

COMMENTARY

Vocational training: innovative and creative

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Dear Readers

The European Council conclusions of May 2009 on a strategic framework for European cooperation in education and training ("ET 2020") formulate four primary strategic goals for educational policy. One of these is "enhancing innovation and creativity, including entrepreneurship, at all levels of education and training". To this end, the aim is to foster transversal key competences within the educational system. A further focus is on ensuring smooth operation of the knowledge triangle of "education, research and innovation".

There is nothing fundamentally new about this objective. Extensive debate on the boosting of core skills, on action and process orientation and on holistic work related tasks has been ongoing for decades and has also included discussion of a wide range of measures aimed at fulfilling such an aim. In vocational training, innovations are generally realised on an ongoing basis and in many small stages, or incrementally to use the innovation research jargon. The dual system especially is in a constant state of flux and is continually adapting to the changed requirements of the world of work. The Vocational Training Act provides a flexible framework for this purpose, although the structural leeway offered by this law has by no means been fully exploited.

Innovations must deliver a benefit

Innovations describe something new. This may be a new product, a new service or a new solution to a problem. Innovations do not, however, always have to mean something which is completely new. Innovations can also involve the application of a solution familiar in principle within a new context. Vocational training lives from the exchange of experiences within specialised, regional and even European networks. The main prerequisites for successful transfer are openness, listening and enquiry, or a reflective approach to dealing with the

matters at hand. In other words, the key issues are comprehension, understanding and creative further development, all of which ultimately result in productive learning. Innovations only fulfil requirements if they are effective, meaning they need to deliver a benefit. Claims are often made that innovations have exerted an effect. These claims are, however, seldom validly backed up by research. The reasons for this doubtlessly have something to do with the complexity of the field and the difficulty in ascribing effects to certain causes. Conceptual deficits, such as unclear target definitions or a lack of quality criteria are, however, also indicated. It is therefore right to structure vocational education policy measures and programmes in such a way so as to render processes and results transferable. This also includes the provision of appropriate funding and the planning of transfer activities. It further means that assessment of the individual projects needs to extend beyond evaluation research and take place on a holistic basis.

The benefit of innovations should be sustainable. Although the label “innovative” is attached to many projects, the question sometimes arises as to what remains of this innovation after the passage of a certain amount of time. Something which works when special funding conditions are in place may sometimes flounder or fail under normal operational circumstances. Investigation of the sustainability of the results emerging from individual initiatives, programmes or pilot projects and critical reflection on the conditions of transfer would be a praiseworthy objective. The prerequisite for such an approach would be an honest inventory of the situation.

Creativity: not something limited to the academic professions

Creativity and innovation flourish best in areas where there is scope for discretionary action and where everything has not been regulated and set in stone in advance. This applies equally to the system level, for example to the way in which the VET system is structured, to the operational level and to the behaviour of individuals. Many innovations are generated by people engaged in work. These people develop patents, make proposals for improvements and participate in the further development of processes within the scope of organisational development.

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In qualifications frameworks, creativity and innovation are mainly established at the upper reference levels in areas where a higher education qualification is required. The skill of developing new solutions and of evaluating such solutions whilst according due

consideration to frequently changing requirements is, for example, aligned to level six. The competence to develop and apply new ideas and procedures and to take account of a range of evaluation measures in appraising these new ideas and procedures is characteristic of reference level seven, or Masters level. The typical characteristic of the “German production model” is cooperation and communication between those responsible for development and those whose remit is application and implementation. Skilled workers, technicians and master craftsmen are the specialists in process knowledge and in the implementation of innovations in practice. It makes sense to integrate such workers into development teams which plan and realise new products or processes. Many companies practise such an approach, with success. Employees with a vocational qualification understand how processes need to be structured. They recognise problems and are able to use their know-how to assist in the development of new solutions to problems.

Establishment of potential areas for innovation

The creation of important prerequisites for innovation processes in vocational education and training is both a possibility and a necessity. It is no coincidence that one of the foundations for this is a combination of broadly profiled basic skills and a vocational specialisation. Preparation for specific vocational employment requirements also always involves preparing for and helping to shape change. Innovations regularly accrue at the borders between disciplines, between specialist areas and occupations. The perception of holistic tasks also leads in many areas to the assignation of planning and calculation tasks to employees in technical occupations. This requires them to carry out quality assurance measures and also often means that they need to conduct discussions with customers. By the same token, employees working in commercial functions often require a fundamental understanding of technical processes. Account has been taken of this in the updated training occupations by expanding the skills profile. In addition to this, various hybrid occupations have also been created. These are occupations which unite various, generally technical, specialist areas. The best known example of such a hybrid occupation is that of mechatronics fitter. Although some achievements have been made, the task of integrating interdisciplinary topics into training remains on the agenda.

Thereafter, things depend on the methods via which training is imparted. Self-directed learning, learning in projects and learning via real customer orders are all appropriate ways of unfurling areas of creative potential. This is not an area where vocational education and training has anything to be ashamed of. Much has been instigated in the past, both within

and outside pilot projects, and been successfully integrated into training practice. Training is often further advanced than the world of work.

Knowledge generation instead of knowledge transfer

Rather than ever being limited to abstract theoretical or methodological knowledge, innovation competence is primarily documented in the ability to generate new knowledge within the problem-solving process, to apply existing knowledge to the solution of new problems and to interlink the knowledge of different persons and organisations. Experiences gained from innovation processes provide regular evidence that the knowledge required for specific problem-solving tasks does not exist in a formalised manner or else is only partially available in such a form. For this reason, knowledge cannot simply be accessed from books or databases and then transferred. The required competences need to be acquired during the actual addressing of the problem. The acquisition of competence therefore mainly takes place within the application process, or within the work processes themselves. Such competence is hardly likely to be obtained in didactically structured seminars separated from real problem situations. This means that any educational and human resources planning aligned towards current requirements is virtually bound to result in a mismatch. Educational measures are not capable of deployment if competence deficits are already apparent. For this reason, learning opportunities need to be integrated into the work processes. Communication, cooperation, flexibility of action and reflection are all indispensable in order for this to happen.