

VOCATIONAL EDUCATION IN THE NETHERLANDS: IN SEARCH OF A NEW IDENTITY

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When the Netherlands developed a national system of vocational education at the end of the 19th century, it was a direct answer to obvious shortcomings in the technical and trade professions (De Jonge, 1968). It concentrated on training craftsmen for the traditional, mainly agrarian economy, and technicians for the new, industrial economy. The training being offered was closely related to actual professional practices. In the first place, there was a very stable occupational structure, in which professional knowledge and skills did not become obsolete quickly. This, in turn, made it possible that education was –and remained - up-to-date. Secondly, almost all teachers were also experienced craftsmen, who only started teaching after a long career. The teachers learned actual professional practices through direct experience. In addition, students were also frequently familiar with actual practice, because the occupational structure was so stable: they knew exactly for which profession they were being trained. A stable occupational structure, a clear occupational orientation by the students, and teachers with extensive firsthand work experience ensured that vocational education was a powerful learning environment. For this reason, a dual system had hardly any added value. A consequence is that the apprenticeship system in the Netherlands – as opposed to almost all surrounding countries - had a lower status and fewer students than full-time education (Teerling & Bijveld, 1982).

Full-time education became a subject of discussion, when the Netherlands began to industrialize on a large scale after 1945. Vocational education had the primary task of making the rural youth more “industry-minded” (De Vries, 1988). Because there was much demand for semi- and unskilled labourers (who received on-the-job training), lower vocational education was ‘generalized’. In other words, more general educational disciplines were accented, while less attention was paid to specific, mostly craft-oriented, vocational skills. It was expected that parents would be more likely to send their children to a ‘general’ vocational education, than to a

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traditional vocational school (Meijers, 1983). Vocational education and the world of work and employment diverged even more during the 1960's. Vocational education became integrated in the overall national educational system, as a result of a social development that later became known as *meritocratization* (Wesselingh, 1985). By that it was meant that school diplomas would play an increasingly important role in the distribution of individuals on the social ladder. In order to offer all students an equal chance of obtaining as high a diploma as possible, accent shifted in vocational education from craft skills to more theoretical and abstract knowledge and abilities. The consequence of this was that increasing numbers of students had motivational problems during the initial phases of vocational education and only attended school because it was compulsory.

Students' motivational problems in combination with new occupational demands (which resulted from the transition from a primarily industrial- to a more service- and knowledge-oriented economy) triggered a new identity crisis in vocational education since 1990. In the present contribution, we will go in search of a new identity. First of all, we will evaluate the urgency of the problem. In the first section we will show that increasing amounts of criticism were directed at the functioning of vocational educational system during the 1990's. The national qualification structure was the primary object of criticism, the answer to which was the development of competence-based vocational education. In section 2, we will describe the main content of this education, and we will connect this to the concept of the vocational education school as a career development center. Even though this concept was mainly developed by groups external to the vocational education system (i.e., academics, social partners, and government), a centrally directed national innovation policy has not really been the preferred option, for political as well as substantive reasons. Competence-based vocational education should be realized by a variety of regional innovations, under direction of the schools themselves. In other words, a "bottom-up" approach to innovation is now being favoured. In section 3, we will consider this approach, taking on the role of a "critical friend", and from that position, we will make a number of critical remarks concerning the progress of this process of innovation. Recent research into the development of competence-based learning will receive special attention in section 4. In the fifth section, we will conclude our contribution with a look into the future. In our opinion, vocational education has to focus its search of a new identity through a substantial increase of its own

professionalism, as a basis for self-direction. The central government can support the growth of personal professionalism and the professionalization of schools for vocational education, by formally stimulating opportunities for locally initiated experimentation, and by creating a national innovation fund with key goals for innovation. The proper support for the self-direction of schools requires adequate steering by the central government.

1. The qualification structure under fire

Since the 1970's, the center of gravity of the Dutch vocational education is located in secondary vocational education. The focus here, as in the initial vocational education, is on theoretical-abstract knowledge. As a result of the transition from an industrial to a service and knowledge based economy, this education was quickly confronted with qualitative and quantitative discrepancies between supply and demand in the labour market. The solution to this was – to some extent - transplanted from the UK: a national qualification structure that should assure harmonization between the labour market and the educational system. The qualification structure that was subsequently developed during the late 1980s for non-university vocational education distinguished four levels. Every level is associated with a vocational education programme which has two major variants: one school-based, whereby the amount of practical training is between 20% and 60%, and one work-based, where this percentage is greater than 60%. The lowest qualification level is one for simple operational tasks, with the associated assistant level training. The highest level is for autonomous task implementation, with either broad areas of application or specialization, with an associated intermediate- or specialist-level training.

Central to the qualification structure are the so-called learning outcomes, or “end-terms”, that are determined by the “Knowledge Centers Vocational Education-Business”, for each industry or branch. In a first step, the social partners (employers and union representatives) establish occupational profiles for key occupations in their industry or branch. They describe - per occupation - the core tasks and the necessary knowledge and skills, taking future developments into account. The social partners then formulate the qualifications and the corresponding “end terms”, derived from one or more occupational profiles. They also determine which training variant will be offered, whether the training must be paid for or will be free of charge, and which partial

qualifications need to be legitimized by an external, independent institution. At this point, the Advisory Commission Education-Labour Market (ACOA), established by the Minister of Education, will be asked to advise whether the qualifications and end-terms adhere to the legal requirements. After a positive advice from the ACOA, the Minister of Education ratifies the end-terms and the approved training variant will be entered in the vocational education central register (the CREBO). At that moment, the educational institutions are allowed to develop – on the basis of the ratified end terms - curricula for the programs that they are willing and able to offer. Educational publishers translate – possibly in cooperation with the educational institutions - the end-terms into practical training material. Finally, arrangements are made with enterprises, concerning the scope and implementation of the practical training parts. The entire procedure (from end-terms to training materials) is regulated by the Educational and Vocational Training Act (WEB).

During the 1990's, it became clear that there are many concerns about the effectiveness and efficiency of the WEB. In figure 1, derived from Geurts (2001), we present a summary of a number of studies concerning the functioning of the WEB (see Stuurgroep Evaluatie WEB, 2001). Concerning the effectiveness, there now exists a plethora of strongly differentiated and narrow function profiles. The efficiency also has room for improvement. There is an extensive bureaucracy and – as a result of that - a limited responsiveness to developments in the labour market. The qualification structure stimulates increases in knowledge productivity insufficiently, because the WEB gives all parties (schools, knowledge centers, and supporting institutions) the opportunity for a non-reflective approach to implementing the goals of the WEB. Especially, little thought is spent on considering the qualifications in relation to pedagogic goals. The WEB does not stimulate schools and other parties to actively consider the qualification structure from their own perspective, possibly offering modifications and improvements. Because they see little opportunity to utilize their own experience, educational institutions have not developed a positive relation with the qualification structure, and have never viewed it as an instrument to improve their own quality. They mainly use the qualification structure in a defensive manner, namely as an instrument to legitimize themselves with respect to the government, the inspectorate, businesses, and their own employees.

Figure 1. Remarks concerning the effectiveness and efficiency of the qualification structure

Effective: doing the right things	Efficient: doing things well
<ul style="list-style-type: none"> - too one-sided attention to the demand side - structure not up-to-date: obsolete occupational profiles - qualifications not broad and durable: too narrow function profiles - much overlap in qualification - too many, too differentiated qualification (approx. 700): not transparent - blind spots: new occupations are not given enough attention - confusion in the demarcation between initial and post-initial education - deterioration of educational goals 	<ul style="list-style-type: none"> - bureaucratic procedures with (too) long durations - insufficient connection with initial- and tertiary levels of vocational education and training, leading to unnecessary delays - too little involvement and communication between interested parties; qualification structure is developed in relative isolation - too rigid role distribution between interested parties - lack of clarity in description of end-terms - actors utilize their own opportunities for improving interfaces insufficiently

The quality of vocational education was a subject of contention between employers organizations and the central government, certainly after the European Council decided in Lisbon in 2000 that the European economy needed to transform itself within 10 years into the world’s most competitive and dynamic knowledge economy. The transition to a service/knowledge economy requires other types of qualifications and a more responsive vocational education. The rise of a service/knowledge economy is accompanied by three mega-trends (Korbijn, 2003, p.45ff):

- a) The market is increasingly becoming demand-driven: customers want (at the lowest possible price) custom-made products, i.e., products tailored to their own specific wishes and needs. Customers are increasingly demanding that producers take all aspects of the products’ life cycle into account. This implies that the importance of ‘absolute quality’ (i.e. quality according to industrial criteria) is decreasing, and the importance of the relative quality is increasing. Durability is becoming less important than functionality and usability.
- b) The speed of globalization (i.e., the “global village”) is increasing: customers, partners, and competitors are spread over the entire globe. This trend also accentuates the importance of relative quality, while time-to-market is becoming decisive. The

time between product development and the moment of actually placing it in the market place has to become shorter and shorter, in order to remain competitive.

- c) The world is becoming increasingly dynamic: technology becomes obsolete more quickly and the demands of the marketplace are changing just as rapidly. This increasing dynamism forces producers to place new products in the marketplace at an increasing tempo.

The effect of these mega-trends is that the market is changing continuously in an unpredictable manner, that the ability to innovate is becoming an increasingly important competitive factor, and that knowledge is becoming of key importance. To survive in this hectic environment, businesses have to innovate constantly and at the same time apply “concurrent engineering”, i.e., the organization of their production processes has to be structured, such that employees can work on various different product innovations, and - at the same time - work in multidisciplinary teams, applying integrated design for specific innovations. This means that the organizations have to become less hierarchical and have to utilize all of the knowledge and skills of all of their employees.

2. The school as career development center

Businesses have to become flexible, “learning” organizations, which means that they not only have to invest in knowledge management, but also that the employees must become entrepreneurial: they have to be able to be self-directing. The solution for generating self-direction is primarily sought so far in continuing education and training for experienced employees, and in a broadening of the qualification structure for new employees. The key idea in educational innovation is “competence-based education and training”. This, however, turns out to be an extremely vague concept: it includes not only specific occupational skills but also attitudinal and behavioral characteristics (Thijssen & Lankhuijzen, 2000). In practice, this results in - mainly in the form of experiential learning by means of problem-driven training - more attention being given to the development of concrete occupational skills, often to the detriment of abstract and theoretical knowledge. In a certain sense, therefore, the generalization of vocational educational during the 1950’s is being reversed, without reverting however to the industrial-

oriented training of that era. In modern competence-based education, as opposed to vocational education and training of the 1950's, attention is paid to self-direction on the basis of reflection, thus to the formation of a reflective practitioner (Schön, 1983).

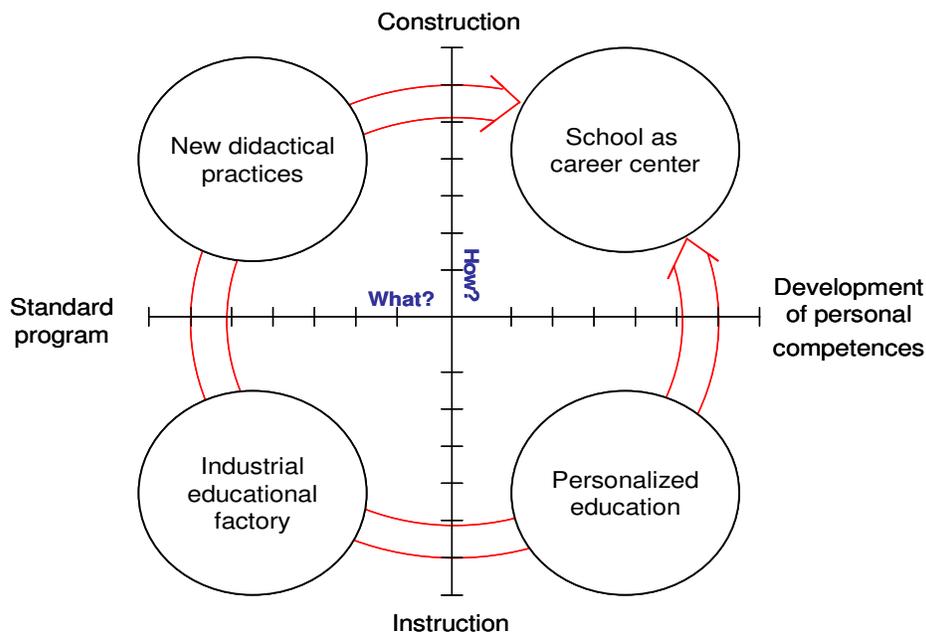
In the mean time, it has become clear that it is extraordinarily difficult, within existing training and educational structures, to motivate young people and employees to become self-directing. Existing structures force schools, as well as supporting institutions, to define self-direction in terms of knowledge that can, in turn, be validated by means of the qualification structure and can be transmitted to students. For this reason, self-direction is defined by these institutions in terms of meta-cognitive and information processing skills, and in terms of emotion- and affect-regulation (Meijers & Wardekker, 2001). It is undeniably true that these competences are important for surviving in a turbulent environment. However, when these are operationalised with an emphasis on technical-instrumental skills the very essence of self-direction is missed, namely, the competence to identify oneself with (i.e., to voluntarily and durably commit to) (parts of) society (Meijers & Geurts, 2002). Becoming self-directed in the area of work and employment, means attaching meaning to one's own work, thereby developing a work-identity (Meijers & Wardekker, 2002).

From this perspective, in the scientific and policy discussion over (the future of) vocational education, as well as in concrete innovational projects, competence-based learning has recently been explicitly understood to be authentic as well as self-directed learning (Collins, Brown & Newman, 1989; Brown, Collins & Duguid, 1989). By authentic we mean that an explicit and well thought-out connection between theory and practice has to be made during their training, in order to enable students to develop the competences that are necessary to become a professional. In the traditional, subject based education and training model, traineeships were intended for this purpose. Much research has shown, however, that there is little connection between theory and practice in traineeships, and there is certainly no systematic development of a work-identity (Meijers, 2004). Therefore, modern competence-based education attempts to a learning environment in as realistic a manner as possible. Students learn, during their training, to act as professionals as possible, and thereby see the relationship between occupational practice and vocational theory.

Learning must be self-directed – as well as authentic - if it hopes to produce competent practitioners in a service/knowledge-based economy, according to the constructivist school in educational psychology (e.g., Duffy & Cunningham, 1996; Simons, Van der Linden & Duffy, 2000). Constructivism assumes that individuals actively construct knowledge by interpreting new information on the basis of pre-existing knowledge, earlier experience, and from personal values and attitudes. Knowledge transfer – at least in the manner that people have always assumed - is therefore impossible. Students can only construct knowledge when the information presented to them can be transformed into something personal (Wardekker, Biesta & Miedema, 1998). This explains why “knowledge transfer” – as intended in the school system - often achieves only limited success. Constructivist learning approaches argue that students must be activated as much as possible so that they may construct their own knowledge, in connection with what they already know and are able to do. Students don’t always have to construct knowledge on their own; cooperation with other students can also play an important role, because it forces students to be active. For example, students may have to explain something to others, or to compare their ideas with those of others (see e.g., Van der Linden, Erkens, Schmidt, & Renshaw, 2000). Teaching then becomes the creation of an environment whereby learners are stimulated, helped, and supported in their personal construction (possibly together with the help of others) of valuable knowledge-content and skills. This is expressed in the well-know slogan: the teacher shouldn’t transfer knowledge, but rather coach the learning process. Educational innovations, such as Montessori and Dalton education, are also based on this idea. It is interesting, however, to note the zest with which these ideas have grasped upon by Dutch vocational education in recent years.

Geurts (2002) has integrated the educational developments around authentic and self-directed learning in a model that attempts to illustrate the process of the re-design of the traditional, content-oriented education in the direction of a system more concerned with personal, competence-development, and based upon constructivist learning-theory (see fig. 2). Re-designing of VET proceeds, according to Geurts, along two dimensions: the What and the How dimensions.

Figure 2 From training factory to career center: two main dimensions for re-design



The What-dimension primarily concerns the contents of VET programs. Are we concerned with a standard program or are we more interested in flexible, tailored-made programs? Questions about narrow and/or broad training arise at the level of the organization. Schools may choose to develop programs not as a funnel, but rather as a (hand-held) fan. With respect to the “fan” metaphor, the student doesn’t have to explicitly choose a specific occupational specialisation at the beginning of the study. Rather, it is important that the student has the opportunity to become familiar many aspects of the occupational reality, and during the course of their training – and depending upon their own interests and ambitions - they can “fan out” over the various (work-relevant) specializations. Of course, this fan metaphor does not preclude participants from immediately choosing a narrow education, if they wish to do so. In any case, multi-sectoral skill development –as opposed to mono-sectoral - is given priority. On the level of the individual, it is important that, in organising the curriculum, emphasis is placed upon offering students a training trajectory with optimal career guidance. The school becomes then more of an organization that offers individual learning trajectories, instead of standardised courses.

Didactics are the primary concern of the How-dimension. The main thrust here is that vocational education has to make the transition from learning-from-instruction to learning-by-construction.

The learning cycle has to be inverted: theory must not precede practice any longer, but practice must guide theory (which then has to be presented just-in-time and just-enough). This idea is being implemented on a larger scale at this moment via various forms of problem-driven education, whereby occupation work related problems are presented by regional businesses. In this way, there is a guarantee that the occupational problems being solved are relevant and realistic. Problem-driven learning (and certainly in its most developed form, also known as practice-driven learning) gives vocational education the possibility to develop its own pedagogical methods, with learning-by-doing and constructive learning as important didactical principles. It is clear that a division between learning and working, and between school and business, has to become less pronounced. In this new didactical vision of learning, there is more interaction between the three parties: student, school, and business. Each party has a responsibility for its own, active contribution to occupational training and the process of professionalization. It is assumed that this process will become more efficient, effective, and pleasant when the three essential actors optimally co-operate or co-create. This requires, at the least, committed (regional) cooperation, with the purpose of optimizing individual careers.

In the lower left hand corner of figure 2, traditional vocational education is characterized as an industrial training factory. We see there a standardised program with clear diploma requirements, with instruction as the primary learning method. Opposite to the school as factory, on the upper right-hand corner, we see the school as a center for optimal career development. The starting point, for achieving a recognized qualification, are the interests and capacities of the students. Students develop their own unique set of abilities via a flexible program, with individual, customized training as the terminus. Construction – as opposed to instruction - is the primary form of learning. On the upper-left and lower-right corners of the figure, we see intermediate forms of education. New didactical practices, such as problem-driven education, are to the upper-left. At this moment, new practices are almost always placed within traditional, standardised programs. The lower-right hand corner refers to the modular organization of existing educational programs. This *à la carte* education is similar to custom-made education, but is not innovative in the didactical sense.

3. Bottom-up innovation

The transition from an industrial diploma factory to a career center is something schools will have to navigate on their own. Since the end of the 1980's, the educational policy of the government – in reaction to the visible boundaries of the welfare state - has been characterized by deregulation and decentralization. As opposed to the industrial era, during which the national government (i.e., the Ministry of Education) almost completely determined daily affairs in the classroom, the government is presently granting the schools more autonomy. The main reason for this radical shift is – at least with respect to educational policy - the recognition of the fact that the educational innovations for a service/knowledge economy can not be developed from behind a drawing board, and subsequently implemented top-down. The “school as career center” can only be a result of inside-out innovation, if only for the reason that teachers and manager need to develop their own, new, professional identity (Geijsel & Meijers, 2005). A new identity cannot be dictated from above, but must be developed in a self-directed learning process. The central government limits itself to providing a framework-legislation directed toward quality requirements and enforcement. This process of deregulation and decentralization will, of course, take place over a number of years; there will naturally be a period of inconsistencies and confusion in the relationship between government and schools. In addition, the decennia of “industrial educational policy” have resulted in the disappearance of almost all innovational ability in the schools today. During the last few decades, innovation has rarely meant, for teachers, the development of new didactical practices, but rather, almost always meant the incorporation of new scientific knowledge in the teaching materials. School managers used to have primarily an administrative task, and not an innovational one. In short, schools have difficulties in making the transition from being an executor of government policy to that of a developer of their own policy. The result is that they tend to fall in the gap between the two roles. Schools experience the disadvantage of a larger distance to the government, without being fully able to harvest the fruits of their own, new-found autonomy (Engberts & Geurts, 1994). Geurts (2001) believes that inspirational school leadership can strike the correct balance between external demand and internal ambitions and competences. It is, however, a problem that this kind of leadership is often lacking and, instead of a professional leadership, one has to do with a bureaucratic leadership culture. Apparently, school managers are still mainly pre-occupied with implementing existing legislation and regulations. According to Van Emst (2002), there is a real

possibility that schools will even express a growing need for the creation of new rules and regulations. The wide-spread internal and external turbulence increases the craving of the school management for even more control. This results in a great deal of “paper” and red tape: detailed descriptions of tasks, privileges, responsibilities, rights, rules, regulations, and organograms, so that everyone knows what his/her place is. In practice, however, hardly anyone pays much attention to those arrangements. School management then has the tendency to enforce the rules even more rigorously. It is not uncommon that the desired control actually becomes stagnation. No one is interested then in investing energy in school innovation and renewal.

In governmental policy aimed at increasing school autonomy, “lump sum” financing plays a large role. A decreasing portion of resources are explicitly reserved for specific purposes. This means that schools have to develop their own policy making ability, in order to make good use of their increasing autonomy. In order to strengthen this ability, the government has decided to implement its innovation policies in the form of projects. For educational innovation that the government considers to be important, an amount of money is made available, which is administered by a (often specially created) non-governmental organization (NGO). This NGO then invites interested parties to submit proposals for innovative projects, which are then evaluated by independent experts, both policy makers and academics. The fundamental idea is that in this way, the most promising proposals (and thereby also the most innovative contexts) may be found and rewarded. After funds are granted for the innovation project that was submitted by the school, a cycle of research and evaluation begins, conducted under the supervision of the NGO involved. In this cycle, “good practices” place an important role, in addition to traditional evaluation research. The idea behind this is that an evaluation procedure can only be viewed as truly meaningful, when the assumptions - as well as the approach - of the evaluation procedure are intended to promote the continuous improvement of the knowledge development process within the school itself. The innovation projects are therefore considered based on the principles of the “learning organization”: the projects are viewed as “learning projects” that are inherently, continuously concerned with improving their own quality (Geurts & Pouwels, 2001). Learning organizations require from all parties involved that they are willing, during project implementation, to utilize the experience derived from quality assurance systems,

such as ISOP and EFQM.² It is well known that in such quality assurance systems, great importance is attached to a systematic approach to monitoring project progress and quality control, and that they also utilize the principles of self evaluation, such as internal auditing and self-direction and correction. From the viewpoint of the philosophy of self-evaluation, a (continuous) process of quality improvement must be seen as a mutual responsibility of all parties involved (the NGO, the school, and the external researcher/evaluator contracted by the NGO).

The evaluation of an innovation project has to be, in this perspective, a co-production of all parties involved, and be characterized by an open and communicative (and thereby a “learning”) policy style. This co-production can be realized by requiring schools to reflect on the project’s progress on the basis of a template developed by the involved NGO. In this manner, Axis, for example, a NGO that was founded in 1998 to stimulate students to enrol in technical and science studies, required schools to write so-called “good practices”, that were to be subsequently published on a website. Writing a “good practice” forces the project to go into “slow motion” and to clarify (mainly for themselves) (a) which ‘practical theory’ they adhere to, (b) what people have done (as inspired by this practical theory) in terms of product or process development, (c) whether these products or processes have achieved the results predicted by the practical theory, and (d) what can be learned in the project, from the results up to that moment (Geurts & Oosthoek, 2004). The “good practice” descriptions give the external researchers an opportunity to monitor the quality and progress of the projects in such a manner that the evaluation process also contributes to the development of knowledge. In other words, the evaluation is not based on abstract criteria from scientific discourse but rather on the “good practices” written by the school itself.

The reports from the Axis project evaluators (Geurts, 2004; Meijers, 2003; Onstenk, 2004; Van der Sanden, 2004) demonstrate that a “learning” evaluation style could not easily be realized. A number of different reasons were found in the various Axis projects. First of all, there exists an educational culture in which evaluation has never been connected with learning. The consequence is that many project leaders began their projects with enthusiastic verbal support of

² ISOP: International Standard Operating Procedures.
EFQM: European Foundation of Quality Management.

an active, learning evaluation, but were - de facto - rather hesitant about having someone “look over their shoulder”. In other words, people were hardly prepared to admit that mistakes may have been made, and subsequently reflect about those mistakes. A second reason involves a culture of innovation in which people are accustomed to initiating short-term projects that usually are not integrated in a long-term innovation, but are only initiated because external funding happens to be available. All too often, the fortuitous availability of funding determines the intentions and area of application of the innovations. Thirdly, most projects function in an environment with a poor history of reflection, something which is associated with the previous two points. People are not used to critical reflection of their own actions, and have therefore not developed a tradition of doing so. Due to this, it was very difficult to obtain hard evaluative data for any of the projects. The data were simply not available; all energy was expended in the development of new products and processes. However, during the course of monitoring and evaluation of these projects, due to the active cooperation between the researchers and the project leaders, trust between the two groups developed. It became increasingly clear during this process, that writing up good practices had a demonstrable positive added-value for the progress of these projects. Due to these developments, the willingness to invest in good practices increased, and in a number of cases, there has actually been much effort made in order to obtain hard data concerning the innovative products and processes that had been developed.

4. Between dream and deed

Overmaat, Leeman & De Bruijn (2006) recently published the results of eleven case studies concerning strong learning environments in vocational education. A strong learning environment is defined as an environment having (a) constructivist program characteristics (career identity is the basic principle of the program, the program is oriented towards authentic (i.e. functional) learning, and there is an integrated thematic and subject based approach), (b) students participate in cognitive processing activities (mainly construction and reflection), (c) teacher guidance activities (adaptive instruction, coaching, and the promotion of self-regulating skills), and (d) evaluation (functional testing of knowledge, insight, and skills, as well as assessment of broad competences in situated action). In table 2 we present the results of the analysis.

Table 2. Implementation of strong learning environments

10 Characteristics of strong learning environments in order of decreasing implementation

1=weak; 2=more weak than strong; 3=more strong than weak; 4=strong

N=11	mean	2.5 or more
Adaptive instruction	2.48	N=8
Professional identity as basic principle	2.32	N=6
Integrated thematic/ subject based education	2.30	N=3
Constructive learning	2.18	N=5
Functional tests	2.07	N=4
Promotion of self-regulating skills	2.05	N=4
Authentic/ functional learning	1.98	N=4
Assessment of broad competences	1.93	N=4
Coaching by exploratory learning	1.84	N=2
Reflective learning	1.81	N=1
Total score: strong learning environment	2.10	N=3

This table includes averages of the eleven investigated training programs for the 10 characteristics of a powerful learning environment, in decreasing order of implementation. In addition to the means, the number of programs having a score greater than or equal 2.5 (a neutral score) are also indicated. As can be seen, the characteristics “adaptive instruction” and “professional identity” were relatively strongly developed in a large number of programs. This is probably due to the fact that those characteristics are easily combined with traditional educational concepts, yet are not at odds with competence oriented education. More innovative characteristics, such as “authentic/functional learning” and “assessment of broad competences” are less prominently present. The level of the programs’ authenticity remains limited and seems to be dependant upon fortuitous events, such as the interest of the instructor. Relatively few programs demonstrate systematic reflection by the students upon their own results and learning processes, and a coaching style by the instructors.

Other research confirms this picture that schools are till now mainly investing in structural change, as opposed to cultural change (see e.g., Meijers 2003b; Severiens & Joukes, 2001; Boer, Mittendorff & Sjenitzer 2004). Specifically, there has been little change in the manner in which people communicate within a school (i.e., between students and teachers, between teachers themselves, and between teachers and management) as well as between the school and its environment. Within the school, there primarily remains a situation in which students may contribute little or nothing to the content, the progress, or the evaluation of their learning process. “Construction”, in other words, remains a foreign concept. The relation between school and their environment (and especially regional businesses) remains characterized by a divided, rather than a shared, responsibility (Meijers, 2004).

Even though the principles of competence oriented education (i.e., involving an authentic learning environment and self-directed learning) have achieved broad support during recent years, the implementation of those principles seems to be more difficult. That has resulted in extensive criticism of “new learning” in the Dutch media in 2005. The criticism has focused on two arguments: the ideological character of the proposed educational renewal, and the idea that “new learning” would threaten the quality of education, because self-directed learning would demand too little of students. Both criticisms are not without their faults (Volman, 2006). The main point made is that the opponents of “new learning” ignore the problems presently confronting vocational education, namely, too little motivation, high drop-out rates, and the limited transfer of theory to actual practice. The criticism is perhaps better understood as an attempt of the middle class to retain the selective function of education, in which their offspring optimally profit in terms of status, income, and power (Bernstein, 1975). Geurts (2005) argues, therefore, for filling up the present pedagogical vacuum surrounding the future of vocational education. If one wants the relevant parties to become interested in innovation there will have to be more discussion and debate about pedagogical principles, about the rich societal responsibility that vocational education has, and about how the parties involved can together ensure that real improvements can be made. This debate about the essence of this societal responsibility, and how it may be best achieved, is presently hardly taking place at all.

5. The future

The vitality and the achievements of schools will, in the future, increasingly depend on the extent to which school management is able to develop and utilize the skills and ambitions of their staff, such that the wishes and needs of their students as well as of regional businesses (the demand side) are satisfied. Until now, all parties have assumed – probably as an automatic reaction to the fact that vocational education has historically been supply oriented - that achieving a more demand driven education required that schools would retain a passive role. In recent years, therefore, there have been many discussions – in and outside educational circles - concerning how students and social partners could take an active role. More recently, there has been a swell of opinion arguing that school should take a more pro-active stance (WRR, 2004; Van den Brinke et al., 2005). The proponents of this pro-active stance argue that allowing the content of education to be solely determined by the needs and wishes of students and regional employers, would only lead to a qualitatively emaciated supply. First of all, most students and many employers are not able to articulate their intermediate-term wishes and needs. Secondly, some of the interests of employers and students may not coincide. And, thirdly, neither students nor regional employers are homogeneous with respect to their needs and wishes. The wishes and needs of students and social partners can therefore only partially determine what a good educational “supply” would be. For a good balance between supply and demand, the professionalism of the school itself has to be given a more central role. The school should not only react to external wishes and needs, but also take a more pro-active attitude in the development of qualitatively good vocational education. This conclusion, according to Van der Zee (1997), places the reflective competence of the school management and staff at center stage.

Whether schools for vocational education ever succeed in becoming career centers, will primarily depend on the degree to which school managers and staff get the opportunity to develop a new professional identity, based on reflective competence. In the Netherlands, there exists no stimulating innovational structure or culture with respect to the renewal of vocational education. The main reason for this is that the withdrawal of the central government does not - in itself - create room for educational innovation. The opposite seems to be more likely the case. Whereas before power used to be clearly concentrated at the Ministry of Education, those wanting to rejuvenate education are now confronted with various, rapidly changing power cliques, inside as

well as outside their school (Geurts, 2004). Inside the schools, those desiring innovation are mainly in the minority and they are confronted with a school management that displays little educational leadership. The project-based innovation policy of the government in such a situation often results in “educational isolation”. Meijers & Reuling (1999) and Meijers (2001) demonstrated that innovation-oriented teachers were merely tolerated to implement innovative mentoring projects, because they were subsidized by the Ministry of Education. The school management was, in those cases, not inspired by a clear vision of the future of education. That, however, was also not necessary, because such a vision was not required in order to be eligible for project funding, and because the project subsidies were in addition to regular funding, such that the school was not required to make substantive choices. The consequence was that the innovations implemented by the projects slowly dried up after termination of the funding, because – in addition to the absence of a clear educational vision - there was hardly any attention devoted to letting those achievements “sink in” to the rest of the regular educational organization. Geurts, Corstjens & Van Oosterom (2006) demonstrate that - in technical vocational education - some lessons have been drawn from these experiences. In the context of the renewal of higher technical vocational education , an innovational program has been developed in which a direct connection is made between innovational activities and school policy. Innovation is seen as an institutional choice and the program supports this when it contributes to goals determined at the national level. In this case, that would be an increase of the number of engineers.

Those interested in educational innovation also are confronted with a battle ground outside the school walls, on which the various interest groups articulate their wishes, without having to relate them to the wishes and desires of the other interest groups. Because the central government has (partially) withdrawn from this arena, these interest groups have increased their relative influence, such that their interests can not be easily ignored. In addition, school managers have never really learned to manifest themselves as a pressure group, and to negotiate with interested parties on that basis. One of the consequences is that the school management (and the individual teacher) is confronted with contradictory imperatives. In such a situation, it is understandable that schools generally assume a passive role.

In order to resolve this stalemate, two conditions need to be met: 1) more active support from the central government for the needed structural renewal of vocational education and 2) the replacement of the incidental project-based policy by the establishment of a structural innovation funds. Government support should not take the form of (compulsory) rules and regulations, but rather the (temporary) suspension of rules and regulations, so that more opportunity is created for schools to attempt real experimentation. Schools must have the opportunity to generate creative solutions for the most important problems that vocational education is presently facing. The government must – in turn - exercise some patience, and not immediately strive for immediate standardization. The structural innovation funds, initially championed by Geurts & Van Oosterom (2000), must not only be financially supported by the government, but also by employer organizations and unions. The purpose of this public-private cooperation is to force all interested parties to reach a common agenda, with respect to the educational innovations deemed necessary, and to subsequently invest in the choices made. The funds must be constructed in such a way that a virtuous cycle of knowledge development can be reinforced. Investments are not only needed for the development and implementation of educational innovations, but also for their evaluation , such that all parties can contribute to improved designs in following phases of innovation.

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