department of Employment and Training of the Bizkaia Provincial Government, the company DEMA Enpresa Garapena, and the European Social Fund, and its results are published in Basterretxea et al. (2002), *Colaboración entre centros de Formación Profesional y empresas en la Comunidad Autónoma Vasca.* Bilbao: Servicio Editorial de la UPV/EHU.

Table 1:

Vocational training centres taking part in the study

Centres belonging to the IKASLAN public network		Centres belonging to the HETEL private network
Questionnaire alone: 1. IES Barrutialde (Arratzu) 2. Iurreta GLHB Institutua 3. Instituto EFPS Fadura 4. Mutrikuko Institutua 5. Instituto Politécnico Easo 6. Martuteneko BHI 7. Donostiako Eraikuntzako Institutua 8. IEFPS Bidasoa GBLHA 9. Instituto Plaiaundi 10. Herrnani Institutua 11. RM Zuazola-Larraña BHI 12. Don Bosco –RENTERIA 13. UNI. Eibar-Ermua 14. IES Hostelería de Gamarra 15. IES. 'Samaniego' La Guardia	**Interview and questionnaire**: 1. Instituto FP superior Nicolás Larburu (Barakaldo) 2. IEFPS Ategorri-Tartanga (Erandio). 3. IMH –Elgoibar 4. IEFPS- Usurbil 5. IEFPS Mendizabala GLHBI **Interview alone:** 1. Elorrieta 2. San Jorge 3. Emilio Campuzano	**Questionnaire alone:** 1. San Viator 2. Zulaibar 3. Zabalburu 4. San José Obrero 5. Lasalle **Interview and questionnaire:** 1. Lea –Artibai 2. Txorierri 3. Instituto Politécnico Jesús Obrero. 4. Diocesanas 5. Somorrostro 6. Goierri **Interview alone:** 1. Zumarraga. 2. Escuela Politécnica Superior de Mondragón.

Source: Compiled by authors

guidelines and practices that can be transferred to other vocational training centres in Europe.

The literature on the creation of enterprises in training centres is scarce, focuses almost exclusively on university experience, and largely consists of conference and seminar reports in which university teachers and heads of university enterprise development centres or 'nurseries' discuss good practice (Meneses, 2001; Rubí, 2001; Tornatzky et al., 2002; Chiesa and Poccaluga, 2000; Leiceaga, 2001; López, 2001; Ullastres, 2001; MADRI+D, 2000). Some of the results of this research can easily be transferred to vocational training centres in the Basque context, as will be seen later on in some of the cases examined in this paper. The main lines of research in these publications are the following:

• obstacles facing researchers and university teachers as entrepreneurs (Tuominen, 2000; Churchwell, 2000; De la Sota, 2000; Blanco, 2000; Meneses, 2001);

• problems of funding new enterprises, obtaining financial resources from risk capital, and financing of new enterprises by universities themselves (Sandelin, 2000; Numark, 2000; Churchwell, 2000; Cullen, 2000; López, 2001; Ullastres, 2001; Tornatzky et al., 2002);

• infrastructure, incubators, technology parks, and human, educational and financial media available to some universities to support enterprise initiatives (Sandelin, 2000; Cullen, 2000, Rubí, 2001; López, 2001; Ullastres, 2001; Tormatzky et al., 2002);

• use of contacts between universities and local businesses and institutions to establish networks bringing together researchers, entrepreneurs, suppliers and investors (Numark, 2000; Sandelin, 2000; Tormatzky et al., 2002);

([4]) We used a questionnaire of our own design to gather data. The questionnaire was pre-tested with students of the intended recipients in order to assess its suitability and the relevance of the items in it. The version of the questionnaire sent to training centres is contained in Annex II to Basterretxea et al. (2002).

([5]) Seventy-two centres were selected out of a population of 170 vocational training centres in the Community of the Basque Country. The criterion for selection was inclusion in the network IKASLAN (a network which covers 82.15 % of students admitted to public vocational training centres) or HETEL (which covers the most important privately run centres, accounting for 54.45 % of students admitted to private centres). The selection of the sample followed consultation with the leaders of the Vocational Education

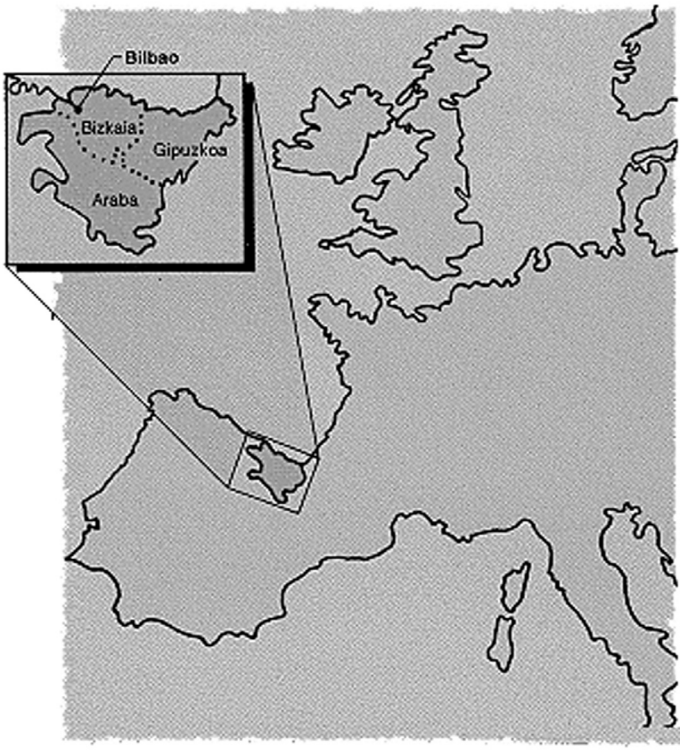
• the importance of university leadership and corporate culture in the success or failure or various programmes supporting enterprise creation (De la Sota, 2000, Meneses, 2001; Rubí, 2001; Tornatzky, 2002; Leiceaga, 2001; Ullastres, 2001).

In order to carry out our research, we collected information about experiences of enterprise creation in various centres by means of a questionnaire ([4]) that was designed and sent to 72 Basque vocational training centres ([5]), and semi-guided interviews with various centre directors ([6]). In total, 36 vocational training centres took part in the study, 23 of the 53 public centres contacted, and 13 of the 19 private.

The centres shown in Table 1 are distributed throughout the three provinces which make up the Basque Autonomous Community: Bizkaia, Gipuzkoa and Araba.

Figure 2:

Autonomous Community of the Basque Country



3. Support for the creation of enterprises by students in Basque vocational training centres

In recent years, certain vocational training centres have developed a variety of programmes to foster the entrepreneurial spirit of their students and to help them to set up new business projects. As can be seen from the following table, only three of the directors of centres interviewed stated that the creation of enterprises was not an aim of the centre. Almost half of centres restrict themselves to fostering students' entrepreneurial spirit, around a third have the support of various regional development agencies, employers' associations or institutions devoted to the creation of enterprises, and six centres have their own enterprise creation schemes.

The level of development of these initiatives varies greatly from centre to centre, and the result in terms of number of enterprises created, and particularly the nature of those enterprises (size, jobs, turnover, market strength) varies according to the role, scale and resources which the centres put into self-employment schemes.

In order to make the range of enterprise creation support schemes clearer, we shall divide them into two groups: the first will include initiatives focusing on awareness-raising and the fostering of the entrepreneurial spirit, which in some cases give rise to the creation of small enterprises; and the second will cover those initiatives demanding greater commitment to the student entrepreneurs on the part of the centre, which has led to the creation of more enterprises of larger size.

3.1. Awareness-raising activities and creation of micro-enterprises

Most of the activities to support enterprise creation carried out in the vocational training centres are limited to awareness-raising and the fostering of the culture of enterprise. This means stimulating students' entrepreneurial spirit through discussions and courses led by either teachers at the centres, members of develop-

and Lifelong Education Council of the Basque Government, who confirmed that the sample was representative for the purposes of the study. According to the Council and other sources consulted, the relations between enterprises and training centres that we wished to evaluate (continuing training, job training, training on demand, research, company participation in centre boards of management, support given to centres in the form of funding or machinery, enterprise creation, etc.), centred almost exclusively on the sample of 27 centres.

([6]) Semi-guided interviews were held in eight public and eight private centres, all of them vocational training centres. Three directors of IKASLAN were also interviewed, as was the President of HETEL and his predecessor in that office.

Table 2:

Support by Basque vocational training centres for the creation of enterprises by students

	Frequency	Percentage
We have our own enterprise creation scheme	6	17.1 %
We work with a development agency or an institution specialising in the creation of enterprises	10	28.6 %
The creation of enterprises is not an aim pursued by this centre	3	8.5 %
We do not create enterprises, but we foster the entrepreneurial spirit	16	45.7 %

Source: Compiled by authors from surveys and interviews with directors of centres

ment agencies, public agencies working in the creation of enterprises, or employers' associations. If as a result of these awareness-raising activities, students are interested in creating an enterprise or wish to study its viability, they are directed to the agencies and institutions specialising in supporting founders of small businesses ([7]). It is these bodies that will provide support for those moving on to an actual enterprise creation project, since training centres do not usually give significant systematic support to nascent businesses. In some cases, students are merely given office accommodation at low rent, the temporary use of some machinery or computers, and tutorial advice from a teacher.

Of the centres surveyed, 75 % restrict themselves to a strategy of awareness-raising, either on their own or with the help of other institutions, and this seldom gives rise to the creation of enterprises. Of the 26 centres in this category, only three stated that their students had created enterprises in recent years: Jesús Obrero (Araba), San Jorge (Bizkaia) and Hernani Institutoa (Gipuzkoa). The San Jorge de Santurce centre, in association with the DEMA-Enpresa Garapena Foundation and other bodies, carries out this work of supporting enterprise creation by analysing the viability of projects. In this way, 12 small enterprises have been created, seven of which are still operating. According to data supplied by Hernani Institutoa, its students created 17 enterprises between 1995 and 2000, generating 56 jobs.

In our view, the fact that 90 % of centres opting for this awareness-raising approach have not created any enterprises should not be seen in a negative light. It does not mean that programmes to promote the entrepreneurial spirit are a failure. Their effectiveness and efficiency should not be measured by the immediate creation of enterprises but by a broader range of medium and long-term indicators. In the first place, as some of the directors interviewed stressed, fostering the culture of enterprise is not aimed exclusively at those opting for self-employment, but has a positive impact on students' entrepreneurial and innovative capacity in future jobs working for others. As is pointed out in Araujo et al. (2001), while vocational training students may not put into practice an entrepreneurial idea that they have developed in the classroom, it is likely that the positive attitudes towards enterprise creation that they acquire in the centre will translate into new businesses in the future, when they are older. This opinion was expressed by a number of the directors of vocational training centres interviewed.

Fundamentally, the centres that have chosen this approach to supporting enterprise creation put forward two reasons for not moving on to the next stage of collaborating with and helping students to set up businesses:

a) a high number of vocational training students find jobs, which suggests that few wish to set up their own businesses;

b) there is no desire to duplicate services providing support for entrepreneurs. Some centres do not see that they should do the job of development workers, duplicating the services of agencies which function well already.

In our opinion, however, the fact that there are development agencies in the environs of centres should not be an obstacle to centres' playing a more active role in supporting students' entrepreneurial initiatives.

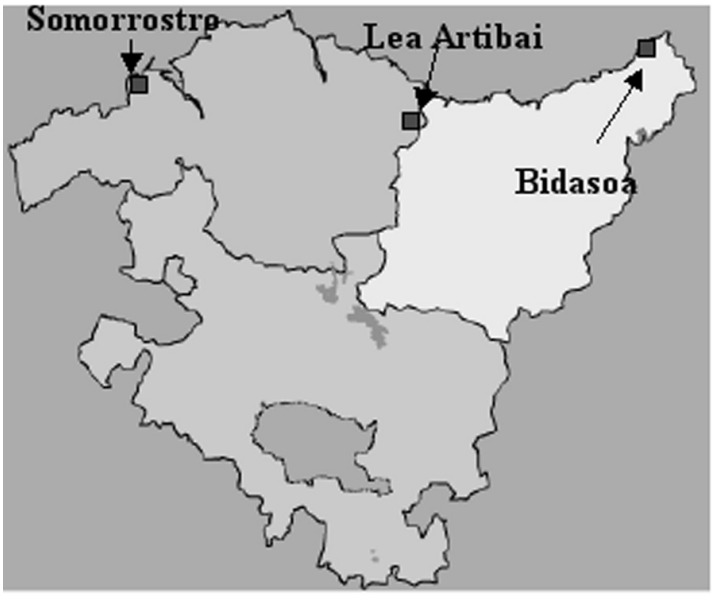
([7]) Mention should be made of cases in which collaboration is continual and habitual, such as the Usurbil centre, which works with the CEI Saiolan Enterprise and Innovation Centre, the Diocesanas centre, which works with the AJEBASK Association of Young Basque Entrepreneurs and the development agency of the Vitoria local authority, many Bizkaia centres which work with DEMA, the Txorierri centre with a company called I+D, etc.

3.2. Enterprises created with a 'push' from a vocational training centre and local businesses

There is a smaller group of training centres that have developed enterprise creation schemes going beyond the fostering of the entrepreneurial spirit and giving rise to the birth of enterprises on a sizeable scale, which have initially provided a substantial number of jobs. These are the initiatives of the private centres Lea Artibai and Somorrostro, and the public Bidasoa centre, the geographical location of which is shown in detail on the following map:

Figure 3:

Location of the Somorrostro, Lea Artibai and Bidasoa Vocational Training Centres in the Basque Autonomous Community



The initiatives of these three centres are very similar to some university enterprise creation schemes. The aspects common to the three initiatives are as follows:

There is a close relationship between the training centre and local businesses, which enables it to identify unmet needs and opportunities for subcontracting. Many initial contacts with client companies, for example, including business ideas that have then prospered, have not come from the founders of the enterprises themselves, but from training centre staff ([8]).

Support for the creation of enterprises is seen as an important aim and is firmly rooted in the corporate culture of the centres. Some research suggests that universities with successful enterprise creation schemes regard these schemes as important, worthy of respect and central to the purpose of a university (De la Sota, 2000; Meneses, 2001; Rubí, 2001; Tornatzky et al., 2002; Leiceaga, 2001; Ullastres, 2001), and the same can be said of the Lea Artibai, Somorrostro and Bidasoa Vocational Training Centres.

A tutorial scheme provides long-term monitoring and support from professional staff at the centres for the new entrepreneurs. The training centres have staff devoted to promoting enterprises, and they also provide help with equipment, machinery and infrastructure to student entrepreneurs.

Centres foster the entrepreneurial spirit by establishing ways in which their students can see, learn from, appreciate and imitate former students who are setting up businesses or have already done so successfully.

While the predominant economic sectors that surround and influence the centres differ considerably, the economic environment of all three is weak, so that they are required to pursue a more active policy of support for new enterprises ([9]). According to Tormatzky et al. (2000), something similar happens at universities in the United States ([10]).

3.2.1. The experience of the Lea Artibai Vocational Training Centre

The Lea-Artibai Technical College (Bizkaia) is a non-profit-making cooperative. Besides compulsory vocational education, continuing training and job training, it also teaches the Bachillerato and has for the last few years been offering university courses. Since the centre was structured as a cooperative in 1976, it has belonged to the Mondragón Corporación Cooperativa Group (MCC). This Group incorporates over 150 enterprises and has grown into the largest industrial corporation in the Basque Country, and the sev-

([8]) The establishment of networks linking researchers, entrepreneurs, suppliers and investors is also regarded as a key factor in research on the creation of enterprises in universities. It is easier to establish networks if the university plays a very active part in various voluntary bodies with local businesses and institutions (Numark, 2000; Sandelin, 2000; Tormatzky et al., 2002). The main difference in respect of the vocational training centres studied here is that these use such networks to find ideas and clients, while universities use them principally to look for funding to refine and check business ideas before launching them on the market.

([9]) The economic environment of the Somorrostro centre has been affected by a succession of crises in major industries in the engineering and shipbuilding sectors to the west of Bilbao. In the case of the Bidasoa centre, besides the crisis in some traditional local industries, the disappearance of European borders also led to the disappearance of many jobs associated with Customs activities in the 1990s. And finally, in the case of Lea Artibai, fostering new enterprises is seen as a form of economic development in a weakly industrialised area.

([10]) Except for Stanford, the universities which stand out for their contribution to regional economic development are stimulated by weak regional or state economies.

Table 3.

Creation of enterprises at the Lea Artibai Vocational Training Centre ([14])

	1998	1999	2000
No of enterprises created	1	2	2
No of jobs generated	9	7	9

Source: Compiled by authors

enth largest in Spain (Mondragón Corporación Cooperativa, 2002). Relations between Lea Artibai and local businesses are not limited to the enterprises in the Corporation, and comprise the provision of a large number of hours of continuing training, technological services, participation by various enterprises in its management bodies, and considerable ongoing financial support from the enterprises.

Support for the creation of new enterprises with the assistance of training centres is a key part of the corporate culture of Mondragón Corporación Cooperativa ([11]) and of the Lea Artibai centre. The importance given to the development of new business activities in Lea Artibai is reflected partly in the mission statement of the centre itself, which gives equal status to this aim and other educational aims (Lea Artibai Ikastetxea, 2002).

In the mid-1990s there was a proposal to set up a local development agency in Lea Artibai. When this initiative failed, the Vocational Training Centre set about establishing a foundation involving the local authority of Markina and other local authorities in the area, with the aim of supporting the creation of local enterprises.

Some of the services provided by the foundation to those setting up enterprises are similar to those offered by other bodies: premises, free light and telephone, a bursary of EUR 360 a month for new entrepreneurs, advice and tutorial support, and so on. The differences from other institutions devoted to promoting enterprises derive from the synergies that exist between the foundation and the Lea Artibai Vocational Training Centre. The close relationship between the centre and local businesses, and the use of the training centre's infrastructure and machinery for these new enterprise activities, mean that it is possible to set up and consolidate enterprises that could not be created by a conventional development agency because of the nature of the technology used and the market in question.

'It's not like going through an agency because if the new entrepreneurs have a technical project, we have the necessary materials and machinery at the centre. Above all, the most valuable thing we have is the connections with the local businesses that are their potential customers. This is the greatest advantage over a development agency.' (Arizmendi, M. ([12]))

To date, five enterprises have been set up, and nine are currently in the nursery stage, involving a variety of projects such as furniture manufacture, catamarans, plastic injection, rapid prototype casting, aluminium and fish-based foodstuffs ([13]).

Support from the training centre for the development of new enterprise projects follows a process summarised in the following table:

As can be seen in Table 4, the process starts and ends with ways of fostering the entrepreneurial spirit and of attracting new entrepreneurs. Besides motivation and awareness-raising courses ([15]), which are also taught in most other centres, a competition is held for business ideas, and students are given information about enterprise projects that are running ([16]). In the last stage of the process, the entrepreneurs who have created or are creating enterprises at the centre give an undertaking to foster the local enterprise culture.

Many directors of vocational training centres stated that it was difficult to motivate students to create enterprises where there was no shortage of jobs, but it is believed at the Lea Artibai centre that the key to successful motivation is to select students who are highly creative ([17]), to direct their potential towards the creation of enterprises, and to arrange for entrepreneurs present at the training centre to stimulate students to emulate them:

'Over time, we identify a percentage of people who are creative, have a need to

([11]) The first enterprise in this commercial group was in fact set up in 1956 by five former students of the Vocational School, currently the Mondragón Higher Polytechnic School, with the support of its director José María Arizmendiarreta. Other enterprises in the group were set up later in collaboration with various training centres in the group.

([12]) Interview on 16/07/2001 with Markel Arizmendi, Director of HETEL (the network of privately established centres), who is responsible for enterprise development and polymer engineering at Lea Artibai.

([13]) This is the only case among those examined in which the person heading the new enterprise is a (female) teacher at the centre. This would appear to be more usual in the university environment from the experiences related in various publications and the emphasis that these place on the obstacles facing researchers and teachers as entrepreneurs (Tuominen, 2000; Churchwell, 2000; De la Sota, 2000; Blanco, 2000; Meneses, 2001)

([14]) There are currently nine enterprises in the nursery of the Lea Artibai VT Centre.

([15]) The centre gives its students a 16-hour course in self-employment, devoting two hours to motivation and awareness-raising, and the rest to defining the steps to be taken in drawing up an enterprise project. The centre offers a similar course lasting 28 hours to new entrepreneurs outside the centre.

([16]) This information is spread via the centre's internal news bulletin, in classrooms, in motivation and awareness-raising seminars, and informally through daily contact in the centre between students and entrepreneurs.

([17]) It should be pointed out in this context that some vocational training centres in the HETEL private network have developed and are using a programme called 'Sormen-Crea' to encourage students' creativity. See Basterretxea et al. (2002).

create. This may be either in a cultural, a social or an entrepreneurial field, but there are people who have these qualities. If we can identify creative people working in these fields and channel them into creating enterprises, so that they see that the centre gives them opportunities to be creative and create an enterprise, we shall succeed in our aim. If the training centre acts as a beacon and its most creative students see that other young people are developing enterprise projects in the centre itself, we are helping those students along the way.' (Arizmendi, M. ([18]))

The second stage of the enterprise creation process shown in Table 4 has one peculiarity. Lea Artibai maintains collaboration agreements with a variety of local enterprises in order to generate business ideas. On some occasions the business idea does not occur to the potential entrepreneurs themselves but arises out of the centre thanks to its contacts with business:

'The vocational training centre is in almost daily touch with businesses through training at the work place, continuing training, the provision of business services, etc. This makes it possible for each party constantly to learn about the other, as a result of which sectors and fields can be identified for possible subcontracted work. We start from the idea that if the centre is dynamic and has a good knowledge of business, new areas of employment and production can be identified.' (Arizmendi, M. ([19]))

One clear example of enterprise creation as a result of needs identified by the centre among local companies is a business producing plastic injection moulds that is at the nursery stage:

'From our contacts with enterprises such as Maier, Cicaucho and Alzola, we calculated that they were subcontracting more than EUR 12 million each year for moulds made in Portugal. We saw the potential for creating an enterprise, but a study indicated that the weakest point would be the absence of people trained in mould-making. The centre took up this challenge and we taught a special course in mould-making, but the next obstacle was that there was no enterprise development group. We took a number of management steps, and three years ago an enterprise group was set up, composed of young people working in other companies who were enthusiastic about this new business idea. The group is currently made up of nine or ten people, and within a year they will leave the enterprise nursery with an annual turnover of approximately EUR 180 000.' (Arizmendi, M. ([20]))

It should be pointed out that in order to develop this new enterprise, the Lea Artibai centre did not call on current or

Table 4.

Basic process of developing enterprise projects at Lea Artibai

1. Attracting potential entrepreneurs
1.1. Within the centre itself
1.1.1. Motivation and awareness-raising course
1.1.2. Regular information about enterprise projects
1.1.3. Business ideas competition
1.2. Outside the centre
1.2.1. Enterprise initiatives competition
1.2.2. Training conference for employers

2. Identifying business ideas
2.1. Training in steps to be taken to set up an enterprise
2.2. Collaboration agreements with businesses

3. Defining the idea
3.1. Potential entrepreneur collates data
3.2. General description of the idea

4. Deciding whether to take the idea further
4.1. Checking against basic criteria to validate business idea

5. Developing the idea
5.1. Organisation of the project
5.2. Appropriate assessment of the requirements of the idea

6. Enterprise plan
6.1. Developing the basic content
6.2. Assessment of each specific case
6.3. Collaboration agreements with BBK Gazte Lanbidean, BEAZ…

7. Long-term commitments
7.1. Staff recruitment
7.2. Commitment to enhancing local enterprise culture

Source: Lea Artibai Vocational Training Centre

([18]) Op.cit.

([19]) Íbid.

([20]) Íbid.

recently qualified students of the centre, but on former students already in work, who gave up their jobs and became entrepreneurs. This profile of entrepreneurs coincides with that proposed by representatives of the Basque employers' organisation CONFEBASK and its Bizkaia counterpart CEBEK for the award of assistance with enterprise creation (see Araujo et al., 2001, p. 322). A number of research reports on the profile of entrepreneurs confirm that new businesses are more likely to succeed if the entrepreneurs have experience of work. Previous work experience enables entrepreneurs to acquire technical knowledge and commercial and organisational skills, and to establish contacts within the company where they have worked, and with its clients and suppliers. Such knowledge, skills and contacts help the entrepreneurs in taking business decisions (CODEX, 1998; De la Sota, 2000)

Contacts with local businesses needing subcontractors enable new enterprises to spring up to meet the real needs of major initial clients. When a business has an urgent need for a local subcontractor or supplier, it may collaborate with the vocational training centre and the new entrepreneurs in launching the enterprise project. For example, the Maier, S. Coop company made machinery available to new entrepreneurs at the Lea Artibai centre, who then became its suppliers. The young entrepreneurs also carried out six-month work placements at Maier S. Coop, thereby gaining a thorough insight into the needs of their first business customer ([21]).

This kind of enterprise fits the classic notion of spin-off, meeting the fundamental requirements laid down by the European Union in the EBN (European BIC Network):

• creation of a new unit of economic activity arising out of one or more existing units;

• generation of a new activity, either creating a new autonomous business or activating a new product or service;

• support from the parent organisation.

In the light of other experiences in which one enterprise collaborates in the creation of another, subcontracting some function or activity, the spin-off activities promoted at the Lea Artibai centre in collaboration with local businesses set out to provide new products or services locally, thereby contributing to significant local development and to the generation of far more jobs than in simple cases of subcontracting.

Until such time as the young entrepreneurs have decided to form a company, it is the centre which issues invoices through a company called 'Insertec'. The money generated by the activity is held in trust by the centre until the entrepreneurs have formed their own company.

The enterprises created at the Lea Artibai centre have the added advantage that they can use the machinery of the centre itself for their productive activities. Given the high levels of investment required by some enterprise initiatives, this possibility of using the infrastructure of the training centre is a crucial help to the entrepreneurs. Thanks to the protection and assistance of the centre, they can postpone investment for a time, can work for companies using the centre machinery, and can examine in depth the real viability of the business, making products for customers without incurring excessive risks ([22]). According to the managers of the training centre and the enterprise nursery, this use of the centre machinery by the entrepreneurs can also be of advantage in training terms. It makes a positive contribution in that it offers opportunities for practice and enables some of the technical and management problems encountered by the young entrepreneurs to be discussed in the classroom, thereby developing students' creativity and permitting practical application of various teaching subjects.

At Lea Artibai this support for enterprise creation is seen as a way of developing the local economy, which still has around 20 % of its population working in agriculture and fishing. The aim of the centre is to set up 15 enterprises by 2006, thereby helping to strengthen the economic fabric of the area in the medium and long term. This strengthening will also benefit the centre since, as can be seen in the final stage of the process summarised in Table 4, the new enterprises make a long-

([21]) This should be compared with university experiences of enterprise creation, such as that of Stanford University. In that case, Numark (2000) points out the importance of a number of businesses in Silicon Valley such as HP, which he calls 'anchor' or support companies and have trained new entrepreneurs and fostered the entrepreneurial spirit.

([22]) In the literature examined, we only encountered one explicit reference to a similar policy. That is at Stanford University, where equipment is loaned when the University is not using it, although entrepreneurs pay the operation costs of the equipment (Sandelin, 2000).

term commitment to providing placements for students and to recruiting staff from the centre.

It is the aim of HETEL, the association of private vocational training centres, to extend this experience and others, such as that of the Somorrostro training centre, to other centres, not only within the association but also to public centres belonging to the Integral Network of Vocational Training Centres of Euskadi ([23]). Many of the directors whom we interviewed, both in public and in private centres, had visited the Lea Artibai centre to learn at first hand about its experience, and benchmarking activities are encouraging dialogue, imitation and adaptation of experiences between centres.

3.2.2. The enterprise creation initiative at the Somorrostro Vocational Training Centre

The Somorrostro Vocational Training Centre (Bizkaia), a private initiative, is a large centre attended by over 5 000 students split between compulsory vocational education, continuing training and job training. It has many strong links with local businesses. Besides providing a large number of hours of continuing training, it has in consequence also set up two companies (Gehilan and Laboradomo) to provide a range of services to businesses, and is establishing a foundation to make it possible for business to play a part in the centre's management bodies.

The origins of the policy of supporting enterprise creation at the Somorrostro Vocational Training Centre are to be found in a visit to micro-enterprise creation initiative in Turin, organised by Bizkaia Provincial Government in 1992. As a result of that visit, the centre decided to foster the entrepreneurial spirit and to support the creation of enterprises by students:

'The entreperneurial spirit is an asset to any society. If we foster this spirit, we can help students successfully to create new enterprises, or can help those taking jobs with other businesses to become entrepreneurs themselves. Besides fostering this spirit, we want to aim at the actual creation of enterprises. We see this as a minority interest because most people are looking to be employed by a company, and it is also a qualitative jump.' (Ruiz, M. ([24]))

The programme of support for entrepreneurs pursued at Somorrostro works with a number of bodies devoted to enterprise promotion in Bizkaia (DEMA, the Chamber of Commerce, CEDEMI and BBK Gaztelanbidean), and according to the data supplied by the management of the centre, it contributed in the period 1995 to 2000 to the creation of twenty or so enterprises and the generation of 120 jobs.

The methodology used at the Somorrostro centre to support enterprise creation consists of three stages: motivation, training and launch.

1. Motivation: In this stage, the aim is to foster the entrepreneurial spirit, for which purpose students take courses and hold discussions with business people and professional staff from the centre or from institutions with which the centre has links. In addition to these discussions, the centre holds competitions for entrepreneurial ideas and invites students and former students who have chosen self-employment to recount their experiences as well, since these experiences have a great motivational impact. At the end of this motivation stage, approximately 10 % of students are disposed to go on to the next stage of training.

The Somorrostro centre is currently completely revising the motivation stage, in order to introduce a transverse course element called an 'Entrepreneurial Workshop' from the academic year 2002/03 to foster the entrepreneurial spirit from an early age:

'We do not believe that the entrepreneurial spirit should only be fostered in the final years of vocational training or during a university course. We believe that people's entrepreneurial dimension has to be brought out during ESO (compulsory secondary education). From our knowledge of other interesting experiences we have designed a syllabus in which there is a methodology to educate people's spirit of enterprise from the age of 12-13 years. Gradually, the teaching is intensified so that when they are 20 years old they are entrepreneurs who have the training and

([23]) The Integral Network of Vocational Training Centres covers those centres offering more than basic continuing and job training.

([24]) Interview of 23/07/2001 with Mikel Ruiz, Director of the Somorrostro Vocational Training Centre.

resources necessary to put a business idea into practice if they wish.' (Ruiz, M. ([25]))

This 'Entrepreneurial Workshop' consists of 18 hours of teaching, designing and sharing of entrepreneurial projects and development of ideas which may be implemented in later stages of training.

2. Training: Students who wish to pursue the programme after completing the motivation stage receive theoretical and practical training, carry out feasibility studies, explore the market, draw up financial plans, and so on.

'Last year we trained around 50 people and carried out 12 or 13 feasibility studies. In total we must have conducted between 80 and 100 feasibility studies, and around 14 of the enterprises that have been created are still operating.' (Ruiz, M. ([26]))

3. Launch: As in other centres, the youth and lack of experience of the entrepreneurs means that the protection offered them is greater than in other institutions. Moreover, links between the training centre and local businesses facilitate commercial activities and access to an enterprise's first customers:

'We support the enterprises that are set up for between three and five years, which is something that other institutions normally do not do. By support we mean finding customers, whom they should be able to retain subsequently for themselves. Through the centre itself we try to find a client list from among the five hundred or so companies with which we have regular contact.' (Ruiz, M. ([27]))

Many of the ideas that have given rise to the enterprises created in Somorrostro have not come from the entrepreneurs but have been suggestions made by the training centre itself. Some of these ideas have been the fruit of the centre's contacts with local companies and public agencies:

'Through our formal and informal links we observed that the large companies, the go-ahead companies, preferred to subcontract activities rather than recruiting staff. Locally, the three major go-ahead companies are Petronor, the Port of Bilbao and the gas plant IGCC. These projects, together with the socio-cultural 'Bilbao Tourism' business that we still need to develop and make more effective, are the four driving forces of the future.' (Ruiz, M. ([28])).

According to the director of the centre, the main difficulty is not generating ideas but finding students who are ready to take on the risk of setting up a business:

'We need to change students' outlook, and this is difficult. This is the task of the work team responsible, but it is hard to make students understand that if three or four of them join together and form a small enterprise they will have many more opportunities, if they are good professionals, of being subcontracted, and greater stability of employment than if they go looking for work individually.' (Ruiz, M. ([29]))

3.2.3. The experience of the Bidasoa Vocational Training Centre using the URRATSBAT programme

The Bidasoa Vocational Training Centre, situated in Irun (Gipuzkoa), is a public institution offering compulsory vocational education as well as continuing training and job training. This establishment teaches upper intermediate and advanced courses in the following fields: manufacture of machinery, timber and furniture, electricity-electronics, and construction and civil engineering. It maintains close ties with local companies, particularly in the context of continuing training.

The culture of the centre also supports the creation of enterprises by its students, although this support encounters some additional difficulties because of the public status of this vocational training centre. The first problem is less flexibility of labour, which makes it difficult to recruit staff specifically to foster new enterprise initiatives, a problem which arises also when a public centre wants to conduct research or to provide services for businesses.

Furthermore, public centres may encounter more obstacles than private centres in carrying out certain activities. Initiatives such as that of the private centre Lea Artibai, where entrepreneurs can work using the centre's equipment, and where

([25])Ibid.

([26]) Íbid.

([27]) Íbid.

([28]) Íbid.

([29]) Íbid.

it is the centre which issues invoices until the entrepreneurs have formed a company, would be more difficult to arrange in a public centre.

In view of the special difficulties facing these centres, the Department of Education of the Basque Government set up the URRATSBAT programme with the aim of encouraging the creation of enterprises in public vocational training centres with students who have completed their training. A number of different centres belonging to the public network IKASLAN take part in this programme: Bidasoa, Tolosa, Bergara and Usurbil in Gipuzkoa, Barakaldo and Erandio in Bizkaia, and Mendizabala in Araba. In order to help entrepreneurs in these centres, there is a standard methodology laid down, and a person appointed with this responsibility. Each centre sets out to form two groups of three or four students every year. These students go through a final three-month stage of motivation and generation of business ideas, and the URRATSBAT programme and the centres support the prospective entrepreneurs by providing premises and technical assistance while they are investigating whether their project is viable. The intention is that they should formally establish consolidated micro-enterprises after a period of one year.

Of all the initiatives for the creation of enterprises by students that have come out of URRATSBAT, that of the Bidasoa centre stands out, not because it has created a large number of enterprises but because it has generated a large number of jobs in the three enterprises which it has launched.

As at the Somorrostro and Lea Artibai centres which have already been discussed, the Bidasoa Vocational Training Centre and local companies are the driving force behind these enterprises. A good example is the enterprise created in 2000 to work for the kitchen furniture manufacturer XEY:

'The aim of the seven carpenters was to set up a business to assemble kitchen furniture. The college talked to Muebles XEY in order to create this enterprise. XEY took in the students and trained them over several months, teaching them about the quality standards which it demanded, the output expected, etc. They then set themselves up as a partnership and started working for XEY, assembling kitchens in numerous blocks of flats in various cities throughout Spain.' (Mujika, I. ([30]))

Table 5.

Creation of enterprises at the Bidasoa centre

	1997	2000	2001
No of enterprises created	1	1	1
No of jobs generated	22	7	4

Source: Compiled by authors

The management of the Bidasoa centre realise that it is difficult to motivate students to create enterprises in occupations with full employment, and trusts like the other two centres examined in the power of emulation exercised by successful entrepreneurs over the other students. The success of earlier enterprises can provide arguments that will convince new entrepreneurs:

'Practically 100 % of students find jobs when they finish their placements in companies. This makes it difficult for students who want to set up a business, and as in the case referred to above of assembling XEY furniture, they have to be prepared to spend several months being trained without pay in the client company. The success that they are achieving, and the fact that each of these workers has been earning between EUR 3 000 and EUR 3 600 a month in recent months, which is appreciably more than they would be paid working for others, is an argument that we can use with other students.' (Iruretagoiena, J.I. ([31]))

The use of spin-off and collaboration with existing companies to create new enterprises has great advantages, as has been seen in the various experiences discussed, but depending on a single client also poses a serious risk for a new enterprise. In the case of the enterprise created in Bidasoa, the problem was aggravated by the exclusive agreement demanded by XEY:

([30]) Interview of 26/07/2001 with Iñaki Mujika, Director of the Usurbil Vocational Training Centre and of the IKASLAN GIPÚZKOA association of public centres.

([31]) Telephone interview of 10/02/2002 with Jose Ignacio Iruretagoiena, Director of Bidasoa Vocational Training Centre.

'To start with, XEY demanded loyalty to that company. XEY said that it had invested heavily in the training of these seven entrepreneurs, that it had appointed its best professionals to train them, and that it would not allow them to fit other manufacturers' kitchens. This demand has been relaxed over time.' (Iruretagoiena, J.I. ([32]))

In another of the enterprise initiatives launched by the Bidasoa centre, before URRATSBAT came into existence, the centre itself identified a business opportunity, generated the business idea and organised a course of job training to provide self-employment for the unemployed in the locality:

'We observed that many of the sofas sold in major stores were manufactured in Andalucía, and we thought that they could be manufactured here as well. We organised a course for the unemployed in the locality. Six of the students, some of them older and with little chance of finding a job, established a cooperative, Tapicerías Txingudi, set out to manufacture made-to-measure sofas, particularly for yachts and other boats, and have been successful. They have expanded, and two other businesses have grown out of this first enterprise, now employing 22 people.' (Iruretagoiena, J.I. ([33]))

A third enterprise should be added to these two. Geotop was set up in late 2001 by four students to offer geodesic and topographic services, and recently received the three-star 'Basque Country Young Enterprise Award' from the Association of Young Basque Entrepreneurs, AJEBASK. The Bidasoa centre is supporting this project and others that are under consideration by offering advice from its professional staff and placing the equipment and materials of the centre at the disposal of the entrepreneurs for one year.

4. Conclusions

The level of development of enterprise creation support programmes varies widely in the centres studied, and the result in terms of number of enterprises created and above all the nature of those enterprises (size, number of jobs, turnover, market strength) varies according to the role, scale and resources which the centres put into self-employment schemes.

Although fostering the entrepreneurial spirit does not lead to the creation of enterprises in the majority of the vocational training centres studied, it can have other benefits. On the one hand, fostering an entrepreneurial culture will have a positive impact on students' entrepreneurial and innovative capacity in future jobs working for others, and on the other, while vocational training students may not put into practice a business idea that they have developed in the classroom, it is likely that the positive attitudes towards enterprise creation that they have acquired will translate into new businesses in the future, when they are older.

The most important factor in fostering an entrepreneurial spirit is the establishment of means whereby students can see, learn from, appreciate and imitate former students who are setting up businesses or have already done so successfully. The motivational effect of these local experiences is greater than that of the method used by most of the centres studied to foster an entrepreneurial culture: classes and lectures given by teachers, members of development agencies, public institutions associated with enterprise creation, and employers' associations.

The infrastructure used to nurture enterprises and training programmes for entrepreneurs can be and are easily copied by other training centres. However, some of the factors which in our opinion most probably explain the success of the initiatives studied, are far more difficult to reproduce. These factors are the establishment of networks with companies and institutions that will provide new initiatives with support, and the creation of a culture supportive of enterprise among teachers, administrators and students in the training centre.

The experiences of centres such as Lea Artibai, Somorrostro and Bidasoa demonstrate that it is possible to launch enterprise projects that generate numerous jobs and wealth, if these projects are supported with the equipment and infrastructure of the vocational training centre in close

([32]) Íbid.

([33]) Íbid.

collaboration with local businesses. The use of the centre equipment allows the new entrepreneurs to explore the viability of industrial projects without initially incurring high investment costs and risks. Contacts between centres and businesses make it possible to identify unmet business needs and opportunities for subcontracting, so that new enterprises spring up to meet the real needs of major initial clients. We believe that these experiences can serve as the model for other vocational training centres and universities interested in fostering enterprise creation.

Compulsory vocational education students are not best suited to the creation of new enterprises because of their youth and lack of experience. Moreover, if most of those who successfully complete courses find jobs easily, it makes it difficult to motivate them to opt for self-employment. Although some experiences show that it is possible to achieve this motivation so that young students set up businesses, a number of the centres surveyed successfully open their offer of support to older entrepreneurs, especially former students of the centre who have experience of working, and to students on job-training courses. Opening up to older prospective entrepreneurs is to be recommended also in university enterprise support schemes.

Where there is a group of students ill-equipped to manage an enterprise but with a viable business idea, vocational training centres may launch a new enterprise and employ those students, copying the example of universities such as Glasgow, Stanford, Chicago and Barcelona. Where a member of one of these universities has a good business idea but lacks management skills, the university supports the creation of the enterprise and engages a management team.

We believe that it would be particularly appropriate to export the spin-off initiatives developed in some of the centres studied. Although these experiences have been carried out in collaboration with expanding businesses to create new products and services, the literature on spin-off indicates that initiatives of this type, but with a more defensive profile, can be suited to businesses in difficulties. Rather than allowing numerous highly trained staff with wide experience of sectors currently facing difficulties simply to be laid off, public institutions could support enterprise creation, together with training centres and the businesses affected, by launching schemes to encourage and motivate these skilled workers to set up their own enterprises.

Some enterprise support programmes in vocational training centres, such as the URRATSBAT programme of the Basque Government, give priority to entrepreneurs working in fields in which it is harder to find employment. We believe that this focus is not the most appropriate and that the criteria for fostering and supporting new enterprise initiatives should be the potential of the market and the capacity to create strong competitive businesses, rather than whether potential entrepreneurs are likely to find jobs working for others. If centres genuinely want to encourage self-employment and to make students see the creation of enterprises as prestigious, we do not think it right to give the impression that this route is an option primarily for students who are unlikely to find jobs.

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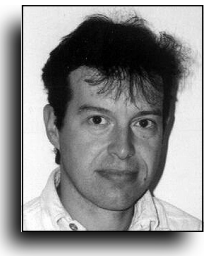

Difficulties and prospects of vocational education in Africa – MISEREOR's experiences

Vocational education in Africa is facing a crisis. Vocational education is no longer a guarantee for income and employment. Vocational training institutions in Africa do not really reach the poor, they often do not deliver what the labour market requires, they are unable to offer training facilities to the majority of the African youth and to cover their running costs as public funding is rarely available. Promising approaches are being implemented, as the example of the Catholic vocational training centre CTAP, Chad, shows. According to the principle of subsidiarity, which the author suggests as the leading principle for vocational education, CTAP offers alternance training by cooperating with local private enterprises. It strengthens informal apprenticeship and is a service and support provider for local enterprises. Its business-like management allows most of the running costs to be covered. Church-owned vocational training institutions have to reorient themselves away from offer-led training and towards demand-led training, not providing certificates but income and employment for young people in Africa.

The present reflections have for subject the field of vocational education in Africa, the experiences and perspectives from the point of view of a donor agency of the Catholic Church in Germany. Within all Christian Churches and since the beginning of missionary work in Africa, vocational education has played and still plays an important role. The Churches had been the first to introduce school education in Africa. The influence of European countries and their missionaries on the vocational education system in Africa during the colonial period is still visible and often a reason for today's problems: French missionaries introduced French language and history, French decoration styles and French professions. British missionaries introduced British school uniforms, London City and Guilds examinations, British tools and technology. German religious congregations introduced German crafts, technology and construction methods. Britain and France also exported their vocational education system to Africa. Until today the post-colonial adaptation of those systems to the needs of the African society and economy is still going on. Up to now, the Christian Churches play a major role in offering vocational education in Africa. In Tanzania, for example, the Christian Churches deliver 31% of the national vocational training capacity in their institutions (Vocational Education Training Authority, 1999). In Cameroon, they provide about 13% (Winterstein, 1989).

1. MISEREOR's option on non-formal education

MISEREOR was founded in 1958 by the German Catholic Bishop's Conference as an agency "against hunger and disease in the world". It offers to co-operate in a spirit of partnership with all people of goodwill to promote development, fight world-wide poverty, liberate people from injustice, exercise solidarity with the poor and the persecuted, and help create "One World". The assistance MISEREOR provides is meant to stimulate and support self-help and pave the way for sustainable improvement in the living conditions of the poor.

In MISEREOR's view, education takes place inside and outside the school system. We talk about formal, non-formal and informal education[1]. MISEREOR regards formal education, like school education, as a core responsibility of the government. Informal education is rather important in Africa, but often ignored in the academic discussion. It takes place every day in families, communities, enterprises and in the mass media. Non-formal and informal education become very important when we look at poor target groups. In most African countries, the majority of young people have no access to formal vocational education because they are school dropouts and not allowed to take up a formal vocational education (Lohmar-

Kuhnle, 1994, p. 131). In Tanzania e.g. 33 % of those entering Primary School do not finish Standard VII. Only 16 % of them enter Secondary School and most of them do not finish there (Vocational Education Training Authority, 1998, p. 3).

MISEREOR as an agency with a clear option for the poor is thus focusing on non-formal education (Misereor, 2002). While national curricula are not able to adapt properly to different local circumstances in Africa, non-formal education can be adapted to local needs and is flexible in methodology, local language, objectives, conditions of admission, time-table, place and age. Non-formal vocational education can better reach the poor or vulnerable, unemployed or war-affected youth. It gives a chance to the millions of school-drop-outs in Africa.

2. The training centre approach

Vocational education in church-related projects happens mainly in so-called 'vocational training centres'. It is useful to analyse the 'vocational training centre' education model which is widely spread in Africa: whatever its precise name may be in each case, we are talking about a compound with workshops, offices and classrooms, mostly well-secured by a wall or a fence. The "full-service variety" includes staff houses, a kitchen, a dining hall and dormitories. 20 to 500 trainees will spend 3 to 4 years of their young lives there. Graduates of the primary or secondary school education or school dropouts may be admitted here. In such a protected kind of environment, trainees are successfully prepared to pass an examination and to obtain a certificate. Provided with such a certificate the ex-students or trainees are sent out into the labour market. The 'centre' has fulfilled its task and will continue running its courses with new applicants queuing for admission. If you ask questions about the success of the training provided, you will be given the total numbers of trainees who completed their training and obtained the final certificate, or the Director will show you some samples of their work. If you insist on asking what has become of the ex-trainees, you may cause a certain amount of embarrassment: yes, in fact, you may be told, two were known to be working in so-and-so, and three had been kept by the 'centre' itself as instructors, while little was known, unfortunately, of the others. Normally, there are no tracer-studies, no statistics about the whereabouts of the ex-trainees.

Twenty years ago, the vocational training centre concept was a successful story in Africa: on completion of their training, the ex-students were all employed by industry, government or church institutions in great numbers. While demand was high, the production of the training centres did not compete with local markets and contributed as well to finance the running costs. The government often contributed to the salaries of the staff.

Especially in rural areas and small and medium towns, the situation has substantially changed. It has become more and more difficult to be employed in the formal sector. Over the last years, more jobs have been created in Africa in micro-business than in the formal industrial sector. Less and less often, the ex-students of 'vocational training centres' find employment. The training programme and the training conditions don't suit the reality of the labour market any more. Vocational training centres have been well adapted to train qualified workers for industry but they have difficulties to prepare young people for self-employment or for the environment of micro- and small enterprises.

Indeed, we must recognize that this concept of vocational training which was successful in the past, has to adapt to new circumstances.

3. The crisis of vocational training in Africa

In this context the UNESCO talks about the crisis of costs, the crisis of relevance and the crisis of equity (Grierson 1997, p. 11f).

3.1 Crisis of equity

Vocational training programmes are often difficult to access, especially for the poorest and for women. Teaching language, black-board training methods, long train-

(1) Formal education: officially recognized nation-wide curriculum within the school system, e.g. technical college. Non-formal education: outside the school system, locally adapted curriculum. Informal education: not systematic, learning by doing, training on-the-job, no graduation, no regulations.

ing terms, fees and age are often entry barriers for marginalized people. How can a poor family afford the luxury to send their fittest and most powerful family members to a technical college or a training centre for several years and even to pay for it - without a job guarantee? Vocational training for the poorest has to be different. While the training programme has often been financed by the donor to help the poor, after some years the good reputation of the training institution has made a change: there are many applicants, and the education level rises because the school can choose people with better entry qualifications. Middle class people, teachers and administration staff from far away wish to send their children and they accept higher training fees. The result is quite often that the poor can't enter any more.

3.2 Crisis of relevance

There is a growing mismatch between the training offered by VTC's and the skills needed for working life. I came across a drastic example in the DR Congo: Hundreds of miles away from any town, in a very rural area, there was a small village with no electricity a hundred miles around. And there, I found a little secondary school which trained in electricity. It was blackboard training with no practise. A training without a single chance to find a job in the region. And the worst of all: very poor parents accepting to pay relatively high school-fees, hoping to bring their children to a better life. This secondary school was not educating, this school was producing frustrated and unemployed youngsters.

If we analyse in Africa what trades vocational education institutions are offering, we find that nearly all partners concentrate on a few skills like masonry, carpentry, metalwork or tailoring. Are they the relevant trades for modern development? Sometimes the labour market for those professions is completely saturated. On the other hand, there might be a need for qualified people in non-conventional trades like: printing, pump repair/maintenance, plumbing, drivers, bicycle repair, solar energy, TV/Video/office equipment repair, climatisation, security services or others. It seems that there are much more training fields possible and relevant.

Another problem becomes apparent when looking at the demographic situation in Africa, where 43% of the population are under the age of 15 (Europe 18 %). In Sub-Saharan Africa the 10-19 age group only represents 23.7 % of the total population (United Nations, World Population Prospects 1999). The problem of relevance for the VTC's is that in comparison with the millions of young men and women yearly entering the labour market in Africa, only an infinitely small part has access to a vocational training centre. We should definitely recognize that the majority of the youth in Africa, especially the poor, are not trained in vocational education institutions, but rather 'on the job'.

3.3 Crisis of costs

Vocational education in training centres (VTC's) is quite expensive: infrastructure, equipment, personnel and overhead costs are relatively high. Over the last years, these costs rose by high dropout rates, low post-training placement and underutilized training facilities. There is a typical life cycle of a VTC. The first years are promising: well equipped, good buildings, good reputation, motivated staff. After the initial project financing, most VTC's have to cover the running costs by school-fees, production or governmental subsidies. Then, slowly machinery runs out, handtools are lost, broken or old-fashioned. The buildings need maintenance badly-but there is no money available. While nearly all African governments are struggling with budget limitations, the public support for church-driven educational establishments has largely stopped. While the donor agency refuses to contribute to the running costs eternally (and is not able to do so), the training fees are raised and the poor have no more access. The income from production and the sale of services might, if there is a qualified management, cover the running costs but generally not the expensive equipment which has to be replaced one day. So, a lot of the 15- to 20-year-old VTC's have financial problems.

4. The principle of subsidiarity

We have analysed that the vocational education system in Africa passes through a

crisis: Education is no more a guarantee for a job. The education system does not reach the poor and it does not deliver what the labour market asks for. It is unable to offer vocational training to the majority of the youth and there is absolutely no money in public budgets nor do the donor agencies have the funds to fill in the gap. On the other hand there are promising concepts and experiences in some African countries, which might help to overcome the above mentioned limitations. In this context I would like to propose the principle of subsidiarity as a key issue.

The social teaching of the Catholic Church comprises a fundamental principle: the principle of subsidiarity. What does this mean? If somebody can do something at a certain level, he/she should do it at this particular level. Only if someone or a group of people is unable to do it on his/their own, a higher level or public services may assist. A very simple example: if you want to learn how to use a hammer, you can try it, you can ask your parents or you can have a look how others do it - but there is no need to ask for a training course or for public assistance. At vocational school, you may learn something about different types of nails or how to construct roofings, something which you can not learn at home. The Catholic social teaching says that each human being and also each social group of human beings have the right and the duty to do what they can do at their level. The community and the state only have the obligation to assist when those persons or social groups are unable to solve the problem on their own. The role of the state or public structures is therefore a supporting one, a subsidiary one, respecting the liberty and the talents of the people. Vocational Training Institutions should therefore support existing activities and responsibilities, but not replace or ignore them. In terms of development, we speak of the principle 'help to help yourself'. The principle of subsidiarity is democratic and participatory, and it promotes decentralization (Steinich, 1997, p.47-57).

From my point of view, subsidiarity should be the guiding principle for vocational education in Africa. What does this mean with regard to the problems of equity, relevance and costs?

5. Subsidiary and co-operative training – the CTAP experience

The following experience from Chad[2] is an example for a subsidiary and co-operative vocational education scheme, supported by MISEREOR (Misereor, 2001):

In the city of N'Djamena, there are many young people who are jobless. The majority of them has not completed school education. There is no adequate institution to give them a chance in life. This concern has led to the creation of the CTAP by the Christian School Brothers in the Catholic Diocese of N'Djamena. The "Centre Technique d'Apprentissage et de Perfectionnement", CTAP for short, (Technical Centre for Apprenticeship and Further Training) intends to help apprentices to acquire the necessary professional and practical skills for an active life, to promote self-employment and to provide support to micro-entrepreneurs. The CTAP was created in 1985 by the Christian School Brothers. Today, it offers training facilities for 95 apprentices in the following fields: automobile mechanics, solar and electrical installation, welding, plumbing, audio-visual maintenance, climatisation, computing. To be admitted to the CTAP, the apprentice must have, as preconditions, one year of practical working experience in the trade and a vacancy in a private workshop in town. This means that the programme is focussing on informal apprentices/workers in micro-enterprises in N'Djamena. The two-year training takes place in private workshops as well as in the Training Centre. CTAP's apprentices spend 3 days a week at the Training Centre and another 3 days a week in private workshops in town.

The CTAP also provides further training to its former trainees in order to help them improve their skills and master new techniques. It offers a follow-up programme, advisory service for start-up's, lends tools, organizes further training classes for the masters/workshop owners and passes on job offers to ex-apprentices for a fee. Enterprises and NGO's can inquire for need-oriented short-term courses for their technical personnel which have to be paid for so that all expenses are covered.

Interview with the ex-student Naman Mahamat:

"I have been trained in building and solar electricity at the CTAP for two years. Now I have my own workshop. I do electrical installations, sell solar equipment, telecommunications equipment, hydraulic equipment designed for villages."

Question: "Didn't you get any loan from the CTAP?"

"No, I didn't. I've been able to run my own business thanks to some small repair works I've carried out in town. The CTAP subcontracts some of its deals to me. All this helped me set up my own business. Now I represent a French company here in N'Djamena for the supplying and selling of solar equipment. I've done a lot of installations, also in the field of village hydraulics."

Interview with the ex-student Elie:

Do you resort to the CTAP for the technical problems you get?

Elie: Yes, we do. Within the scope of its follow-up activities, we resort to the follow-up department which sends us the appropriate instructor for a given problem.

Does the CTAP subcontract some of its deals to your workshop? In which fields?

Elie: Yes, they do. Refrigeration, air-conditioning and electricity.

Could you tell us more about the typical works you've done on behalf of the CTAP?

Elie: We have done some maintenance work in electricity and refrigeration for the African Institute for Economic and Social Development, INADES, in N'Djamena. We've done the same sort of work for the Lycée Sacré-Coeur (a secondary school). The follow-up department sends us an instructor to make sure that finishing-off is done in a professional way. The instructor sometimes plays an active role.

Why does the CTAP insist on following-up your site work?

Elie: Well, we have been trained by the CTAP. They want to make sure that the jobs are well done, and after all, they are the ones who own the contracts.

As technicians, do you feel comfortable when the CTAP follows up your activities?

Elie: Yes, we do! Technology is an ongoing process. CTAP's follow-up activities are very important to us.

At present, most of the 520 young people who have completed their education at the CTAP have found a job. About 35 of them run their own businesses; others have founded co-operatives in order to get better contracts; some others have chosen to work in private companies. Detailed information about the whereabouts of the ex-trainees are available. Except for diseases, there are no drop-outs during the training and other candidates are queuing. The CTAP is able to cover 65%-80% of its running costs by own income. 95 young man and women were trained in 2000-2001, and another 207 persons participated in further training with a total of 19,210 hours. The training fees are reasonable because the apprentices have the possibility to earn some money during that period. The CTAP keeps adapting its training to the current needs. For instance they, found that the market for plumbers had become difficult and thus changed their programme. In 2003 the CTAP begins, because of good employment prospects, to offer training in computer science, maintenance of office equipment, hotel trade and catering. In recognition of this successful approach, the director of the CTAP was appointed a member the national vocational training authority FONAP.

Interview with El Hadj Ousmane J. Kollo
Technical Director of the NOVOTEL N'Djamena

How did you become Technical Director of the NOVOTEL?

I am a skilled sanitary plumber and then became an instructor. In the seventies, before the civil war, I studied at the state 'Centre de Formation Professionnelle et de Perfectionnement', CFPP. The school

([2]) The following text is based on the yearly reports of the CTAP, presentations and other documents of this Training Institution and personal visits of the author.

was destroyed in 1979 as a result of the civil war and was not rebuilt. Well, at that time, all those who left the institute found a job right away and were mostly employed by the big companies of the Chad. Nowadays, such companies hardly seek any personnel and, as a craftsman, one must look after oneself, search for customers oneself and struggle through life as a small entrepreneur. For the young people, the situation is a lot more difficult today.

How do you view the education at the CTAP?

The CTAP is the only professional training institution over here that keeps contact with the graduates, that visits them at their places of work and trains them by dual system. This is very good and the trainees get prepared for practice in the best possible way. That is why we gladly employed Mrs. Masinga as an electrician after she had finished her education at the CTAP.

What is your experience with a female electrician?

A very good one. I am very happy with Mrs. Masinga as a co-worker and do not see any problems with her as a woman being an electrician here.

The CTAP also offers continuation courses. What needs do you see in this respect?

Continuation courses become increasingly important because technology changes faster and faster. Things one learnt 25 years ago are no longer sufficient and the knowledge a young person acquires today does not suffice to stand one's ground in life. That is why one has got to continuously improve one's education.

Chad is considered a Muslim country whereas the CTAP is run by Catholic friars?

There are people who want to divide us in north and south, east and west. They say that, in the north, there are the nomads and, in the south, the farmers and that there are Christians and Muslims and that they cannot get along. But these are wrong problems. This is said by those who want to split us. Yet, we are all brothers and sisters. It is important to do something and to trust in God. Everyone should live his faith as he pleases and the way it is good for him.

MISEREOR co-worker T. Gerhards had this conversation with Mr. Kollo in N'Djamena, Nov.1999

6. Lessons learnt for the problems of equity, relevance and costs

6.1 New impact indicator: employment and self-employment

The UNESCO analysed the crisis of relevance in the sense that a lot of the offered vocational education is not very relevant for today's labour market. Instead of looking after the number of students passing their exams, occupation-orientation should become the main objective of vocational education institutions. An occupation-oriented training requires a new approach for both institutional structures and methods of training, and it requires a strong co-operation with the business sector in the first place. In a situation where unemployment rates in Africa are up to 80%, employment or self-employment ought to become the principal indicator of a successful vocational education. Like the CTAP, every vocational education institution in Africa ought to know in detail about the whereabouts of its ex-students. Placement statistics or tracer studies are the best indicators for monitoring the market orientation and thus the success of a vocational education programme. MISEREOR has introduced 2002 "tracer statistics" as a key indicator in all projects of vocational training funded in Africa.

6.2 Strengthening informal apprenticeship

Analysing the question of equity the UNESCO found that access to vocational training programmes is only possible for a minority and difficult for the poor. We know that public institutions in Africa will not be able by far to offer vocational training to the millions of young people entering the labour market in the coming years. We also know that millions of

young girls and boys in Africa receive their vocational education in form of an 'informal apprenticeship' by learning 'on the job'. We know as well that this type of informal apprenticeship is sometimes misused, that the quality of training is rather low and that innovation and new technologies rarely enter it. The importance of the so-called 'informal enterprise-based training' has been long time neglected, blamed and ignored by training institutions, universities, governments and the Churches.

Subsidiarity in this context means that vocational training institutions could offer complementary classes for informal apprentices or workers like the CTAP in Tchad. Vocational training institutions should support the existing informal training activities. Training centres could make efforts to strengthen the quality of work in micro-business. They could offer co-operative schemes of training which avoid exploitation and misuse of the cheap working power of apprentices. Also, a technical college could offer technical, commercial or pedagogic training to those workshop owners who admit and accept to train apprentices.

6.3 Flexible course design

Young people often do not have the patience nor the money to take part in a relatively expensive 3- or 4-year training without any employment guarantee. Like the CTAP in Tchad, there are other vocational Training Institutions in Africa which have some good experience in offering short-time courses that are tailor-made for the needs of the labour market. Those courses are cheaper than a 4-year programme and quite effective in bringing people to employment. Poor people can afford the training fees and are interested in participating.

Such a training is short, in the local language, flexible in time and place, but there are still few technical colleges or training centres that offer such training in evening, night or Saturday classes. Everyone will also agree that the training conditions should correspond as much as possible to the future working life. But who offers vocational training in a village, in a private workshop, on the road or under a tree, that is, in places where poor people in Africa are used to work? When people participate in a course in a nice classroom or in a beautifully equipped workshop, how can they apply their new knowledge when they are back home on the street? There are encouraging results if training takes place where poor people live and work (Gerhards, 1997, p.18-19).

6.4 Co-operative vocational education is needed

As the CTAP example has shown, a promising path is the co-operation of a training institution with the business sector (e.g. the demanders of the training product = qualified people). Supply and demand, training institution and future employer are brought together designing vocational education together (Lohmar-Kuhnle, 1994, p.149f). In this co-operation, the training institution takes a subsidiary role. It supports the needs of the business sector in finding qualified staff and workers. Co-operative education can be realized at different levels, e.g. organizing job placement or in-house training in enterprises, regular meetings with business representatives, active representation of business people in the board of the training institution, realizing a training programme together, joint planning, realization and evaluation of further training for workshop owners, employees or apprentices of micro-, small- or medium-sized enterprises.

MISEREOR's experience shows that co-operative vocational education programmes are a successful way to lead to employment and self-employment. They allow the introduction of new technologies into the business sector. They are demand-driven, less expensive and they combine vocational education with micro-enterprise promotion in offering business development services. Co-operative vocational education does not mean to transfer a model that has been tried and tested elsewhere (for example the dual system in Germany) to another country or project. It is just that the suppliers and demanders on the market of vocational education are linked in a way that misallocations and market saturation are reduced.

That is to say that traditional vocational training centres, if they want to provide a relevant training, will have to establish

links to the local business sector. They should integrate the representatives of the concerned businesses in the planning, realization, monitoring and evaluation of their vocational education activities. Business representatives might even choose the students and form a committee for non-formal examinations at the end of the training.

In such a co-operative and subsidiary approach, vocational training centres change to "business support centres". The good contacts established with local tradesmen will give quick information about the real training needs and a saturated or booming market. The formal or informal enterprises will explain their expectations from high-quality training. The institutions will adapt or reorient their training schemes, and the business sector will be more interested in employing ex-trainees and also in contributing financially.

6.5 New chances in the service sector

In the past, church-related training institutions focused mostly on the producing sector. While world-wide production is growing, the number of workers for production purposes is not growing in the same way due to better machinery and logistics. In Africa an imported and industrial made plastic garden chair costs nowadays less than a good assembled timber chair from a local craftsmen. The globalisation of industrial mass production will continue and local craftsmen can hardly compete with industrial products. On the one hand, the unemployment rate for unskilled workers for industry is raising. On the other hand, there is a growing demand for efficient services at all levels like transportation, repair work, maintenance, information and communication. This sector of the labour market is growing and can hardly be replaced by automatic machines (would you like to have your hair dressed by an automated machine?). In the past, the Churches have strongly neglected these modern professions of the service sector. Why Training Institutions do not offer vocational education for watchmen, security people, undertakers, tourist guides, drivers, baby-sitters, telephone agencies, sales agents, beauty parlours, housekeepers, domestic nursing, catering, logistics, information management and all kinds of business development services? The CTAP has started to offer training for the service sector e.g. maintenance of audio-visual and office equipment.

6.6 Training for self-employment

New jobs are created by dynamic entrepreneurial men and women and not by the government or development agencies. In a situation where public employment is decreasing and the existing business does not grow, the only possibility to create more jobs is to promote start-up's. Millions of unemployed looking for income have started in Africa with survival activities in the streets, selling something or offering services. This emerging micro-business sector is growing everywhere in Africa. Vocational training centres which have been training industrial workers the conventional way up to now can't ignore this important sector of job creation. The ILO estimates that in Africa 90% of new jobs are created in this informal, semi-formal or formal micro-business sector. Vocational education must support and strengthen this emerging and important sector of African economies in such way that a survival activity may become one day an officially registered micro-business with some employees. Entrepreneurship training should not start at the point when someone gets unemployed. Existing programmes should integrate entrepreneurship training, business management, accounting, etc. with the objective to promote entrepreneurial thinking and acting.

On the other hand, we should see that neither every unemployed young man nor woman has the potential for entrepreneurship. A 3-year-training is not enough to successfully proceed on the rough road towards self-employment. It is also obvious that someone needs several years of professional experience in the trade before starting his own business. But where is one supposed to get it? Even those who find an employment face a lot of difficulties, missing the protecting environment and working conditions of the training centre. As the example of the CTAP shows, there are promising experiences with the introduction of follow-up and job-placement activities in vocational training centres.

6.7 Competence-orientated training methods are required

Vocational education is much more than teaching some skills. It looks after the development of the whole person, body and soul, its talents and ethical values. The Christian Churches have always seen vocational education as a process of personal development. Only memorizing facts, data, numbers, rules and technical knowledge isn't enough to be prepared for today's working life. Training methods that are only based on memorizing are out-dated and should be abandoned. Empowering people to act autonomously in business is more important and requires new training methods. There are encouraging results with action-learning methods like "The Best Game" developed by the MISEREOR partner Triple Trust in South Africa (http://www.tto.org.za) and the CEFE approach developed and promoted by the German GTZ (http://cefe.gtz.de).

A major problem of our age is that we have to train young people for technologies which are not yet invented. In a changing world, how can the instructors or teachers prepare the youth for a reality that we can't even imagine now? (cf. Interview with Mr. Kollo) Who could have imagined, twenty years ago, the interesting market for computer training, mobile phones, waste management or renewable energies? Nowadays, a person should be capable of working in a team, making decisions, dealing in a positive way with customers, doing marketing, managing conflicts, analysing problems, managing finance, taking risks, communicating, etc. Great store is set by those "key competencies" everywhere - just look at the job offers in the newspaper.

6.8 Boarding schools: costly and hindering

Boarding facilities are hindering on the way to sustainable vocational training institutions. The history of boarding schools in Africa goes back to the catechumen school where the Church wanted to isolate the candidates from their pagan families and introduce them to Christian life, accustom them to northern values and behaviour. In this sense it is interesting to see, that well-off people from African cities nowadays love to send their children to Catholic or Protestant technical boarding schools on the countryside and accept to pay high fees.

Vocational Training Institutions which focus on poor people have problems with boarding schools because of their high running costs. To the experience of MISEREOR vocational training institutions for the poor can never finance their boarding facilities by own income from production or fees. Only "vulnerable" youths may require a protecting environment in some cases. Those "Children/Youth Homes" need high external subventions but they are functioning better, if they are separated from the training institution, while sending their kids to different training facilities according to their talents. The CTAP e.g.. receives apprentices being send by welfare institutions but does not offer itself boarding facilities. Only in very rural areas, with large distances to the family, dormitories may be regarded as a compromise where students or apprentices cater for themselves. Vocational education institutions with full boarding and financial problems should therefore reflect on whether they can reduce or avoid full boarding in future in order to reach financial sustainability.

6.9 Using the training facilities at a 100%

Would a business person buy a turning lathe without using it? Would a private hairdresser order a pair of scissors, just to leave them unused? Having visited lots of vocational training institutions in Africa, I must complain that very often the workshop facilities and machinery are underused. Sometimes, they look more like an exhibition or a dusty museum. As vocational training is costly, and cannot count on public or donor subventions in a long run, it is important to think about successful strategies to reduce costs on the one hand and to raise local income on the other hand by using tools, machinery and know-how for production and income generation. Often vocational education institutions in Africa, technical colleges in particular, are empty during school holidays, afternoons, evenings and Saturdays. The existing facilities could be used better, for example, by offering non-formal training courses or evening classes

for poor target groups or organizing the practical training in 2 to 3 shifts or offering services for neighbouring micro-enterprises. Workshop equipment, vehicles, machinery, office equipment, generators, buildings and plots of a vocational training institution are an immense richness, an immense capital. If this wealth is not used, it does not make any sense to entrust more of it to a training institution (see Holy Bible, Mt 25, 14-30).

6.10 Vocational education as a business

Just a few hours of entrepreneurship training for students written on the blackboard are by no means sufficient to learn something about business. MISEREOR is convinced that *the entire institution* with all its facilities should be managed in an entrepreneurial way. If the vocational education institution is run like a commercial enterprise, then the training conditions are close to the reality of working life and young people will get well prepared for professional life. Such an option requires a qualified and experienced management. Principals that are used to public administration and a regular monthly salary may have severe problems to change their mentality to a business-like one.

Vocational education as a business also means that learning takes place mostly in the workshop, not in the classroom. At least 75% of the training should be done in the workshop. At the CTAP e.g. this happens in private workshops and also in the Centre. All, really all products or services of the training should be useful and offered for sale. A welding student, for example, who only trains on small iron pieces that are welded together and thrown away afterwards should not exist in the future. All steps of business should appear in the training (first contact to customer - planning - technical drawing - price calculation - quotations – getting orders – procurement and economic use of material - construction - finishing - transportation - assembly - invoicing - profit calculation – book-keeping). In every vocational education institution, it should be possible to at least recover the costs of the material used.

Such a training institution looks more like an enterprise than a school but the preparation for working life is far more effective than in a technical school. Following this path, it is as well possible to finance the running costs (not the investments in buildings and equipment) of the institution even when there is no or little public money, and without demanding high training fees. Such a concept is not easy to realize in institutions which are used to receiving public funds or donations. It takes years and needs a motivated management to sustain it. But it is not a dream. MISEREOR has supported vocational training institutions in Africa and Asia which are successfully gaining the running costs, and some of them make even profit (Greinert et al., 1994, 188-219).

7. Conclusion

The experience of the CTAP in Tchad has shown, that church managed vocational training institutions in Africa are able to offer relevant and cost effective training for the poor according to the needs of the labour market, sometimes regarded as model institutions in their country. MISEREOR is convinced that vocational education represents an important weapon to fight poverty and hunger in the world. Vocational education institutions are obliged to permanently adapt to changing economic challenges caused by new technologies and changes in the local and global economies. This adaptation process is sometimes painful and sometimes exciting, but indispensable to vocational education to lead to employment and to substantially contribute to poverty reduction in Africa.

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Company learning-time strategies - empirical studies on company approaches to continuing training

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Company policy is increasingly focusing on learning times as part of personnel-oriented corporate development. Many enterprises are testing new working time models and learning time concepts. Continuing training has a central position in the discussion on redistributing working time and learning time, because the lifelong learning philosophy specifies a harmonious balance between working and learning from the outset. How distinct and how flexible are the 'time-sharing' and 'finance-splitting' approaches which require employee-supervisor agreements?
A study of training coordinators, personnel managers and works councils in several companies revealed that their working time and learning time patterns could be ranked according to level of regulation. The insight gained allows us to set guideline criteria for designing and developing company learning opportunities. The objective is to analyse the spectrum and then to systematically describe and assess this area from the point of view of participants.

1. Introduction

The range of companies' learning time implementation strategies is widening, not just in Germany, but in many other EU countries, too (cf. Schmidt-Lauff, 2000 and 2001). Empirical research thus faces a difficult challenge. The traditional dichotomy between working time and learning time is disappearing. Company and collective bargain agreements and individual contracts will all be affected. To date, research projects on this topic, for example in Germany, have been restricted to related collective bargaining and company agreements (cf. Sutter, 1989; Bahnmüller, 1995; Seitz 1997; Heidemann, 1999). The findings presented here from two empirical surveys of human-resource and training coordinators and works councils constitute concrete examples of how learning time and working time models can be merged([1]). How is entitlement to learning time expressed in more flexible working time models? What are the concepts behind working time/learning time models in companies? How are the value and validity of rules on learning-time entitlement rated?

Researchers conducted 20 structured interviews with training and human-resource coordinators and works councils at ten companies. Six companies were of medium size (with 500 – 10 000 employees). These were compared against two smaller companies (with fewer than 300 employees) and two larger (with over 10 000). The sectors involved ranged from mechanical engineering, printing, measurement and electrical engineering, energy and steel to banking and IT. Nine of the queried companies have wage agreements; seven of these contracts contain explicit rules on continuing training. In addition to wage agreements with regulations on continuing training, two companies have training contracts with employees.

The background of our survey is current recognition of increased conflict between work organisation and working time regulations, erosion of normal working conditions, demands for continual learning and changing company training policies (cf. Herrmann et al., 1999; Bosch, 2001; Dobischat/Seifert, 2001). The postulate of a constant 'lifelong' willingness to learn challenges companies, social partners and employees to develop and implement appropriate collective bargaining or company agreements on skills acquisition. The increasing dismantling of 'normal working biographies' necessitates consideration of how to support and cultivate learning outside traditional learning times. More flexible working structures also hinder institutional learning. To date, German collective bargaining and company agreements on learning times and continuing training lack allowances for changes in work organisation patterns and do not reflect more flexible working-time models.

The following article begins by attempting to systemise entitlement to learning time and continuing training regulations. It goes on to categorise types of company training and to discuss time-based and

money-based types of co-investment (i.e. different ways the company and the employee can share contributions to continuing training measures with benefits for both). After a closer look at the relevance for specific groups of employees, the article provides stimuli, examples and hints for potential future directions of company learning-time strategies. Quotes from the interviews are sometimes included to illustrate points([2]). The aim is to portray the whole spectrum and to provide a systematic description and assessment of the field from the point of view of human-resource coordinators and works councils.

2. Levels of regulation of training entitlement and continuing training

The empirical findings revealed three general rankings (high, medium and low). The grades represent companies' systematic ranking of time and financing models for participation in continuing training.

1. High level

The employee has concrete and quantifiable entitlement to continuing training (e.g. set number of days). Company training regulations distinguish between two fundamental forms of training: *employer-instigated* training, usually relating to occupational function, and *individual-initiated* training, often unrelated to job practice. At this level, employer-instigated training usually takes place during working hours. The company bears 100% of the costs (course fees, travel expenses, accommodation). Training focuses on acquiring job skills.

When employees initiate training themselves, they attend all or half of the course in their own time. Various working time models can be adopted. For example, learning time can be taken from overtime accounts or hours can be shortened to allow the employee to attend a course. The company pays in both cases. Training is primarily directed towards qualifications which have little to do with the employee's function. There is no direct link to the job or to company practice. Decisions on continuing training measures and schedules must be negotiated between employees and their supervisors.

2. Medium level

Some continuing training agreements are expressed less concretely. Employee entitlement to a specific course is arranged between workers and their supervisors. These arrangements are made during institutionalised meetings on achievements, targets, career development and training, etc. At this level, *employer-instigated* training takes place during working hours and the company covers the costs. In the case of *individual-initiated* training, employees must take at least 50% of it in their own time (it may be as high as 100%). Employees can attend classes during their free time or reduce overtime. The company pays the fees.

3. Low level

The employee has no formal entitlement to continuing training. No institutionalised discussions take place. Instead, rough estimates based on experience form the basis for deciding how much time is available for training. '*There is no norm – just guesswork. At the moment we estimate that we need 5% of regular hours for training*' (G, p. 2). Employees are subject to the predominant 'training culture' in the company because no institutionalised discussions for planning employee training take place. The greater the variety of working time models (e.g. part time, shift work) and the more rigidly working time is organised, the more difficulties the employer will have asserting claims to learning time.

Problems in the medium and low levels are directly related to the great importance of discussions, negotiations and communication between workers and supervisors. They affect numerous different areas of company culture, such as managerial responsibilities, the predominant training climate, employees' right to participate in decisions, etc. The studies showed the that existence of training agreements is not the only significant factor. Much more important is the extent to which learning time is considered when devising various working time models. Therefore categorisation into levels is initially

([1]) A comprehensive survey of the findings of the 'Zeitpolitik und Lernchancen' project executed by a working group consisting of higher education institutes in Bremen, Duisburg, Erfurt and Hamburg and the Hans Böckler Stiftung's Economic and Social Science Institute (WSI) was published in R. Dobischat et al. (2003) 'Integration von Arbeit und Lernen'.

([2]) The quotes are taken from the interviews with experts, which are archived together in the working group's collection.

a purely formal structural ranking which is not automatically reflected in practice. However, the rankings do indicate different decision-making scopes. This affects thematic, financial, accreditive (i.e. if a course awards a certificate), personnel and corporate culture aspects.

2.1 Continuing training topics and categories

As outlined above, company continuing training policies and their themes can be classified according to the constellation of interests of company and employees:

- *employer-instigated training*
and
- *individual-initiated training.*

This typology initially refers to who initiated and who arranged the training (company or employee). It does not yet address training content. A distinction can be drawn between functional training (for directly job-related skills) and extra-functional training (which imparts skills for use out of the immediate job context).

The findings show that often an (inadmissible) link exists between the functionality of training and who initiated it. It does not always hold that individuals show more interest in extra-functional schemes and companies prefer job-related training. Furthermore, the division between functional training and that which promotes individual interests is not always clear and is usually difficult to identify in practice. That means that an increasing number of *mixed forms* arise, where the initiative comes from employees, but training content is also functional and related to jobs. It is a win-win situation, since the skills are both valuable to the company and in the interest of the employees (e.g. they increase their labour market value).

The categories and the regulations which exist in some companies because of the problem of mixed forms should be seen as negotiable compromise solutions and not as fixed rules. 'If I arrange a welding course it might serve business purposes for one person and not for the next. I'm sure it wouldn't be a company priority for a secretary to attend the course. That means that I can't just consider the training measure itself. I have to look at the measure and the candidates in their current work situation before I can make a decision. You can't just make a sweeping external rule (...) you have to compromise.' (F., p. 4f). This can lead to varying interpretations. The works councils fear that guidelines which are supposed to support employee rights are being undermined by too much flexibility and vagueness. Most survey participants said that ultimately supervisors usually decide what training measures to support and thus on the company's financial commitment.

The current over-emphasis on functional training content is also problematic. Since these measures are employer-instigated they do take place during working hours and the company does bear the cost, but they also only impart a fraction of the required skills. Primarily members of works councils cited the lack of non-functional training options. Without the appropriate regulatory structure some employee groups have very limited access to training. The findings demonstrate that most extra-functional training measures in companies are initiated by the employees themselves. The more influence employees have over training content and the less direct relevance managers see it having for the company, the smaller the company's share in the co-investment (cf. next chapter). Training subjects of this type include courses in foreign languages, career advancement and acquiring marketable skills. Given the increased internationalisation of the labour market, it seems rather shortsighted of companies to leave proposals for language training up to employees.

Works councils worry that training is allotted arbitrarily. Companies are accused of misusing employees' needs for their own benefit and at the same time saving money by asking them to contribute more and more to fees or by making them attend courses in the evenings or at weekends. The strict division between working hours and leisure time makes time a decisive factor influencing categorisation and financing of continuing training measures. Employee representatives are exercising less and less influence over these processes because employees and supervisors are increasingly negotiating with one another directly.

2.2 Co-investment models for vocational learning

Companies and employees make different contributions to co-investments depending on how training measures are categorised (see above) (cf. Heidemann, 1999; Faulstich/Schmidt-Lauff, 2000b). The term co-investment refers to all forms of joint (i.e. employer and employee) outlays for continuing training. To distinguish between investments of time and of money, two different terms were introduced: time sharing and finance splitting (Faulstich/Schmidt-Lauff, 2000a).

Division of costs between companies and employees results in variously proportioned contributions to financing continuing training schemes. If no regulations exist on how to categorise measures according to initiator and subject catalogues, time sharing and finance splitting are determined for each specific case. Company decision-making processes on continuing training are thus becoming more complex.

2.2.1 Time-sharing forms in continuing training regulations

Training based on time sharing can take place in free time or by working off overtime, debiting time accounts, working shorter hours or receiving time off to improve skills. Time sharing denotes the option of gaining learning time from various sources. Within a company, these are hours paid by the employer and expended by the employee (work hours, free time, overtime and additional time off, etc.) Initial observations suggest that new models such as reducing working hours with age could, under certain circumstances, encourage older workers to participate in training and not just to accumulate time 'for an early retirement' (B2, p. 13).

Flexible working models can be particularly significant for continuing training if they allow workers to collect time, giving them a further stimulus and motivation to take a course. Interviews with companies suggest that employees are allowed to take time off, particularly for long-term continuing training measures. Works councils see this as a positive signal that companies are willing to support 'more comprehensive training' (A2, p. 1). Flexible working time models and accounts can help smaller companies deal with occasional staff shortages. These require employees to give up some of their free time in order to allow (perpetual) continuing training for all. A further advantage is that investment of their own time enables employees to attend continuing training courses and to influence training contents which are not explicitly needed for their current job and which go beyond the direct work context to impart further-reaching skills.

A controversial development is that workers are studying more and more in their free time and that courses are often financed by the employee alone. And this is not just the case with employee-initiated, extra-functional or 'marketability' courses. The findings reveal that employees are also investing their own time and money in functional training. Time sharing has placed a new focus on the topics 'work hours based on trust' and 'self-determination of working time'. The company transfers organisational responsibility for working time to individuals or teams (e.g. via target agreements). However, these responsibilities are often not clearly assigned (cf. Bosch et al., 2001). Trust and self-determination do not automatically mean that individuals have full control over how they use their time. Hildebrandt has pointed out that the 'new work model' is inherently paradoxical. It is caught 'between functionalisation and self-determination in the company' and is characterised by 'externally controlled self-organisation' (Hildebrandt, 1999, p. 10 f.).

Time investments for continuing training are affected by the fact that the elimination of clocking systems does not automatically yield an increase in autonomy over time use. Since division of specific continuing training measures into different types is already difficult, when times are no longer registered at all categorisation will scarcely be possible. Investing time in continuing training will thus become impossible.

2.2.2 Finance-splitting forms in continuing training regulations

Although time sharing has scored initial successes in recent years, the research shows that finance splitting is lagging

behind. Hardly any options seem to exist for companies and employees to negotiate flexible financing of continuing training measures. Almost three quarters of the firms surveyed follow an 'either/or' policy of paying either all or none of the costs.

Forms of finance splitting are mainly found in cases where the company pays for a study course following successful completion or attainment of a particular grade average. Few interviewees mentioned the pressures to work hard and to succeed which rules such as these may impose. Human-resource and training coordinators and works councils consider it only right and proper for individuals to contribute financially to their own training if the main advantage is to them and courses are particularly expensive.

Repayment clauses which apply when workers leave a company constitute a kind of 'reverse' finance splitting option. On the one hand, they resolve conflict between training rights and subsequent obligations, and on the other hand they ensure that the added value of training stays in the company, since the worker is discouraged from leaving.

2.3 Continuing training regulations and specific employee groups

An additional decision area[3] for learning time entitlements and continuing training regulations is relevance for individual employee groups. The interviews revealed that the main problem groups for continuing training regulations are older workers, foreigners and employees with flexible hours. However, it is almost impossible to make any general statements on specific employee groups. The trend to individualisation and one-on-one negotiations mean that this is likely to be even more the case in the future. In general, the companies investigated have very few explicit blanket regulations on the continuing training as opposed to the initial training of specific employee groups. In isolated cases, usually only in large firms, special career development exists for trainee managers. Some companies are also beginning to consider the specific situation of part-time workers in their continuing training policies. Current steps are tentative, despite the fact that a huge increase in the number of part-time jobs and workers is likely. At the same time, companies are not paying sufficiently discriminating attention to the various ensuing problems.

Companies are sending out very ambivalent signals as far as **age** is concerned. Although they emphasise the value of many years' experience, older workers have few development opportunities, excluding them from potential analyses and long-term training measures from the outset. Managers claim that older workers have often lost their ability to learn. Cause and effect are hard to separate. Lack of perspective and financial and moral support tend to precipitate this behavioural pattern. 'The problem is, do they think they're capable? And do other people think they're capable of learning a new skill?' (G2, p. 8). Acceptance of continuing training therefore does not seem to depend on age, but on mindsets.

Foreign employees constitute a further problem group. The respondents stated that this group requires special training measures involving simplified language and consideration of language barriers. However, this group also has little access to career advancement or personal development opportunities. Many foreign employees initially join companies as unskilled and semi-skilled workers. Since promotions increasingly depend on a combination of work experience and training, unskilled and semi-skilled workers face the problem of how to qualify (cf. Bosch, 2001). The issue of continuing training for foreign employees is thus a vicious circle. Training is primarily bestowed on qualified personnel, but workers without qualifications have few chances to develop their careers and participate in vocational training.

The third problem group comprises **employees with flexible hours**. Potential hurdles the study identified were the complexities of organising time and the teaching methods of training measures. It is particularly difficult for this group to arrange co-investments since it is necessary to juggle times for training measures. As working hours become ever more flexible (flexitime, part-time, temporary employment, weekend work, etc.) it becomes harder to find time slots for learning (e.g. in shift-based operations) and to ascer-

[3] This is a traditional area of company continuing training regulations, which is also addressed by the German federal law on company vocational training, the Workplace Labour Relations Law (BetrVG, Article 98, Paragraphs 3 and 4). It stipulates that the works council has a say in selecting employees to take part in vocational training measures (for more details see Breisig, 1997).

tain time worked (e.g. because people work at home and can manage their own hours) as the basis for eligibility for training.

3. Learning-time strategies: past experiences and future development

Over half the interviewees stated that the working time/learning time combinations were introduced as a kind of **signal** which impacts in various ways on the company. It heralds 'employee co-responsibility for maintaining and improving skill levels' (B, p. 3). The measure is intended to create a link between employees' shared responsibility and their sacrifice of time off. This is expected to increase individuals' willingness to take part in continuing training as well as their motivation to learn. The underlying principle is that employees who devote their own time and money to training are also better motivated and thus learn more. The findings show that works councils in particular feel that the signal encourages workers to see learning as an opportunity for personal development as well as functional training necessary for the job. This points the way towards higher valuation and continuity of continuing training, since it will require long-term training plans, company training strategies and combinations of investment in technology and human resources.

The increasing **work overload** in daily operations (cf. Stück, 1999; Bosch et al., 2001) is an important argument for introducing working time/learning time combinations along with legal regulations for claims to learning time. Overworked employees may view the obligation to learn as an additional burden. Eligibility for 'free time for learning' should help workers to abandon the notion that continuing training is more work and another constraint on their freedom.

Job security generates a double-pronged impetus to initiate working time/learning time combinations. They ensure the employability of individuals by imparting necessary skills, and also safeguard jobs and afford advantages for the company in its constant struggle for market competitiveness. The interviewees felt that companies and workers were threatened by failure and loss of jobs respectively, and that this can only be countered by employees continually upgrading their skills. However, the findings show that companies do not feel obligated to ensure employability and instead shift the onus to the employees themselves.

Another reason to introduce working time/learning time combinations, from the point of view of works councils the most important reason, is the company's **time-saving policy** 'to tap employees' free time' (E, p. 14). Since pay for absent staff still constitutes the bulk of company spending on continuing training (cf. Weiß, 1997), individuals must finance a large chunk of their course, with the size of their share depending on the subject. Small companies do not have adequate personnel to allow employees to participate in continuing training frequently or any time they like. The absence of a single employee has greater impact. But it is also becoming standard that employees in larger companies have to devote their own time to a training course. The co-investment forms of time sharing and finance splitting establish the balance necessary to liberate decisions on training. The introduction of working time/learning time combinations is the product of individual motivations and corporate culture. In the long term, companies should adopt a 'learning culture' (B, p. 4) based on lifelong learning.

Responses to working time/learning time combinations are both positive and negative. We detected varying (not particularly well analysed) perceptions of the concept. For example, interviewees positively assessed the increase in employee requests for continuing training and individual training plans. Employees are more willing to commit to their own training, e.g. through investing more time. The higher valuation of training has triggered a further trend toward continuous, lifelong learning. Regulations permit training to be better organised and eliminate arbitrariness. They introduce uniformity across the enterprise and can make the company's continuing training processes more transparent. Labour representatives consider fixed regulation of working time/learning time combinations an important orientation aid for all parties concerned.

It defines how supervisors classify various types, how employees make entitlement claims and what support the works council can offer. By agreeing to definite rules on training entitlement, companies can send a clear signal to their staff that continuing training is desired.

Human-resource and training coordinators negatively assessed employees' frequently half-hearted interest in training measures. They observed a passive attitude towards learning and doubts as to its value. This old-fashioned way of thinking detracts from the usefulness of existing learning-time regulations. Workers are absorbed by the traditional question of whose time is to be used for training. On the other hand, in everyday reality working time control systems are obsolete in many companies, so that the principle of 'learning time is working time' is no longer applicable. Existing regulations are not satisfactorily integrated into comprehensive, long-term company training strategies. The trend towards individual negotiations between employees and supervisors heightens the risk of arbitrariness and non-participation. Works councils consider the – usually creeping – redistribution of learning time a major risk. This tendency has been amplified by the disappearance of traditional continuing training forms such as classroom seminars. Self-learning materials to be used according to individual needs, evening academies, and virtual learning forms (e-learning, blended learning) are superseding classical training forms. This influences the distribution of learning time, because companies are happy to make a monetary contribution for materials but pass the time responsibility on to employees. Furthermore, making employees use their free time for training measures seems more justifiable when one considers that the measures have also freed themselves from traditional, institutional straitjackets.

4. Outlook: Learning-time strategies and claiming entitlement

The reality of company continuing training policies, continuing training regulations and approaches to them is a complex, often opaque, confusing and unsystematic hotchpotch of responsibilities, obligations and claims for entitlement to training. It has been established that neither the existence of continuing training regulations in collective bargaining agreements and company and/or individual job contracts, nor the type or size of the enterprise has a determining effect on how companies enforce existing agreements. This demonstrates that, despite the frequently postulated high status of continuing training in companies and the debate on training as a competitive advantage and human resources as a source of business success, these vows are rarely backed up by the introduction of comprehensive working time/learning time policies.

The spectrum of existing regulations on training entitlement and continuing training is generally very broad. The significance of abandoning earlier rules which made learning time a part of working time should be discussed in conjunction with temporary staff shortages (especially in smaller companies) and more flexible working-time forms in order to counteract deficits in collective bargaining and company agreements on learning time and continuing training, while taking the aspect of working time flexibility into account. The possibility of reorganising learning time to include free time, overtime, time off to improve skills, etc. gives companies and employees more options for participation in further training. The erosion of normed working conditions demands consideration of the growing number of flexible workers, their specific work forms, time accounts of all kinds and explicit links to training times. It would be naive to assume from the findings that learning-time combinations give all employee groups new equality of opportunity. At the same time, managers are playing an increasingly bigger role in planning training and deciding on its implementation. Individuals are thus determining who should be allowed to take part in the 'career chase'. Superordinate legislation such as collective bargaining and company regulations are being replaced by subjective discretionary powers (cf. Wittwer, 1995).

Works councils fear an increasing tendency to plunder employees' time accounts. This has a knock-on effect, influ-

encing company continuing training policy. Since times are generally no longer recorded and only have marginal influence on the estimation and assessment of performance, classification by various time-use forms can hardly succeed. Time for company continuing training measures is only allocated diffusely – either as 'continuing' or 'lifelong' or 'alongside'. Demands for more explicit time slots for various activities including learning are becoming increasingly difficult to meet.

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Building bridges between school and working life

A study of the approaches adopted by schools to create beneficial preconditions for young people's entry into adult life and the working environment.

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The labour market of today requires higher formal qualifications and broader knowledge, resulting in a greater risk of unemployment, especially among young people. For young people, unemployment can mean a threat to their personal values, such as the gaining of adult status. Schools are criticised for being detached from reality and for not being able to develop the knowledge and qualifications that working life demands. The purpose of this case study is to examine how schools with vocational training programmes organise their work in order, on the one hand, to impart the knowledge that modern working life demands and, on the other hand, to introduce young adolescents to adult life and the working environment.

Abstract

The labour market has changed, both locally and globally. This requires higher formal qualifications and broader knowledge, resulting in a greater risk of unemployment, especially among young people. For young people, unemployment can mean a threat to their personal worth, such as the gaining of adult status. Schools are criticised for being detached from reality and for not being able to develop the knowledge and qualifications that working life demands. The purpose of this case study is to examine how schools with vocational training programmes organise their work in order, on the one hand, to impart the knowledge that a modern working life demands and, on the other hand, to introduce young adolescents to adult life and the working environment. Three independent upper secondary schools were studied by conducting interviews, through observations and by reading through documentation about each respective school. Sometimes, teaching is performed in an unspoken form, in a more or less conscious manner through socialisation, sometimes it is done intentionally within the school. The bulk of teaching activities within school is carried out in the form of conventional instruction where the emphasis is on cognitive knowledge in the form of facts and comprehension. Knowledge is also found in different situations, in practice and in unspoken form, and in order for this contextual knowledge to be acquired, teaching activities must be carried out in a community within the working environment. The schools in the case study convey knowledge, collaborate with the working environment and introduce pupils to working life in different ways. The pupils find work after completing their education and are thus able to establish an independent life for themselves and acquire adult status.

Introduction

Youth, according to Mitterauer (1988), is the period in one's life that lies between childhood and adult life. During the period of youth, an independent personality develops, that is to say a personality independent of parents or guardians with regard to both socioeconomic and psychological aspects. The routes to this independence vary. The life of an individual consists of various stages which are separated by key transitions which result in a change in the status of the person making that transition. One example of a key transition is the departure from school to

enter working life. Social structures, institutions and norms all have an influence on when, during the course of our lives, an individual is deemed to be an adult. To be able to take part in the main basic processes in society and to be seen as an adult by others, the individual must, among other things, be self-supporting. (cf. for example, Jacobsson 1997, 2000; Waara 1996). The adult status of an individual is thus based largely on how far he or she has come towards becoming established in the labour market.

The length of time spent as a youth has become longer. One of the reasons for this is considered, among other things, to be due to the extended length of time spent in education (cf. for example, Bjurström 1997; Börjeson & Gullberg 1999), since the labour market requires ever higher qualifications and far wider knowledge (*Ungdomsstyrelsen* [Swedish Youth Council] 2000). The changes in the labour market have also meant that the risk of unemployment has increased, particularly for young people. Being unemployed when you are young may, according to Ohlsson & Svärd (1994), possibly mean a threat to important personal worth, for example by threatening the opportunity of living an independent life and, as a result, entering into adulthood.

The ability of upper secondary schools in Sweden to develop the knowledge and qualifications that lead to work is thought to have reduced. Today, there are no alternative education routes to upper secondary schools. According to report No 168 (1999) from the *Skolverket* [National Swedish Agency for Education], just four out of ten upper secondary school pupils who had left school in the spring of 1995 were in gainful employment one-and-a-half years after they had finished school. Around one third of the pupils continued studying at college or university. Those pupils who did find work were over-represented in the services sector and underrepresented in industry and in local and central government.

Upper secondary schools in Sweden are a uniform form of school with different programmes of education. The programmes cover both academic education and vocational training. The aim of the upper secondary school is to give young people from different sectors of the population an equal education. All education/training programmes last for three years and entitle the pupil to carry on studying at college or university. Certain programmes entitle the candidate to pursue theoretically advanced education, others have a more practical leaning and provide merely general entitlement to pursue higher studies. (cf. for example, Egidius 2001; Richardson 1994; Prop 1990/91:85.)

Young people are affected to a greater extent than adults by the increased unemployment (Swedish Youth Council 2000). This is often due to the fact they do not have the necessary working experience or lack a network of contacts within the working environment. Schools are criticised for being detached from reality. According to Carlgren (1999), school is a special kind of experience where the pupils are required to learn things which they will later be able to use in different contexts outside school. What is difficult is tailoring the work of the school so that it is better able to meet the requirements of working life, namely that school is consistent with reality.

In Sweden, school has largely been a matter for the State, that is to say central and local government. The most schools are government schools and are financed by the government and legislated for by national laws, curriculum and syllabi. The general school system aims at "the same school for everyone" with an equal choice and the same quality of education throughout the country. As many other western European countries changes in society during the last twenty years have led to an extended need for individual choices and flexibility among the citizens. Thereby have laws and legislation become less detailed, which in turn has opened up for local variations. (cf for example Arnman & Jönsson 1993; Olsson & Johansson 2001)

Private schools, or independent schools, at upper secondary school level were set up throughout the 1900s, but the attitude of the State was restrictive for a long time. The motive for support from the State was, in the first instance, that it supported a desired pedagogical or confessional complement to education within the general

school system. In recent years the school politics has changed. Independent schools are considered important within the general school system since they contribute to extended variety, competition between schools and development of Swedish schools in general (cf for example Arnman & Jönsson 1993; Richardson 1994; Jonsson 2001; SOU 2001:12.)

For schools hoping to receive a State contribution, the State imposed the requirement that education should be marked by the basic values and general objectives found in the *Skollagen* [Swedish Schools Act], the curriculum and course syllabuses (*Skolverket* 2000).

In 1993, independent upper secondary schools were given the legal right to receive contributions from the local municipality in which the pupil lived. This change in the law resulted in a rapidly-growing number of independent upper secondary schools. In the 1992/93 academic year, there were 16 joint independent upper secondary schools in operation, a figure which rose in the 1996/97 academic year to 45 and, in the 2000/01 academic year, increased to 101. The number of pupils in the 1993/94 academic year stood at around 2 500, increasing in the 1996/97 academic year to around 7 000 and to almost 9 000 in the 1998/99 academic year. The number of pupils at independent schools is roughly equal to three per cent of the total number of pupils attending upper secondary schools throughout Sweden (*Skolverket* 2000; SOU 2001:12).

Purpose

The purpose of this study is to examine how independent upper secondary schools with a programme of vocational training organise their work, on the one hand in order to impart the knowledge that a modern working life demands and, on the other, to introduce young people into working life and thus be able to reduce the time it takes before pupils enter the labour market and adult life.

Method

This study is based on three case studies that looked at independent upper secondary schools. The schools selected have different principals and different education/training programmes and teach in different ways. The case studies were implemented by holding semistructured interviews with open thematic questions (cf. for example, Frankfort-Nachmias & Nachmias 1992; Denzin & Lincoln 2000; Andersson 1994) with headmasters, teachers and pupils, and also with supervisors from the training placements. Moreover, observations were made both at schools and at the premises of the training placements. In addition, documentation about the respective schools was studied. As a selection framework, the *Skolverket's* list of independent schools offering vocational training programmes was chosen. This comprised a total of 35 schools. The independent schools selected had to be innovative in terms of teaching ideas, work forms, organisation and course content. The innovative approaches of these schools also had to have been in operation for a long period of time, be well-anchored in the school and, to a certain degree, be shown to be successful. The selection was made with the help of tips and ideas from, on the one hand, various different individuals and, on the other hand, various sources of information, such as studies and reports about the school and school development and, finally, through telephone conversations with the headmasters of the proposed schools. Once the schools had been sorted, three independent schools remained and these have been given the following fictitious names in this study: Björklöv school, Kronblad school and Tallbarr school.

Theoretical starting points

To be able to do something, you have to learn how to do it. Sometimes, teaching is performed in an unspoken manner and more or less consciously through socialisation, and sometimes it is done intentionally within school (Rasmussen 2000). Teaching at school is based on giving the pupils knowledge and skills (SOU 19992:94). What constitutes knowledge varies, on the one hand, from one area to the next and, on the other, over time (cf. for example, Andersson 2000). The demand for theoretical knowledge is increasing, but knowledge is not just cognitive. Knowledge is found in various situ-

ations, in practice and in unspoken form (cf. for example, Wenger 1998; Lave & Wenger 1991; Rolf 1995; Molander 1996; Polanyi 1962). To be able to acquire this "contextual knowledge", pupils must take part in the businesses they are entering. Through practical experience, pupils do not just learn that which is conscious and which lies at the focus, but they also learn the tacit, unspoken knowledge.

In general, people talk about the following forms of knowledge; facts, comprehension, skills (proficiency) and intimate knowledge (familiarity) (cf. for example, Göranzon 1990; Molander 1992; Marton et al. 1999). The most important difference between these is, first and foremost, that knowledge in the form of facts, comprehension and skills all counts as visible forms of knowledge, whilst intimate knowledge is a tacit and invisible form of knowledge. To have intimate knowledge means that we understand the deeper mechanisms and have control over situations. We learn intimate knowledge through experience and use it, for example, when making judgements.

Within vocational training, the bulk of teaching activity is done within the classroom environment, in other words as conventional teaching with verbal instruction (cf. for example, Prop 1990/91:85; Skolverket report 149, 163, 182 and 187). As a result, cognitive knowledge in the form of facts and comprehension is stressed. To acquire knowledge based on trying things out, for example skills, the pupils must be placed in an environment which gives them the opportunity to do things in practice. To acquire intimate knowledge, the pupils must be placed in a community, i.e. in an environment for contextual learning. It is thus necessary to balance these forms of knowledge so that the pupils within vocational training are able to acquire the knowledge demanded by working life as well as the experience they require to enter into the labour market.

Result

What the three independent upper senior schools have in common is that the principal is a joint-stock company, the school units are rather small, they collaborate with the working environment and most pupils go into jobs after they have left school. However, the differences between the schools are appreciable.

Björklöv school

The owner of the Björklöv school is a joint-stock company. The school was founded in 1994 with a view to creating upper senior school education for young people interested in working within industry, with a focus on technology and science. Björklöv school is a school of around 150 pupils and is situated within the industrial area of the company, housed in modern premises with good technical and laboratory equipment. There are roughly 15 teaching staff who work full time. Of these, the technology teachers are civil engineers with experience of the working environment and professional life. Certain teachers are experts who have been hired in, for example in communications psychology, presentation technique, group dynamics and group processes. The teachers work 40 hours a week, have their own workstations and are on hand at the school throughout the working day.

The industrial programme is both vocational and study-oriented. The teaching is very broad and contains more syllabus items than many other industrial programmes, which means that the pupils study for almost four years, rather than three. The level of education is high. A monitoring group makes sure that the school is conveying the level of knowledge demanded by the labour market. This monitoring group comprises economists, technicians, marketers and production and administrative personnel.

The industrial programme is divided into five subject areas; technology, economics, communication and social training, English and computing. As a subject area, technology is the governing idea that runs throughout, controlling the route through the pupil's entire education and training, whilst the teachers integrate the other subject areas into the subject of technology. Teachers work with and look for opportunities in order, on the one hand, to collaborate on small and large projects and, on the other, to connect with real-

ity, both within the company and in society at large. In their teaching, the teachers work in accordance with a portfolio and a form of teaching that is problem-based. The core subjects act as a tool for the acquisition of knowledge, and not as a separate subject with separate exercises. This means, for example, that mathematics is not included, but is applied as a tool for problem-solving. Pupils can make an individual selection, choosing to study languages, programming, computer-aided design (CAD) or modern technology. Language is seen as important, based on the assumption that working life in the future will require contacts at international level.

The pupils work between 08.00 and 16.00, with a break of one hour for lunch. They have their own workstations with their own PCs. The pupils work in base groups, on the one hand to benefit from one another in the learning process and, on the other, to learn how to get on and work with different individuals. The teachers introduce a project and the pupils then go off into their base groups and discuss how to agree on how they should approach and solve the project assignment. For example, the pupils gather information from books, on the Internet, in the public library or by conducting interviews. After the assignment has been completed, the results are reported in various forms, normally in writing or orally. The pupils have no homework, apart from in languages. The reason for this is that they should be able to cope with their schoolwork during working hours. The pupils are required to plan their work carefully and are themselves responsible for building up their knowledge.

During the period of study, the pupils make many study visits to various firms. The pupils have "mentors" within the firms, whom they can contact if they need assistance and support. These mentors arrange, among other things, workplace visits and discussion meetings. After the first year of school, the pupils are offered a summer job with one of the company's firms. The pupils must decide for themselves whether they want a summer job and for how long they wish to work. After the second school year, the pupils complete a four-week practical assignment in a country other than Sweden. The pupils – if they are willing and able – may choose the country and arrange their practical placement and host family. The school already has placements set up, mostly in Germany and Switzerland. The placement abroad costs the pupil around SEK 2 000, with the remainder of the cost being paid by the school. During the placement abroad, pupils are required in the first instance to learn the foreign language and to learn about the different culture. During their third academic year, the pupils undertake a major project. The firms associated with the company commission the school to solve "real problems". The pupils themselves select from the company's proposals which assignment they wish to work on, and are given support from both teachers and company personnel during their work. Once the project is completed, the solutions are presented at a major meeting with invited guests of honour. Prizes and scholarships are awarded at the ceremony.

Once the studies are completed, there are opportunities to work within the company. Around 25 to 30 per cent of a yearly intake normally chooses to go and work for the company. Some do military service, others choose to work a year and then carry on studying. Around 30% of a year's intake go directly on to higher education. After completing their studies at college, many of the pupils return to the firm. They know the business, they know how the firm works and they know how to use the software. Throughout their entire time at upper secondary school, the pupils have been trained in the culture of the firm and are familiar with the way the firm thinks.

Kronblad school

The principal of Kronblad school is a joint-stock company. The upper secondary school, which was founded in the autumn of 1994, has some 20 employees and around 150 pupils. The objective of the school is to provide dynamic and exciting training in catering. The company's training premises comprise on the one hand rooms for theoretical teaching of core subjects, and, on the other, rooms for the teaching of practical characteristic subjects, such as a kitchen and dining room. During term time in the practical training segment, they have an "open

business", with daily guests from outside the school, in the form of lunch and à la carte service.

The pupils work independently and are responsible for their own learning. The school also works on a thematic basis, in other words combining separate courses together in different topics in order to create an overall picture within their training. Training is divided into periods. At intervals of two to four weeks, the pupils switch between teaching of core subjects and teaching of characteristic subjects. The pupils regards these changeovers as very positive because it means they do not tire of either of the two subject areas. The school also works closely with the real world, in other words they undertake project work in collaboration with a number of contacts and reference groups, and carry out various external assignments of a varying nature.

The educational basis of the project work and the external assignments involves a portfolio and style of teaching that is problem-based. This acts as an important complement to the somewhat more traditional day-to-day teaching. Examples of project work include collaboration on the transnational network within the framework of the EU's Leonardo da Vinci programme and cooperation with Finland surrounding the "Maten runt Östersjön" project ["Food around the Baltic"]. Examples of external assignments include the arrangement of different functions in the school function room, such as AGMs, association meetings, EU summits and other, more private functions, such as weddings and funerals. The pupils at the school also have the chance to take part in cooking and service competitions, both at national and international level. In a large number of cases, they have successfully won competitions and even more often receive good prizes. The school is a member of the Association of Hotel and Restaurant Schools in Europe (AEHT).

The pupils have 16 weeks' training in a workplace. The aim of this workplace-based training is to give the pupils an insight into the conditions of work within this industry. The school, which has good relations with good restaurants and capable chefs, has a wide selection of practical placements for workplace training – everything from à la carte and restaurants to conference hotels. The school also has international contacts with Ireland, Germany, Italy, Portugal and Norway, and the pupils have the opportunity to visit some of these for four-week practical training placements during year two.

Most of the school's pupils go on to find work once they have finished their training. Normally, only 15% of those who worked in the restaurant and catering profession would still be there after four years. In a survey carried out by the headmaster at the school, it was clear that a significant majority of the school's pupils were still working in the industry, which the school interprets as a very good training result.

Tallbarr school

The owner of Tallbarr school is a joint-stock company. The school was founded in 1999 after a couple of years as a trial business. It is aimed at youngsters who want to work in a practical environment and who receive the bulk of their education in the workplace. All training programmes are specially drawn up, with a focus on electricity, energy, vehicles, industry, locksmithery, painting, floor-laying and ventilation. The pupils can start their upper senior school studies at any time they like during the year, and the term lengths and holiday periods do not correspond with the traditional division of school terms. During the 2000 academic year, there were 28 pupils at the school. Since the focus of learning for eleven pupils was on vehicles, it is this which forms the basis of our presentation in this study.

Training is along the lines of an apprenticeship model. Of the total time spent training, 80% is located in the workplace. This means that pupils are tied to a workplace for four days a week, and at the workplace they have a supervisor who follows them in their work. On the fifth day, the pupils read theory, and this part of their education is carried out within a traditional school environment. Each pupil has an individual training plan drawn up in cooperation with the school and the employer. The training plan is scrutinised by the industry's vocational committee to check that the pupils' training

is consistent with the qualifications required to pursue the profession, and to make sure that the training is relevant to the labour market.

A precondition for being able to start a particular line of training is the availability of an employer who will accept pupils for practical workplace-based training placements. The school arranges training placements, with host companies selected in collaboration with the automotive industry, i.e. the Motorbranschens Riksförbund [National Swedish Motor Industry Association, Motorbranschens Yrkesnämnd [Swedish Motor Industry Vocational Committee] and the Motorbranschens Arbetsgivarförbund [Swedish Motor Industry Employers' Association]. The company provides the school with machinery, mechanics and supervisors, for which the school pays the company. This arrangement is governed by an agreement. The school inspects the intended company to make sure that the training environment is suitable as a training placement before the agreement is signed. There is currently no shortage of training placements.

All pupils seeking training are taken on. These are often young people who are not motivated by the study of theory alone and who, therefore, have poor school reports, but are interested in and possess the necessary criteria for being trained in accordance with a model where practical training and the teaching of theory are intertwined. The first month in the school and in the training placement is an induction month, which is very important for both the school and the host employer. The pupil can find out whether the place of work and the choice of profession is well-advised, and the company has the chance to see if the pupil has the ability to do the job and wants to commit himself to the project. Once the parties have given each other their approval and have approved the conditions, the training starts. Some pupils are paid, others not. There is no logic or fairness in the pay system.

At the workplace, the pupils more often than not work independently, but sometimes work together with their supervisor or other members of staff. The supervisor is chosen by the company. The school gives the company its recommendations before the supervisor is chosen. The supervisor must have the vocational qualifications, be interested in young people and teaching, have confidence and patience, and be open, honest and straightforward in his communication with young people. The supervisor is given training arranged by the school. This often includes information about the way the upper senior school is set up, subject courses and the report system, teaching experience in relation to the vision of knowledge and teaching, and also information about youth and youth culture. The supervisor is trained on an ongoing basis during the three years in which the pupil is trained.

All teachers are paid by the hour. Vocational teachers work both in the school and out in the training placements. All practical components of the training and all aspects of theoretical vocational training assigned to the practical work are carried out at the workplace. Vocational teachers visit the pupils on a regular basis and check with the supervisors what the pupil has been doing, trained in and what knowledge the pupil has acquired, along with details of future training. Coursework in the training which cannot take place at the site of the workplace, both of a theoretical vocational nature and aspects of a more practical nature – for example, stripping a gearbox and repairing it – are done in school. The teaching of theory in core subjects, which is less linked to practical work, is performed in school one day a week. Teaching groups in the school are small, which means more personalised teaching. Core-subject teachers try to integrate core subjects into the profession chosen by the pupils, for example by allowing pupils to work with texts relating to the automotive industry.

The pupils say that they learn more quickly, and more, when they are out in a workplace because it is easier to understand things when they are doing practical work at the same time. In the first academic year, directly after finishing their training, pupils found work within local business, and follow-ups carried out by the headmaster of the school show that all pupils are still working within the industry.

Conclusions and closing comments

Schools can organise their business in many different ways. The approaches of three independent schools have been outlined above. The three schools, which are vocational, handle different training programmes. Björklöv school trains young people within a specially set-up industrial programme, Kronblad school has a specially designed hotel and restaurant programme, whilst Tallbarr school teaches pupils within a specially-tailored vehicle programme. The three schools have different views of knowledge and how that knowledge should be conveyed and to what extent and in what way pupils can and should collaborate with working life.

Björklöv school is, in my opinion, focused on factual knowledge. Training is broad and contains many points on the curriculum, serving to retain a high level of theoretical knowledge. To increase the understanding of factual knowledge, course subjects are combined in different projects, which in turn are linked to the reality which pupils may face when they finish school. Because problem-based teaching is applied as an educational model, pupils learn to look for information, and to process, analyse and report what they find. Because of the way the school works, they become familiar with working in groups aimed at jointly developing objects or implementing facts which may require the acquisition of new knowledge. Björklöv school emphasises cognitive knowledge, with teaching done mainly in the school. During the period of their education, the pupils are certainly offered extensive contacts with working life, involving everything from study visits to the various firms of the company that runs the school to highly company-related project work. Pupils are introduced to working life by virtue of the fact that the school is situated within the geographical area of the company, and a working organisation is set up, for teachers and pupils alike, in such a way that it is like a traditional workplace. Thanks to these contacts with the working environment, the pupils have a network of contacts within the company and gradually become familiar with the corporate culture (socialisation). Many pupils remain within the company and probably have the qualifications necessary to enter into adult life.

Kronblad school does not focus on factual knowledge as much as Björklöv school does. There, they do not integrate course subjects to the same extent since core subjects are taught in the theoretical teaching rooms and the characteristic subjects are taught in the practical training rooms. Teaching is relatively traditional, but to get an overall picture, and thus increase understanding, certain course subjects are themed. Pupils take part in an "open business", thus acquiring practical skills. Kronblad school is, as a result, organised for both cognitive and contextual learning. The two learning strategies also run in parallel throughout the entire period of teaching. The 16-week, workplace-based training also gives pupils the chance to improve their skills knowledge and achieve a certain level of intimate knowledge. Kronblad school also introduces pupils to working life through project work, external assignments and participation in cooking and service competitions. During their time at the school, the pupils thus have many options for establishing contacts within the work environment, thus creating the conditions needed for entry into the labour market and adult life.

Tallbarr school draws up individual training plans which, in the main, do not focus on school-related factual knowledge, but are more geared to holding as much of the training as possible in the workplace. The pupils work independently, under the supervision of both supervisors and vocational teachers as core-subject teachers. In the workplace, pupils train in practical coursework, thus acquiring their skills knowledge. While pupils are being taught in the workplace they acquire intimate knowledge. Because of the way it is set up, Tallbarr school advocates contextual teaching, i.e. teaching which is performed in collaboration within a business outside the school, where the activities are carried out. By adopting this approach, the school gives the pupils the chance to acquire "tacit knowledge" of the profession. When you take into consideration also the fact that such a large part of the training is carried out in the workplace, pupils are introduced to work-

ing life to a high degree, but because they are in the same workplace throughout their entire training, they become immersed (socialised) in the professional business of the practical placement and will probably become specialised in the makes of car the training company works with. Once they have finished school, the pupils find employment and thus have the conditions necessary to become an adult.

To conclude, it can be confirmed that the three schools run their operations in three different ways. Björklöv school imparts cognitive knowledge, offering pupils all kinds of workplace contacts within the company, immersing (socialising) them in the company culture. Kronblad school integrates theory and practice, introduces pupils to working life through 16 weeks of workplace-based training and creates opportunities for them to establish contacts in the working environment via project work, external assignments and participation in various competitions. Tallbarr school focuses on contextual learning, using workplace-based teaching to give pupils the opportunity to acquire tacit knowledge and for them to become socialised with the vocational business of the practical training placement. The schools thus impart knowledge in different ways, cooperate with the working environment in different ways and introduce pupils to working life in different ways. This diversity of knowledge, teaching strategies, forms of collaboration and working life contacts gives pupils with different needs the chance to acquire knowledge and find work after they leave school. My study shows that the different approaches by the schools create beneficial conditions for young people with different interests and needs to find work after they have finished school, and thus economic opportunities to establish an independent life for themselves and develop their adult status. This study shows that, due to the new direction in school polities, young people today are given a wider rang of options. There are local variations and independent schools within the general school system which enables young people to find an educational program that fits them.

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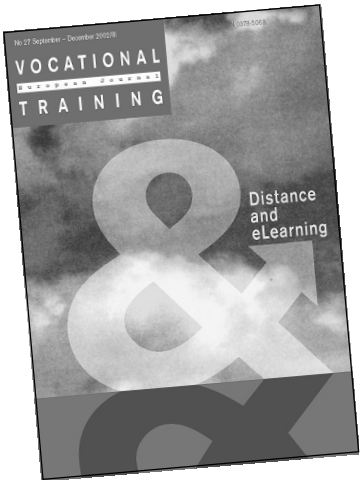

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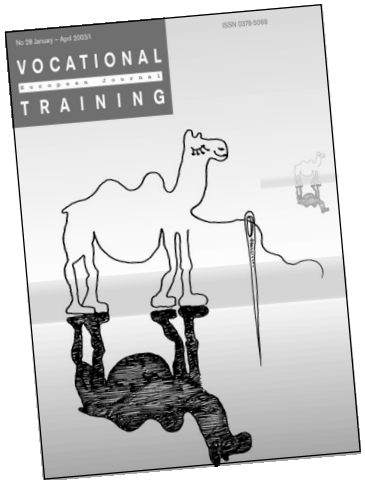

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