Empowering teachers to focus on the learner: The role of learning outcomes in curricula

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1. Introduction

Recent research findings show how a shift from knowledge overloaded curricula to outcome-oriented approaches - bridging knowledge with those skills and competence learners should acquire at the end of a learning process - is currently emphasised in the curriculum policy agendas of many European countries (Psifidou, 2010). The motivations behind these curriculum reforms emphasising learning outcomes are diverse from country to country arising from different understandings, learning theories and educational traditions (Cedefop, 2010a).

Despite this diversity of approaches across the countries and between different subsystems of education and training, outcome-oriented curricula may have some common distinctive features:

- they give focus on integrative learning combining functional and cognitive knowledge as well as socio-cultural skills and competences (Winterton and all, 2006);
- they are orientated towards the labour market and employment requirements, whereas traditional curricula would stick to the educational context and a body of knowledge to be transmitted (Sloane and Dilger, 2005);
- they move away from rigid disciplinary and decontextualised content and go towards multiplicity of contextualized, inter-disciplinary and significant resources for the learner (Moreno, 2006);
- they encourage learning in a wide range of locations and by different methods (Cedefop, 2009a).

These characteristics show how designing outcome-oriented curricula (e.g. defining key competences, learning outcomes, etc.) has implications in the way the content is taught, the teaching methods are applied, the material is used and the teachers' training is arranged. Therefore, the new structure and organisation of curricula lead to considerable debates about teaching practices and learning arrangements.

Research shows that while outcome-oriented approaches in curriculum development may be a powerful means for making VET systems more learner-centred and more inclusive in the sense that they respect and address learners' diverse needs (Cedefop, 2010a), their benefits depend on many factors, among which on the way teachers and trainers interpret and deliver them. So while an outcome-based curriculum is potentially a more learner-friendly curriculum allowing learners to know the expected learning outcomes they should acquire at the end of their learning process and giving them the opportunity to build their individual learning paths; it is also more challenging for teachers in terms of designing appropriate learning programmes and applying innovative pedagogies and assessment procedures (Cedefop, 2010b).

The implications of outcome-oriented curriculum reforms to teaching and learning processes are discussed in the present paper drawing from the cases of six European countries and providing evidence on the way new curricula of logistics are being delivered in Germany and in the Netherlands.

2. Research questions and tools

The ultimate goal of the present paper is to examine the relationship between outcome-oriented curricula and learner-centre approaches to teaching and learning - defined in contrast to "teacher-dominated" or "traditional" approaches.

Two main questions are addressed:

- Up to what extend outcome-oriented curricula in VET create a favourable framework for teachers and trainers to apply learner-centred teaching approaches and innovative pedagogies?
- Up to what extent the way in which actually outcome-oriented curricula are being delivered in different learning environments within VET promote or hinder learner-centeredness?

Both primary (interviews and surveys) as well as secondary research (literature review) were carried out to provide empirical materials for a comparative analysis of curricula and accompanying documents from official sources (Ministries and support agencies) in six countries: France, UK-Scotland, Ireland, Spain, Germany and the Netherlands. The choice of countries was based on geographical and geopolitical criteria; the characteristics of educational systems (e.g. decentralised vs. centralised system); and the degree of experience/tradition in using learning outcomes.

The analysis focuses on initial VET, especially on the training paths taken by most students and curricula from the vocational programme in the field of logistics² were selected to be analysed.

In order to illustrate the findings with empirical material on learning practices, two study visits including qualitative semi-structured interviews of logistics teachers and a quantitative survey among their students were organised in two vocational schools in Germany and in the Netherlands (see session 4). Both have introduced the competence-based approach in VET curricula back in 80s and 90s respectively. Their long tradition with outcome-oriented approaches is an important criterion for selecting these countries given curriculum reforms need time to unveil their effects in teaching and learning processes.

While these two field studies can not be considered to provide representative data on teaching and learning practices in the countries concerned, they may however help to raise new issues and questions for further studies on the relationship between formal arrangements in written curricula and actual practices in classroom.

Findings presented in this paper draw from the latest Cedefop publication on "Learning outcomes approaches in VET curricula: a comparative analysis of nine European countries" (Cedefop, 2010a). It is part of an extensive comparative research work that Cedefop is conducting over the last three years exploring the role of learning outcomes approaches in vocational education and training provision to design and describe qualifications and learning programmes, to set standards and to orient quality assurance and certification approaches.

² Logistics is a growing sector in Europe, with Logistics jobs (excluding transport and support jobs) representing approximately 2-2.5 % of overall employment.

3. Implications of curriculum reforms on teaching methods

The use of learning outcomes in curricula, although it is generally a means for granting more autonomy and responsibility to training providers and teachers regarding the training delivery, does not lead necessarily to less attention being paid to teaching and learning processes. On the contrary, debates about the implications of learning outcomes and competence-based approaches on teaching and learning processes seems to foster a renewed interest in pedagogy and didactic. As a result, recent curriculum reforms in the studied countries have been addressing these issues through different approaches both in written curricula and in teaching practice.

3.1. Teaching approaches in written curricula

Among the six studied countries, France, UK-Scotland (Curriculum for excellence) and Ireland (prevocational education) offer most examples of curriculum provisions concerning teaching methods and learning arrangements. In the other countries, curricula do not specify in detail teaching methods and learning arrangements, but support materials developed for teachers and trainers provide evidence about changing approaches to teaching.

In *France*, the creation of the Baccalauréat professionnel in 1985 introduced compulsory periods of work-based learning in the initial VET curriculum for specific occupations, which were progressively extended to all initial VET curricula during the 1990s. In vocational school curricula (upper secondary level), periods of training in enterprises became compulsory for a total of between five and 18 weeks in two years. This alternation between work-place and school-based learning is seen as an important means for developing competences.

Later, the introduction of learning outcomes in initial VET curricula had also the aim to reform teaching practices, especially for strengthening the link between school and work practices, and making teaching more learner-centred. A reform launched in 2000 promoted project-based learning through the introduction of the PPCP (*projet pluridisciplinaire à caractère professionnel*) in initial VET curricula at upper-secondary level. The objective of the PPCP - a multidisciplinary project with a professional character - is to provide a framework for the development of competences in a situation as close as possible to 'real work life'. Between 100 and 200 hours can be dedicated to the PPCP depending on the study programme. Teachers from various disciplines are called to organise the PPCP together and in partnership with external actors (e.g. companies).

Beyond these learning arrangements, the curriculum in France does not contain other specifications concerning the choice of pedagogic methods. However, accompanying materials and publications from the inspectorate encourage the use of active learning methods and individualized approaches.

In *UK-Scotland*, the Curriculum for excellence sets a series of principles which should guide teachers and trainers while implementing the curriculum. These main principles address³:

- Cooperative learning;
- Active learning;
- Student-centred approaches; and
- Recognition of achievement rather than narrow attainment.

Support materials for teachers and trainers made available by the governmental agency learning and teaching Scotland, and especially a new website with an intranet accessible to all schools in the country⁴, reflect these principles. In a section 'learning about learning', teachers are invited to reflect on theories about learning and their implications for teaching practices. Guidebooks present ideas and examples on how to implement new approaches and learning arrangements.

In *Ireland*, the introduction in 1995 of the Leaving certificates applied programme was marked by the efforts to develop a learner-centred curriculum reform. The curriculum, which is modularised and based on learning outcomes, was influenced by new approaches to learning. The courses and modules followed offer a broad, balanced curriculum leading to personal and social development and vocational orientation of participants. Perhaps the most distinguishing feature of the Leaving certificate applied is its emphasis on participants learning by doing, applying knowledge and skills to undertaking tasks and solving problems in an integrated way in the real world. In doing so, there are significant levels of interaction with the local community, particularly employers' (Gleeson, 2003, p.102). In the 'Programme statement' for the Leaving certificate applied, the following principles are defined concerning teaching methods (NCCA, 2001):

- the use of teaching styles which actively involve the participants in locating and using relevant information, and which promote personal responsibility, initiative, independence, reflection, self-evaluation, self-confidence and cooperation;
- a variety of teaching and learning processes including group work, project work and the use of individualised learning assignments;
- the promotion of communication, literacy, numeracy and other generic skills across the curriculum using a range of media;
- the promotion of equity in all its aspects including gender equity;
- the development of teachers' skills in evaluating their own performance;
- the identification and use of teaching and learning resources in the local community and interaction with employers and enterprises;
- a teaching approach designed to address and meet the needs of the participants.

In Spain, Germany and the Netherlands, VET curricula do not provide concrete guiding pedagogic principles for specific vocational training but teachers are free to choose their own methods.

In *Spain*, the Real Decreto 1538/2006 just points out that teaching methods should integrate relevant scientific, technological and organisational aspects in order to provide students with a global overview of the productive processes of the requested professional activity (Real Decreto 1538/2006). Nevertheless, changes in teaching

³ interview with national expert on 30.04.2009

⁴ <u>http://www.ltscotland.org.uk/glowscotland/index.asp</u> [cited 28.04.2010]

methods implied by curriculum reforms are widely acknowledged. Martínez Usarralde (2007, p. 730) states for instance that the last curricular reforms which are based on the principles of 'comprehensiveness' and 'diversity' require '[...] a change in the teaching methods. The reform of the methodology introduces a change in the psychological approach to the curriculum (from an evolutionary approach focused on teaching to a constructivist approach more focused on learning). Furthermore, the provision of a greater amount of material and human resources facilitates attention to diversity and individualized teaching.

Thus, even if Spanish teachers are free to choose their teaching methods modern and creative teaching methods seem to be widely promoted. Besides information and manuals on the development of school curricula, the educational administrations of the Autonomous Communities publish guides on teaching methods to give assistance to the teachers and to foster new teaching practices. The Basque institute of qualifications and professional education has for instance published guidelines on the development of the school curriculum which also provide the teachers with information on teaching methods and on how to apply them. New teaching methods are especially recommended, such as project learning, problem solving, group work methods (for instance the *jigsaw* classroom⁵), student team learning, reciprocal teaching and cooperative learning (KEI-IVAC, 2008).

In the *Netherlands*, the adult and vocational education act (WEB) does not include any specifications regarding teaching methods. It is up to the training providers themselves to organise courses and teaching in such a way that students are able to obtain a diploma. There are many examples of modern, attractive programmes that link teaching closer to professional practice, for example by so-called workstation structures and by using modern equipment. Teaching subjects is restructured to be more focused on competences. According to evidence (Onstenk, 2008; Sanden, 2004), self-directed, participatory and project-based learning are supposed to dominate in vocational schools, whereas the transmission of a body of subject-based knowledge is no longer the primary concern. The focus lies on the way in which learners construct situated knowledge and learn to learn by doing so.

In *Germany*, curricula do not impose the use of particular methods, but didactical principles and the action-oriented approach based on the concept of 'vocational competence' are described in curriculum documents for vocational schools. The necessity to adapt learning programmes to the individual needs of the learners is explicitly stated. Curriculum documents stress the main implication of the competence-based approach on the link that must be established between the learning content and the professional situation. The learning process must "focus on action-oriented competence and enable young people to autonomously plan, execute and assess professional tasks in the framework of their professional activity. Learning in vocational schools happens in relation with concrete professional acts as well as in numerous cognitive operations, including understanding other's actions and behaviour. This learning is especially based on reflecting upon professional activities (the plan, the implementation and the results). It provides the basis for learning at

⁵ The jigsaw classroom is a cooperative learning technique with a three-decade track record of successfully reducing racial conflict and increasing positive educational outcomes. http://www.jigsaw.org/overview.htm

work and from work³⁶. The curriculum further defines the principles for planning learning processes:

- The didactical reference are situations which are relevant for professional activities (learning for action);
- The starting point for learning are activities which are executed by the learner or on which the learner reflects (learning through action);
- As far as possible, the learner should plan, execute, check, correct and assess the activities autonomously;
- Activities should address multiple aspects of real work processes, for instance technical, safety-related, economic, legal, environmental and social aspects;
- Activities must integrate experiences of the learner and be reflected regarding their impact on society;
- Activities should also address social processes such as clarifying interests and conflict management.

Besides these basic principles defining the competence-based approach in German VET curricula, self-directed learning is also encouraged. E-learning is for instance leading to increasing flexibility regarding the place of learning and is explicitly mentioned as an important element of the national strategy for lifelong learning.

In the work-based part of the dual system in Germany, the action theory conception of autonomous and cooperative working calls for integrated learning, which has implications for the training activities and the role of the trainer. The trainer is no longer primarily the superior and demonstrator but becomes an adviser and moderator. New training materials and media are deployed between trainees and trainer offering opportunities for independent learning and at the same time tutorial assistance in working through complex tasks.

The examination of written curricula in six European countries allows us to conclude that changes concerning teaching and learning methods in relation with competence-based approaches to curricula aim at the following two aspects:

- combination of theoretical and practical learning, for instance in schools and at the work-place, as well as combination between theoretical knowledge and practical skills;
- greater involvement of learners in the learning process, implying growing importance of independent and self-regulated learning in school and work.

The theoretical background for these changes are associated with the increasing popularity of constructivist teaching and learning forms in the last years (Dubs, 1998) supported by the learning outcomes approach (Cedefop, 2010a). In this context, self-directed learning and complex learning situations are key concepts, with implications for teachers and trainers whose role is to prepare learning arrangements meeting the learner's needs and become advisors in the learning process.

However these findings are based on the analysis of written curricula and official supportive material; the question is how curricula are interpreted and used by teachers and training providers to teach students and meet their needs?

⁶ Excerpt from the introduction to the school-based curriculum in Logistics (Rahmenlehrplan Fachkraft für Lagerlogistik, 2004). A similar introduction is to be found in all curricula for the dual system in VET since the reforms introduced in 1996.

3.2. Teaching approaches in taught curricula

To be able to examine how outcome-oriented curricula are being delivered in different learning environments requires a systematic *in-situ* research which falls beyond the scope of the present study. However, by analysing empirical studies on teaching methods conducted on the countries concerned and building on the findings of the study visits in Germany and in the Netherlands (see point 4), we may identify whether convergences and divergences exist between teaching methods recommended in the written curricula and these applied in practice.

Sociological researches in *France*, have observed different teaching practices in vocational schools illustrating this shift of paradigm described by Dubs (Jellab, 2005) to more individualised learning, small group works, attention paid to the needs of the individual learner – including social and psychological aspects and active involvement of learners in class, for instance through a collective, problem-based approach.

However, different empirical researches identified weaknesses of these approaches at the time of implementation. An empirical study for instance conducted on the basis of interviews with 141 teachers in vocational schools all over France by Courtas and Castellan (2006) on the pedagogical practices linked with internships and work-based training produced the following results:

- 27 % of teachers claimed that internships are not the object of collective pedagogical reflection.
- The majority of the respondents stated that cooperation between teachers from different disciplines is limited to the organisational aspects of training, without real reflection on the objectives and challenges. Accordingly, the activities conducted in school concern mainly the debriefing after the training period and the writing of an internship report. On the contrary, activities like individual accompaniment of the learner and reflection on experiences and knowledge gained on the work place are rarely conducted.

In brief, the authors identify two kinds of practices. The first one is focused on teachers: experiences made during the training period are used as a starting point for school-based teaching. The second one, which is far less common, is focused on the learner and the development of his/her competences.

Furthermore, an evaluation report on the implementation of the PPCP (*projet pluridisciplinaire à caractère professionnel*) in initial VET curricula at uppersecondary level conducted by the Inspectorate reveals that the type of projects and the selection of learning outcomes addressed by the project are highly dependent on the initiative of individual teachers and the leadership qualities of headmasters (Aublin et al., 2001). Although this instrument was conceived to introduce the 'industrial logic' in teaching, some analysts point out existing contradictions when it comes to implementation. The industrial logic, which is based on the work process, is in practice often replaced by a 'pedagogical logic'. The latter is based on the principle of projects with regard to which competences and associated knowledge will be covered, without regard for the question whether such projects are 'realistic' in a professional context (Eckert and Veneau, 2000). These findings unveil the effects of interpretation processes on teaching practices. Empirical research conducted in France by Lantheaume et al. (2008) shows that in the process of 'translation' of curriculum instructions into practice, actors tend for instance to refer to past reforms, to their own personal experiences, or to the advice of colleagues to understand curriculum changes; while the curriculum documents, official information and guidance were found to influence only marginally this process of interpretation.

In *UK-Scotland*, research and evaluation reports highlight the diversity of teaching practices⁷ arising from the large degree of autonomy teachers and trainers have when it comes to teaching methods (Gray 2008, p. 21). In practice, according to a summary of reviews carried out by His Majesty's Inspectorate of Education in 2004-06 in further education colleges regarding 'learning and teaching processes' inspectors mention that the staff 'identified appropriate learning goals for learners and planned activities to ensure they were able to achieve their learning objectives' (HMIE, 2007, p.5).

In *Ireland*, empirical studies among students presently or formerly enrolled in Leaving certificate applied programmes revealed some difficulties to convey the cross-curricular approach to students: "obviously, the vast majority continued to think in terms of subjects". However, surveys also showed a perceived difference concerning learning in comparison to standard school experience. Respondents stressed especially such element as team work, more self-directed learning, different relationship to teachers, work-based learning leading to the development of new competences such as computer skills and job-searching skills (Granville, 2008, p.189).

In *Spain*, the National prizes for educational research and innovation has rewarded the work of many teachers with regard to modernising pedagogy. Prizes for educational innovation are attributed for innovative practices improving educational work in relation with the development of basic competences, intercultural education, new information and communication technologies, equal opportunities for men and women and value-oriented education (e.g. road safety education, health education and promotion, environmental education, living together and peace education) (SPEE-INEM, 2008).

These findings show how the paradigmatic change 'from teacher-centred to learnercentred approaches' is indeed taking place. But this shift happens quite slowly, respectively only in some or few courses, and with significant differences between the countries examined (Cedefop, 2010a). To get a better insight, the cases of Germany and the Netherlands are analysed in detail in the following session.

⁷ The report by HM Inspectors for the Scottish Funding Council on Engineering in Scotland's colleges (October 2007). Available online: <u>http://www.hmie.gov.uk/documents/publication/eisc.html</u> [cited 09.10.2009]

4. Delivering outcome-oriented logistics curricula in Germany and the Netherlands

In Germany, the study visit was conducted in the consortium of vocational schools *Berufsbildende Schulen Oschersleben – Europaschule*, which counts 534 students in the field of Logistics. 58 students enrolled in an apprenticeship programme in logistics answered the questionnaire, and 12 logistics teachers were interviewed. In addition, a teacher interview was also conducted with two Logistics teacher from the vocational school *Staatliche Gewerbeschule Werft und Hafen* in Hamburg, where 250 students are enrolled in the programme *Fachkraft für Lagerlogistik*.

In the Netherlands, the study visit took place in the ROC (*Regionaal Opleidingen-Centrum*) Rijn Ijssel in Arnhem. The ROC Rijn Ijssel works in a consortium with four other ROCs. Together, these ROCS design and implement apprenticeship programmes accounting for 80 % of all students graduating as *Logistiek teamleider* in the Netherlands. 50 students are presently enrolled in Rijn Ijssel in this programme, 29 took part in the survey.

The study visits conducted in these vocational schools do not provide representative data on teaching practices in those two countries, however, findings illustrate whether the emphasis is given on active learning methods and a more learner-centred approach, while raising the question of what other factors, besides the curriculum, influence teaching practices in VET.

All findings present here are elaborated on the basis of Cedefop's recent publication: *"Learning outcomes approaches in VET curricula. A comparative analysis of nine European countries"* (Cedefop, 2010a).

4.1. Students' views on teaching methods

We have asked German and Dutch students from the logistics programmes to state their involvement during the planning of the learning programme and during its delivery. We have also asked to indicate the most common used teaching methods and their preferences.

From the survey, it was found that teachers have a leading role in the planning of the learning programme. This became visible in the students' answer to the question whether they are involved in deciding about what will be done in class: 100 % of the German respondents and 82.8 % of the Dutch said that it is 'always' or 'often' the teacher who takes the decision (see figure 1). The Dutch students are, however, more often involved than the Germans: 65.5 % said that they 'seldom' decide what will be done in class, whereas most German students stated that they 'never' take this decision (see figure 2).

Figure 1: How often does the teacher decide what will be done during the session?



Source: Cedefop, 2010a.

Figure 2: How often do the students decide what will be done during the session?



Source: Cedefop, 2010a.

Generally, the students interviewed in both countries consider themselves to be wellinformed of the content and expected learning outcomes of the training ordinance or curriculum (see figure 3). In Germany, nearly 70 % of the students reported that their teachers explain the learning objectives of each training session 'always' or 'often', compared to 37.9 % of the Dutch respondents (figure 4).

Figure 3: Do you know the contents and the learning objectives written in the training ordinance and in the curriculum program?



Source: Cedefop. 2010a.

Figure 4: How often does the teacher explain the content and objectives of a session?



Source: Cedefop, 2010a.

A common approach between the German and the Dutch vocational school is the persistence of teaching styles typical for teacher-centred approaches. The students in both countries report that they often have only to sit and listen while the teacher talks (in Germany, 75.4 %, the Netherlands 55.2 %) (see figure 5).

Another similarity is to be found regarding the low use of computers in coursework. Only the 21.1 % and 24.1 % German and Dutch students respectively indicated that they are using a computer in many courses (or at least in some courses (Germany: 36.8 %, the Netherlands: 41.4 %).

Figure 5: How often do lectures in vocational courses look like 'we sit and listen, the teacher talks?'



Source: Cedefop, 2010a.

Despite the often use of lectures as a main teaching method, in both countries teachers use more active learning methods. In this regards, important differences were found between the two countries. Group work is far more popular in the Dutch school than the German one. Only 5.8 % German students indicated that they often work in groups (26.9 % say it never happens), compared to 41.1 % of the Dutch students. Activating and learner-centred methods seem to be used more in the Dutch classes where project work seems to be carried out on a regular basis. Dutch pupils mainly have projects in some (31.0 %) or many courses (20.7 %), while 37.0 % of German pupils say that projects are never used.

Similar discrepancies are observed concerning the use of group discussions as a teaching method. The students were asked how often group discussions are carried out with the teacher playing only the role of a moderator or advisor. This is reported to be more frequent in the Netherlands than in Germany (see figure 6). The same tendency appears concerning the opportunity for students to answer open questions, inviting them to formulate their own ideas and opinions: 75.8 % of the

Dutch students experience this kind of questions always or often, compared to 66.6% of the German students.





Source: Cedefop, 2010a.

Even more striking is the difference in the use of role-playing games. In the German class this method seems to be widely ignored (78.6 % never experienced such method) while in Dutch classes this method is used in some (34.5 %) or few courses (41.4 %) (see figure 7).





Source: Cedefop, 2010a.

Finally, the survey indicates that the link established by teachers between work-based and school-based learning is stronger in Germany; 57.2 % report that experiences from the workplace are always or often discussed in class, compared to 37.9 % in the Netherlands. In the latter, 27.6 % of the students say that this never happens, compared to 1.8 % in Germany (see figure 8).



Figure 8: How often are your experiences from work-place training discussed in class?

Source: Cedefop, 2010a.

When asked how helpful the different teaching methods were for their learning, the students rated lectures as the second most helpful (72.9 % find that with lectures they learn very well or rather well), after computer-based learning (76.6 %). Research assignments were third (63.6 %) followed by projects (52.5 %), case studies (51.9 %) and role-playing games (46.4 %). No direct correlation could be observed between these results and the question of how much the students enjoyed each of these methods: only 36.9 % of the respondents enjoy lectures, compared to 86.7 % who enjoy computer-based learning. Role-playing games, which are considered as the least effective learning method by the students, are nevertheless considered by half of them as an activity which they enjoy (compared to 36.5 % for the case studies and 38.7 % for the projects).

The student survey shows that active learning methods are used indeed in both countries, confirming the hypothesis of a shift from teacher-centred to learner-centred teaching, but changes are not as radical in the two countries. This is also confirmed by the teacher interviews: in Germany in particular they do not adapt learning programmes to individual needs to the same extent as their counterparts in the Netherlands.

4.2. Teachers' views on teaching methods

In both countries, teachers interviewed believe that a shift to active learning methods is taking place. In the German school, methods like group work, pair work, brainstorming and mind mapping are mentioned besides the traditional frontal instruction. The Dutch teacher estimates the proportion of active learning methods at about 80 %, among which are discussions, brainstorming, group work, project work, work assignments and excursions. According to the Dutch teacher, the aim is to design lessons as interactive, varied and modern as possible: 'In former times, instruction dominated, today we are discussing individual learning achievements. The group receives learning tasks, must elect a group leader, the work-style is very much interactive, with Internet and Digiboard. We try to keep the classroom as diverse and as timely as possible. Today's students learn differently and have such different expectations' (interview with Dutch teacher).

In both countries, the national curriculum (Rahmenlehrplan in Germany and *kwalificatiedossier* in the Netherlands) is an essential basis for devising learning programmes. Dutch teachers also refer to the results of the entry assessment of each learner as an essential element for planning the course. At the ROC Rijn Ijssel in the Netherlands, each learner undergoes a test identifying his or her competences when beginning a course. Theory and practices are no longer taught separately, but combined. The training starts with a 'nulmeting' (also called QuickScan), a test to determine the level of knowledge and competence of the trainee. The results of this nulmeting form the basis for a personal development plan (Persoonlijk Ontwikkelingsplan; POPs). This plan describes individual training objectives and the means to achieve them. The POP in turn forms the basis for the personal activity plan (Persoonlijk Activiteiten, PAP), which describes in detail the learning activities to achieve the training objective. Such a PAP may include different kinds of activities. such as work-based training periods or the implementation of practical project work (workplace learning becomes a 'learning station'). Thus, competences already acquired by the learners in past experiences are recognised and taken into account for further training. Certified professional experience can be recognized as equivalent to a training module. The certificate, a so-called bewijsstuk (document), is attached to a portfolio, accompanying the learners throughout their training and which is also used by teachers to plan the learning process.

The Dutch pupils are thus involved from the beginning in the planning of their training pathway. 'As teachers explained, "for the teaching practice, this means that we care as a lecturer for a group of trainees who are all busy with different things. The art of teaching is to get this all consolidated" (interview with Dutch teacher). The challenges implied by this learner-centred approach are further described by the teacher in relation to planning activities: "It is difficult to make a solid content planning for the group with training beginners for the whole year, because everything starts with the POPs and the PAPs. Also, today, when planning the contents, you have to combine many things together which were formerly taught separately. The time and effort per student has increased greatly" (interview with Dutch teacher). Nevertheless, in the view of the teachers interviewed, this emphasis on expected learning outcomes and competences acquired is a positive development.

These two different approaches, the individual approach in the Dutch school and the collective approach in the German school, are associated to different perceptions of

the teacher's role and the challenges he has to meet. Whereas German teachers consider the different starting levels of the pupils as a challenge which hinders the (collective) learning and teaching process, the Dutch teacher takes these different levels into consideration and plans individual learning pathways for each student. It is relevant that the interview partners quoted that they have to teach in classes with sizes of about 30 students and more. All consider such class sizes too big to guide and teach each learner in the best way.

Teachers' opinions also differ in the two countries concerning the overall influence of the new competence-based curricula on the learning process. The German teachers believe that the new curricula do not have a positive influence on learning processes. In their opinion, the structuring of curricula following learning areas reflecting work processes is not acknowledged by the students, who still have difficulties in relating theoretical knowledge taught at school and work practice. In addition, there are organisational problems in schedules and the division of work between teachers, as well as problems in progression between courses. All the interviewed teachers at the German school stated that they would prefer to go back to the 'old-fashioned curricula', based on subjects as they were before the last reform. According to them, feedback from the trainers in companies concerning the new school-based curriculum is negative, teaching in learning areas being felt to convey too little theoretical knowledge and understanding.

On the other side, one Dutch teacher indicated that the competence-based curriculum is more attractive to students and also more interesting for teachers due to their new role: "teachers don't only teach but also look at how a person can be developed and what he has to learn". The learner is no longer a passive listener; he has become a 'doer' in the learning process. Thus the freedom to design the learning process according to own preferences has grown on both sides, for the teacher and for the learner. The match between the individual learning needs and the curriculum is better than in the old system. And finally, we have both as a lecturer and as an apprentice much more freedom to design the teaching and learning according to own wishes" (interview with Dutch teacher).

These two contradictory opinions about the effects of outcome-oriented curricula on teaching and leaning process drawn from the study visits must be used carefully as they are far from being representative in terms of sample. Further, the pedagogic freedom granted to teachers and the level of decision-making of training providers allow for a certain degree of diversity even within one country.

5. Concluding remarks

The results of this study highlight issues requiring attention and actions from policymakers and VET practitioners. However, they also reveal the limits of our knowledge and understanding of current developments in VET and of the effects and implications of learning outcomes approaches in vocational education and training. Building on new EU and international studies of learning and teaching processes, there are still many issues in need of further research.

First, making VET systems more learner-centred implies the need to relate different variables of the system in a coherent way, for instance curricula, guidance systems, financing systems, teacher and trainer qualifications. Although the use of learning outcomes in curricula might contribute as one of several elements to this objective, as shown by this study, it might not be sufficient. One should question what does the learner-centred paradigm imply for the different parts of the VET system?

Second, little is known about learning and teaching processes in VET in class and in companies. International comparisons are lacking. Although active learning is promoted in curricula, the study visits and interviews seem to indicate that teaching practices are not changing as fast and radically as expected to match what is written.

Third, this study was limited to analysis of teaching methods applied in order to teach the intended learning outcomes prescribed in official curricula. The question of achieved learning outcomes in VET is still open. For general education, the PISA project has shown how different achievements are, opening debate and researche on the success factors. To date, a similar empirical basis is still lacking in VET.

So while holistic, broadly defined learning outcomes may have significant potential for making systems more learner-centred, there is obviously a need for accompanying measures at all levels of the VET system. Empowerment is the key word which seems to summarise the success factors identified in the country studies. It is by taking the teacher's and trainer's perspective, that the needs for policy measures can best be assessed:

- Need for involvement, consultation and information on curriculum reforms at an early stage;
- Need for information and training in initial teacher education as well as in continuing training and education; a high degree of professionalization is requested not only from teachers, but in apprenticeship systems also from trainers in companies;
- Need for material and financial support at school level, required to develop learning environments and teaching materials adapted to the expected learning outcomes and learner's needs;
- Need for support to school managers, including training in management skills and leadership, for them to cope with the new responsibilities granted to training providers in curriculum development matters, which often entail closer cooperation within the pedagogic team and with external partners;
- Need for guiding principles and inclusion of good practice examples in national curricula, to orient the definition of learning programmes at school or classroom level and ensure a basic of coherence across the country;

 Need to develop and share guiding materials and tools for teachers and trainers on formative assessment of learners.

Accountability and quality assurance are central to avoiding potential pitfalls in decentralisation and to ensuring a high level of quality of training provision. In a learner-centred system, it is necessary to rethink the indicators to evaluate teaching practices, as compliance with pre-determined rules becomes less important than innovative and flexible responses to the learner's individual needs. This also requires evaluating assessment practices to identify possible needs for better instruments and training of juries to assess learner' achievements.

At the micro-level, the case study on logistics curricula revealed that the teaching practices differ from country to country but increasingly emphasise guided, experiential and action learning. These forms of learning aim to help students and apprentices to develop integrated competences, i.e. to acquire a combination of vocational, generic and learning competences useful both for work and life. But no comparative study of learner achievements exists in that field to determine which approaches are most successful.

So while the findings of this study illustrate the progressive shift from teacher-centred to learner-centred approaches in the examined European countries, they also call for more research in curriculum implementation by revealing how practices and understandings might differ from case to case. Evidence shows that while aiming for more learner-centeredness in VET, the implications of this shift may not be that effective - or may even be negative - if teachers and trainers are not engaged in the design and implementation of curriculum reforms and if they are not empowered with the right skills and competences to cope with new curricula and needs (Psifidou, 2007).

Therefore, the training and professional development of teachers and trainers is the key to success of the kind of curriculum reforms now sought in Europe and an area that clearly requires increased political attention and strategic action; especially in the wake of competence-based approaches in education and training which challenge and change teachers' role from the more traditional one of instruction to the more complex one of facilitating learning for learners with diverse learning needs and styles.

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