Technological specialisation courses in Portugal: description and suggested improvements

Nilza Maria Vilhena Nunes da Costa
Full Professor (Professor Catedrático)
LAQE (Laboratory of Quality Assessment in Education) – Department of Didactics and Technological Education – University of Aveiro

Ana Raquel Simões
Post-doctoral Student
LAQE (Laboratory of Quality Assessment in Education) – Department of Didactics and Technological Education – University of Aveiro

Giselia Antunes Pereira
Doctor of Didactics
LAQE (Laboratory of Quality Assessment in Education) – Department of Didactics and Technological Education – University of Aveiro

Lúcia Pombo
Post-doctoral Student
LAQE (Laboratory of Quality Assessment in Education) – Department of Didactics and Technological Education – University of Aveiro

SUMMARY

This study is a part of the 'Post-secondary Vocational Training in Portugal Project: from a description through to suggestions to improve training quality', which ran from 2003 to 2006. This article, which makes use of data obtained from interviews with Directors of Schools which offer technological specialisation courses (CETs) and from questionnaires answered by trainers and trainees, describes the courses currently available in the central region of Portugal and identifies the strengths and weaknesses of this type of training. The positive aspects identified are: the type of training; interpersonal relationships, the developments of trainees' skills and the benefits to the institutions. The aspects requiring improvement are: course organisation (coordination and logistic matters) and some curricular aspects.

Some measures to improve the quality of CETs are suggested, which would assist the creation of courses, strengthen the collective image of this type of training and link training evaluation to training quality.

Introduction

This study is within the scope of the 'Post-secondary Vocational Training in Portugal Project: from a description through to suggestions to improve training quality' (¹) – the main aim of which was to consider the circumstances of post-secondary vocational training (level IV) (²) in Portugal and particularly the technological specialisation courses (*Cursos de Especialização Tecnológica* – CETs) offered by training institutions in central Portugal, with a view to improving them.

(¹) A project funded by the Calouste Gulbenkian Foundation, coordinated by Nilza Costa, which commenced in October 2003 and was concluded in September 2006. This project was conducted at the Laboratory of Quality Assessment in Education (LAQE), which was created in 2003 as part of the University of Aveiro Didactics and Technology in Trainer Training Research Centre. The principal objective of the Laboratory is to carry out research and to intervene in the evaluation of the quality of educational projects. The Laboratory has charge of various research projects, including two on vocational training.

(²) For the definition of training level in Portugal, see the end of the study.

Given both the growing social and educational relevance of vocational training and the recent creation of technological specialisation courses, this study focuses on two key questions: (i) how should CETs be characterised in terms of training areas and the profiles of those involved in them and (ii) what aspects exist, which can improve training quality, particularly in relation to the various players involved in CETs?

In this article, we shall seek a) to characterise characterise CETs in the central region of Portugal, on the basis of the identification of (i) the training components of the courses and their local and regional contexts; (ii) the educational and/or other entities involved in the promotion of the courses; (iii) the profile of the students who attended the courses; and (iv) the trainers involved in the training; and b) to identify the strengths and weaknesses of CETs and make some suggestions regarding the improvement thereof.

This article is accordingly organised in four sections: (i) an introduction, in which the aims and structure of the article are explained; (ii) the relevance of the subject matter, a section which describes technological specialisation courses, why they arose, how they are structured and evolve and the indicators of the relevance of this type of vocational training; (iii) a short description of the empirical study undertaken and a presentation and discussion of the results; and (iv) final observations.
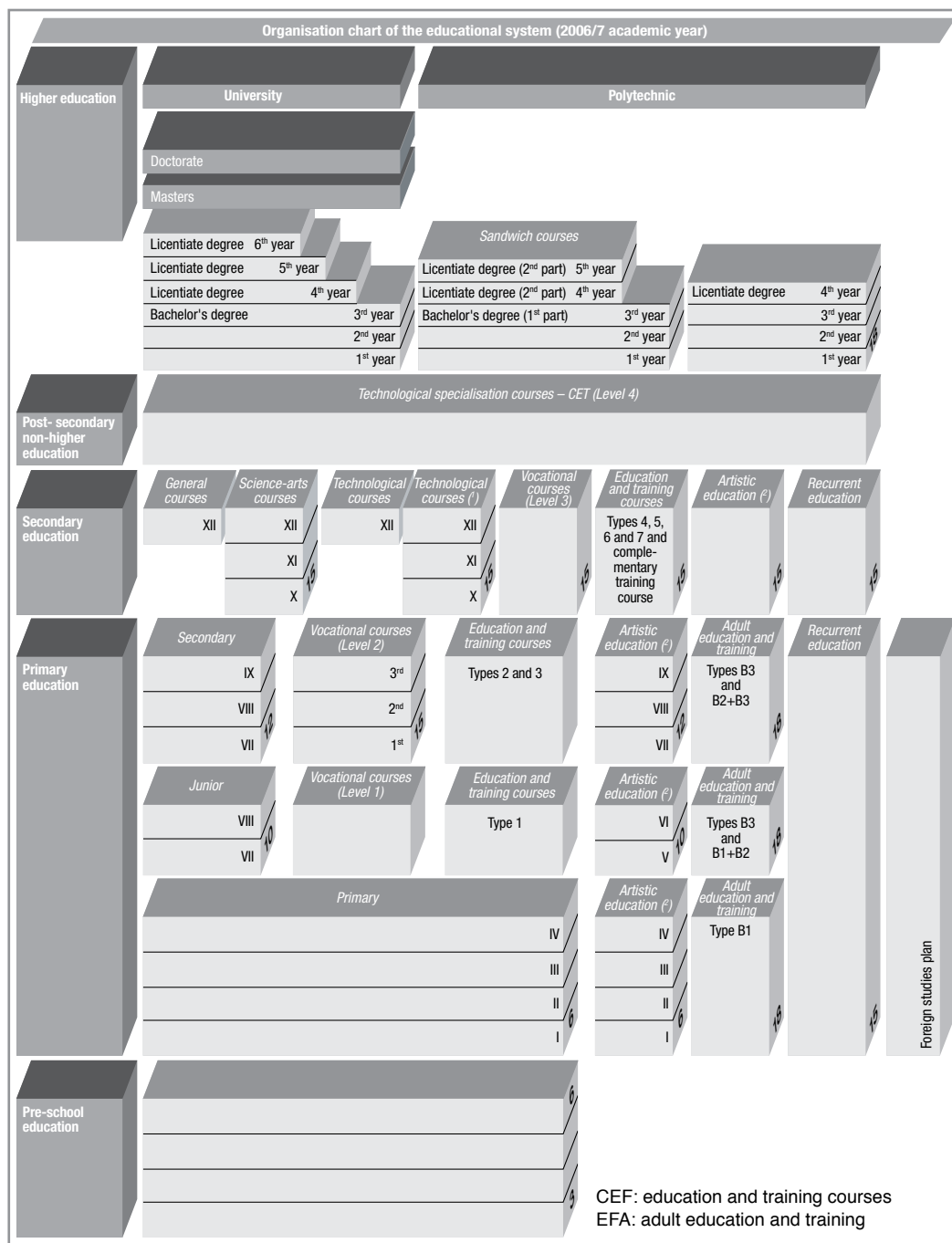
The relevance of the subject matter

Technological specialisation courses (CETs)

Technological specialisation courses (CETs), which were created in Portugal in 1999 ([3]), became a major training effort for the qualification of adults and young people throughout the country, as they offer non-higher post-secondary education training and seek to offer a training trajectory, which comprises the objectives of qualification and integration in work and also continued education in higher education. These courses offer a level IV vocational qualification and operate under the auspices of various Ministries, (Ministry of Education, Ministry of the Economy, etc.), depending on the subject matter of the course.

([3]) Statutory Instrument no 989/99 of 3 November, subsequently amended by Statutory Instrument no 392/2002 of 12 April and by Decree-Law no 88/2006, of 23 May.

Figure 1. **The Portuguese education and training system during academic years 2002/3 and 2003/4**

Organisation chart of the educational system (2006/7 academic year)

Higher education

University	Polytechnic

Doctorate

Masters

Licentiate degree 6th year	Sandwich courses	
Licentiate degree 5th year	Licentiate degree (2nd part) 5th year	
Licentiate degree 4th year	Licentiate degree (2nd part) 4th year	Licentiate degree 4th year
Bachelor's degree 3rd year	Bachelor's degree (1st part) 3rd year	3rd year
2nd year	2nd year	2nd year
1st year	1st year	1st year

Post- secondary non-higher education

Technological specialisation courses – CET (Level 4)

Secondary education

General courses	Science-arts courses	Technological courses	Technological courses (¹)	Vocational courses (Level 3)	Education and training courses	Artistic education (²)	Recurrent education
XII	XII	XII	XII		Types 4, 5, 6 and 7 and comple-mentary training course		
	XI		XI				
	X		X				

Primary education

Secondary	Vocational courses (Level 2)	Education and training courses	Artistic education (²)	Adult education and training	Recurrent education
IX	3rd	Types 2 and 3	IX	Types B3 and B2+B3	
VIII	2nd		VIII		
VII	1st		VII		

Junior	Vocational courses (Level 1)	Education and training courses	Artistic education (²)	Adult education and training
VIII		Type 1	VI	Types B3 and B1+B2
VII			V	

Primary		Artistic education (²)	Adult education and training
	IV	IV	Type B1
	III	III	
	II	II	
	I	I	

Foreign studies plan

Pre-school education

CEF: education and training courses
EFA: adult education and training

(¹) Statutory Instrument 550 A/2004, of 21st of May
(²) Specialised Artistic Education – in integrated format

In the organisation chart of the Portuguese educational and training system (cf. Figure 1), CETs are located between secondary education and higher education and are classified as short-term post-secondary (level IV) education and can last for three to four terms, depending on the training area.

Even though CETs are not the fruit of specific legislation, the first indications of the emergence of CETs in Portugal date from 1993, when they were an additional form of training which vocational schools could offer. Imaginário (1995, p.57) states as follows: *although the legality* [of CETs] *has been negatively affected (…) they have been in existence for some time and there are even trainees who have successfully completed them*. Only in 1999 were CETs created by special legislation.

Why CETs were set up
According to Pereira, Costa and Duarte (2006), two different sorts of demand lie at the origin of CETs. One of them is internal: a response to the need for intermediate training profiles, given the dynamics of regional and local work and employment. The other demand is European, and relates to he and seeks complementarity of the training obtainable in secondary education (level III courses, for example). The educational systems of various European countries already have long-term secondary level training, which is complemented by short-term specialisations (similar to CETs). For example, in France, according to Imaginário (1995) there is the *bac* (which is equivalent to Portuguese secondary education) + 2 system, which leads to the *Brévet de Technicien Supérieur*/BTS (which is equivalent to the technological or artistic specialisation diploma). There are increasing efforts in Europe to combine long-term secondary education with short-term specialisation in the vocational training of young people, with the aim to ensure that they are accredited with a view to the mutual recognition of qualifications and the movement of workers within Europe.

In Portugal, the aim of the creation of these courses, which were initially associated with vocational schools, was to provide specific training, which is more similar to real working environments ([4]).

Vocational training in Portugal has been criticised by various specialists (Pardal et al.; 2005, Azevedo; 1999 and 2001, Martins; 1999), and by employers (AEP, 2004). In addition to providing students with training that is frequently unrelated to the realities

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[4] Decree-Law 70/93 of 10 March – Introduces the legal framework for the creation, organisation and operation of vocational schools, within the scope of vocational education.

imposed by the employment market, it is also characterised by high drop-out levels (Azevedo; 1999);

Vocational education was reintroduced in Portugal in 1983, after almost completely disappearing for a decade and a half (after the abolition of technical education). When it was reintroduced, the misconceptions that viewed it as a secondary option in terms of both school and society remained unaltered (Pardal et al., 2005). After an initial phase of expansion (until the mid-1990s), there was a slight decline after 1996, however this decline 'is not specific to technological education, but is rather a reflection of a structural evolution of general school demography, common to all of secondary education' (Pardal et al., 2005, p.321-322). Following this decline, technical and vocational education entered a period of stagnation and was viewed as a less important educational option, as was also the case in France, where *'education and vocational training were [prior to the creation of the vocational baccalauréat] viewed negatively as an alternative for students, who lacked achievement in general education'* (Gendron, 2005, p.42). If the figures for the 2004/05 school year are considered, it is noted that approximately 70 % of all students matriculated are in general education, while approximately 30 % are in vocational education. According to Pereira (2006), these percentages were viewed by both educational policy makers and employers as imbalanced. Indeed, the AEP (Portuguese Business Association) acknowledges this imbalance and requests political priority during the next ten years (2004-2014) for the improvement of the training of intermediate technical staff.

The secondary education curriculum was reformed in 2004, as a way to combat lack of educational achievement and the drop-out phenomenon and to improve students' performance levels. This curricular reform diversified the range of educational options, via the creation of: (i) science and arts courses, which are intended for those who wish to continue their studies to higher education (these courses replaced the general courses); (ii) technological courses, which seek to facilitate integration in the employment market and continued studies 'particularly via attendance at post-secondary technical specialisation courses and higher education'[5]; (iii) specialised art courses, with the objective of providing training in the various artistic areas and, depending on the artistic area in question, with a view to continuation to higher education or with a

[5] According to article 5, no 1, paragraph b) of Decree-Law 74/2004.

twin perspective of insertion in the employment market and continued study; and (iv) vocational courses, which provide students with an initial qualification and enable them to continue their studies.

In summary, the vocational training options available to students are as follows: (i) technological courses; (ii) vocational courses; and/or (iii) apprenticeship courses (although technological courses have a more vocational approach). All of these courses lead to a level III qualification. Following this vocational training, students are well prepared for a working life as intermediate level technical staff, or to continue with their studies. If the students choose to continue their studies, they can opt for post-secondary education other than higher education, or for higher education (i.e. university or polytechnic).

Another of the innovations of this curricular reform is the fact that secondary schools are permitted to offer vocational courses. According to Pardal et al. (2005), this is a case of the absorption by general education of the experience gained by vocational schools and specifically with regard to the greater flexibility in the organisation of the curriculum and the adaptation of the curriculum to the locality. According to the said authors, this opening up amounts to a stimulus to increasing the links between general education and business.

How CETs are structured and developed

As is stated above, CETs are short-term post-secondary non-higher courses, with an average duration of 1 400 hours, which include classroom education for one year (scientific, technical and social and cultural training) and are complemented by work experience training (FCT) ([6]) of variable duration in workplaces.

The main objectives of these courses are to: (a) increase the level of scientific and technological knowledge; (b) develop personal and vocational skills, suited to the qualified occupational work; (c) offer training options, which include qualification and occupational placement; and (d) permit the continuation of studies.

([6]) In the new Decree-Law (DL no 88/2006), the designations of the training components have changed (there are now the following components: General and scientific training, technological training and FCT) (chapter III, section I, articles 10- 13) and the value given to the technological training component is increased (preamble). The workload is unchanged and the number of hours of the former components, (i) social and cultural training and (ii) scientific and technological training correspond to the new components (i) general training and (ii) technological training.

Applicants interested in frequenting these courses must have a secondary education. Although previously only students who had frequented level III secondary courses were permitted to take such courses, now ([7]) all secondary students are permitted to take these courses whatever their educational trajectory, subject to the proviso that if the course is not within the student's educational area, the need to obtain additional credits during their attendance at CETs is considered. Students in the final year of secondary education can also apply for a place on these courses, while access was previously limited to students with no more than two subjects pending.

The most recent legislation regarding CETs has sought in a more concerted way to improve course objectives, alter entrance conditions (to make them more flexible) and widen the range of potential course sponsors (higher education institutions are permitted to sponsor courses). When vocational schools, training centres or other entities offer CETs they are required to make a cooperation agreement with a higher education institution. In addition to these changes, individuals who frequent specific CETs may continue their studies in higher education via a special selection procedure. It is necessary for former CET students who wish to go on to higher education to prove that they have had vocational experience in the area of the CET, one year after the completion of the training. Students who have frequented CETs may be granted some credits for higher education subjects.

It should be noted that this legislation is not only accepted in Portugal, but in all Member States of the European Community, as a way in which to establish the equivalence of degrees, diplomas and other training certificates, so that qualification holders can circulate freely within Europe. It should also be noted that the Council of the European Community has defined 5 levels of vocational qualification as guidance to the Member States in the award of vocational training qualifications in Decision No 85/368/EEC ([8]). With a level IV qualification, a certificate holder will be ready to undertake a technical occupation autonomously and/or independently, on the basis of design and/or leadership and/or management responsibilities. This level of training, which is considered to be high level technical training, includes higher level knowledge, capacities and skills.

([7]) According to Decree-Law 88/2006, of 23 May.

([8]) Council Decision of 16 July 1985 on the comparability of vocational training qualifications between the Member States of the European Community (85/368/EEC), published in the *Official Journal of the European Communities* no L 199/56, of 31.07.85.

The current Portuguese context: the role of vocational training

There is a series of indicators which portray the current situation in Portugal in terms of: (i) drop-out rate (primary, secondary and higher education); (ii) young people who lack the necessary qualifications for their first job; and (iii) middle level staff who are insufficiently prepared. So far as the drop-out rate is concerned, according to the European Union, *19.3 % of young people in the 15 Member States of the former European Union left school early* (EU, 2006). In addition to the drop-out rate, the levels of educational under-achievement and drop-out have also increased dramatically in secondary education: *schools* are very *'inefficient' and only 24 % of students matriculated in technological courses graduate within the planned time period* (Jornal Página da Educação, 2003: p.4) The lack of training of intermediate level human resources is identified by the Portuguese Industrial Association, which states that *despite the attempt to relaunch Technical and Vocational Education (…) it can and must still be stated, in 2004, that the main shortages of intermediate staff have yet to be dealt with* (AEP, 2004).

However, in the light of this situation, we can state that the 'political will' to improve the current scenario and to increase the investment in the qualification of young people exists, as the National Plan for the Implementation of the Lisbon Strategy states that: 'The objective is to make the 12th year the minimum training standard for all young people, by concentrating, in the case of young people, on an increase in vocational education leading to dual certification and, among adults, on the expansion of the range of Education and Training Courses available and on the expansion of the RVCC System ([9]) (Recognition, Validation and Certification of Skills)' (Office of the National Coordinator of the Lisbon Strategy, 2006).

Given these challenges of modernisation which Portugal faces, the *Technology Plan* was approved in November 2005 and was conceived as an agenda for change for Portuguese society. This Plan assumes a fundamental role in relation to Growth and Competitiveness in the

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([9]) The RVCC procedure makes it possible to increase the level of school qualifications (School RVCC) and vocational qualifications (Vocational RVCC), via the recognition of apprenticeships conducted outside the education system or vocational training. The former (School RVCC) makes it possible to validate and certify the skills acquired by adults throughout their lives, in order to obtain a basic level school (4th, 6th or 9th year) certification or secondary level (12th year) certification. The Vocational RVCC makes it possible to recognise, validate and certify the skills which adults acquire from work and life experience via the award of a Vocational Training Certificate.

National Action Plan for Growth and Employment, which reflects the implementation of the Lisbon Strategy priorities in Portugal. The Technology Plan is an integral part of the Government Programme passed by the Assembly of the Republic. The implementation of the Technology Plan commenced when the 17th Constitutional Government came into power. The targets set by the Technology Plan for the coming years are that the number of young people aged up to 18 who frequent education or vocational training shall increase by 100 % by 2009; that the percentage of people who have completed secondary education (as a % of the 20-24 age group) shall be 65 % by 2010 and that the number of young people frequenting technical and vocational courses shall be 365 000 by 2008 and 650 000 by 2010 (Technology Plan, 2006: http://www.planotecnologico.pt/pt/planotecnologico/o-que-e-o-plano/lista.aspx).

The investment in the qualification of young people will involve an increase in the availability of vocational training options in general and of CETs in particular. In the context of this study, vocational training means: *initial training of young people and adults, within the school system, for any qualified occupation, other than at a higher level, and the improvement of human resources* (adapted from Cardim, 1995).

Despite the ongoing measures, however, there are indications from research that all is not well with vocational training (namely level III vocational training), e.g. the small percentage of students who choose this educational pathway (Azevedo, 2001) and the fact that it is a type of education with *markedly functional characteristics, which reproduces the existing social structures* (Martins et al., 2005).

Portuguese and international studies suggest, however, that it is important to invest in the promotion of vocational training quality (e.g., Blom and Meyers, 2003):
• by involving the various partners (those in charge of training institutions, trainers, trainees, families, employers, etc.);
• by taking the various factors into consideration (e.g. contextual factors – the personal characteristics and education of trainees; community, market, work and family influences);
• including various clusters of indicators (e.g. indicators with regard to 'clients'' expectations; the training process and its results).

The promotion of vocational training quality is accordingly considered to be multifaceted and highly complex and therefore needs to be constantly monitored by the institutions responsible for training (an advisory capacity is a possible approach). Nevertheless, and

given the recent nature of the availability of CETs, little is known regarding this type of training and its quality. Studies of these matters should accordingly be undertaken as a matter of urgency ([10]).

Summary description of the empirical study undertaken and presentation of the results

Methodology

A three-stage quantitative and qualitative descriptive study was conducted in order to characterise CET courses and the institutions that offer them in the Central region of Portugal.

The first objective was to identify the educational institutions and/or other entities involved in offering CETs. A documental analysis of the data obtained from official documents was accordingly conducted, which was subsequently checked via direct contact with the schools. The next objective was to characterise CETs (identification of the course training areas and the local and regional context thereof; i.e. partnerships formed and funding). This data was obtained from an interview-based survey of the coordinators of the Institutions which offer courses. The main objectives of the third phase were to develop a profile of those involved in these courses (students and trainers) and to obtain their opinions regarding the main positive and negative aspects of this type of training. To do this, questionnaires were distributed to trainers and trainees when researchers visited the institutions.

Our aim was to observe the subject matter of our study – i.e. CETs – from the point of view of the key players (course directors, trainers and trainees) and on the basis of various sources (documental analysis, interviews, questionnaires, etc.), in order to achieve a broader view via the triangulation of the various results, which are presented below.

([10]) In this regard, the doctoral thesis 'Non-Higher Post Secondary Training: The Technological Specialisation Courses in the Aveiro-North Programme of the University of Aveiro – an evaluation study from design to impact' (2006), written by Giselia Pereira, under the supervision of Nilza Costa and co-supervision of Manuel Oliveira Duarte is particularly relevant.

Results

The results presented are broken down into four phases, which include a range of aspects. In the first phase, we identify the educational and/or other entities involved in the promotion of CETs. In the second phase, i.e. the description of the CETs, we include: (i) the training areas covered by the courses; (ii) partnerships; and (iii) funding. In the third phase, we present the profile of those involved in CETs (students and trainers): (i) profile of the students; and (ii) profile of the trainers. In the fourth phase, we describe the evaluation of the Courses made by those involved: (i) students; (ii) trainers; and (iii) coordinators.

First phase: Identification of the educational institutions and/or other entities involved in the promotion of CETs.

Eighteen institutions which offer CETs were identified in the Central region, by consulting the issues of the Government Gazette in which the Ministerial Orders for the creation and implementation of the courses were published and via consultation of the web pages of these Institutions. However, when contacted by telephone and email, only six of these institutions confirmed that they did, in fact, offer this type of course: Tondela Vocational School (VS); Montemor-o-Velho VS; Torredeita VS; Serra da Estrela VS; Sertã VS and Aveiro VS.

Second phase: profile of CETs

(i) So far as the training areas of the courses and the corresponding number of students is concerned, the following courses were being offered: works management (63 students); development of multimedia products (10 students); management of tourism-related leisure and entertainment activities (29 students); installation and maintenance of computer networks and systems (17 students); and industrial organisation (8 students).

(ii) The coordinators of the Institutions develop partnerships in order to offer CETs with: companies (in all cases), associations (in the case of three vocational schools), e.g.: Associação de Comerciantes da Região de Viseu, Associação Industrial da Região de Viseu, etc.) and local authorities (two institutions).

(iii) So far as the funding of CETs is concerned, all training organisations make use of the PRODEP programme (Educational Development Programme for Portugal). All VSs also refer to a clear relationship between the creation of courses and their local and regional

context and state that this type of training meets the demand for skilled professionals in the locality and region where the school is located. Indeed, the coordinators of these institutions referred to contacts not only with companies in the region, in order to identify their employment requirements, but also, in the case of one of the VSs, to contacts with the IEFP (Employment and Vocational Training Institute).

Third phase: Profile of those involved in CETs
(students and trainers)

This profile is based on an analysis of data contained in the surveys by questionnaire distributed to 60 trainers and 155 trainees. We obtained replies from 45 trainers and 82 trainees.

(i)   The students' profile shows that most students (63 %) are under 24. 27 % are aged between 25 and 30, while the remainder are over 31. The students are predominantly male and the educational level of most of their parents is primary level. There are only six fathers and three mothers whose school careers extended beyond compulsory schooling. So far as the school careers of the respondents is concerned, we concluded that approximately 67 % of students completed their secondary education in vocational schools, while 33 % did so in general education. Concerning the final marks obtained in secondary education, are concerned, 43 % of students had a mark of 13-14 (on a scale of 1-20), 37 % had a mark of more than 17, and 14 % had a mark of 11-12 and the remainder did not respond. Regarding their current occupational status, most of the students are in employment (approximately 65 %), and, of these, 34 % work in a company/industry in the area of the CET they are taking, while 24 % work in another area, 1 % are self-employed in the area of the CET they are following, while 5 % are self-employed in another area. It should be noted that approximately 17 % of the trainees are not currently working, 15 % have never worked and approximately 2 % did not answer.

So far as the main reason for the decision to take a CET, and the subsequent categorisation of the answers to an open question, 49 % of the students referred to an 'increase in their previous knowledge in the area, by adding to the level III education they already had'; 12 % referred to 'future occupational advancement', 10 % stated that the reason for the decision was the 'practical nature of the course' while another 10 % referred to 'personal

interest', 7 % were looking for an 'occupational area with a manpower shortage' while the remaining students gave residual answers, e.g. regarding access to higher education.

(ii) Regarding the profile trainers, 55 % of the 45 respondents are males; 36 % are aged between 31 and 51, 33 % are aged between 25 and 30, 27 % are aged between 37 and 42 and the remainder are 43 or older. All trainers have a licentiate degree, 33 % have a masters degree, 19 % are studying for a doctorate; however 33 % stated that they do not have a CAP (Teaching Aptitude Certificate) ([11]), unlike the other 67 %. Only 16 % of trainers do not have an occupational activity other than their CET work. The remaining trainers work in a company/industry (36 %), as teachers in higher education (24 %), vocational education (7 %) or in general education in a secondary school (7 %), or in a variety of professions (10 %, which is made up of members of local government, psychologists and members of the liberal professions, etc.).

Approximately 67 % of trainers teach scientific/technological modules, 27 % teach social and cultural modules, 2 % teach both areas and the remainder did not respond. When questioned regarding their involvement in the supervision of trainees during the work experience part of the course, most (74 %) stated that they were not involved in this aspect. Most trainers (59 %) feel motivated by the remuneration they receive for teaching the modules.

Fourth phase: Evaluation of CETs by participants

(i) Trainees identified the following positive aspects of the CETs they are taking: the practical nature of the course (27 %), student-student interpersonal relations (24 %) and student-trainer interpersonal relationships (24 %). The other answers were negligible. The main negative aspects of the training (adopting the same rule) relate to the overall organisation of the course (e.g. with regard to coordination of the course) (21 %) and aspects of the curriculum (e.g. a very full timetable) (21 %), while the other replies relate to various other aspects, but in very small percentages.

([11]) In educational pathway courses, graduates obtain a vocational qualification for teaching, while graduates of other courses need to hold a CAP, which is obtained by attending vocational aptitude training courses.

Regarding the possibility that CETs will be seen by the general public as 'second rate' courses, 51 % of trainees disagree with this opinion and 6 % either do not know or consider that opinion correct, while the remainder did not reply.

(ii) When evaluating the modules, trainers consider, on average, that: there is little need to make changes (of workload and/or contents); that the module objectives are met well; that they make many correlations between the objectives of their module and the objectives of the course as a whole; that they sometimes make correlations between the topics/contents of their module and the other modules in the same course; that they are sometimes encouraged by the CET coordination team to interact with other trainers who work on the course and that they frequently use practical examples to illustrate theoretical aspects. Overall and on average, they assess the module they teach positively (level 5 on a scale from one to six).

When trainers refer, in reply to an open question, to the correlations between the objectives of their modules and those of the course in general, they refer above all to a relationship with the final objectives of the course (30 %), followed by the relationship with the objectives of other subjects (11 %) and with the final objectives of the courses and subjects simultaneously (11 %). Approximately 11 % state that they do not know about the other modules and also do not acknowledge the need for an interdisciplinary approach, 4 % of trainers state they do not know about the other modules, and the remainder do not reply.

In order to justify the opinion given regarding the greater or lesser encouragement of interaction with other trainers, by the CET coordination team, 26 % of those questioned state that they have such support, but do not explain how and/or with what frequency, 19 % state that there is a lack of contact with the coordination team, 15 % consider such interaction to be common practice in their school, so that there is no need for encouragement by the management bodies; 11 % refer to the existence of contact with the coordination team, but not on a regular basis, and 4 % consider that the purpose of this interaction is to maximise the use of resources and/or equipment. The remainder did not respond.

In their evaluation of the training institution, trainers consider, on average, that: access to teaching resources is very easy; the

course timetable established by the institution is appropriate; the administrative support available is very good and that the interaction with the Course Manager is very good. Overall, their evaluation of the training institution is therefore very good.

So far as their evaluation of CETs in general is concerned, trainers indicate the following main positive aspects: the value of the module taught as an area of knowledge (38 %) and the value of the module taught in terms of the trainee's vocational development (24 %). The following are the main negative aspects identified: the overall organisation of the Course (e.g. lack of contact with the Course coordination team) (25 %) and logistic aspects (e.g. inadequate premises) (19 %).

(iii) In response to an interview-based survey, the school coordinators indicated the following main positive aspects, which can be broken down into two major categories: the benefits to the school and the benefits to the trainees, with six benefits in each case. Concerning the benefits for the school, the coordinators stress the opportunities for interaction via the creation of cooperation agreements and partnerships (two cases), the extension of the range of training offered (two cases), the teaching challenge to trainers (one case) and the promotion of the school in the region (one school). They mention the following benefits to trainees: the improvement of skills (three cases), occupational advancement (two cases), and opportunities for entry into higher education (one case) and the opportunity to continue to work while continuing to study (one case).

The main negative aspects indicated by school coordinators regarding this type of training are twofold: in terms of organisation and management (10 cases) and in terms of curricular aspects (six cases). They indicate in relation to organisation and management: (i) pedagogic and administrative management (three); (ii) the trainee age limit for the purposes of financial support (two); (iii) the organisation and general workings of the courses (two); (iv) the exclusivity of PRODEP funding (one); (v) limitations imposed by the course entry requirements (one) and (vi) financial management difficulties, because of the uncoordinated nature of the PRODEP payments (1). They stressed the following with regard to curricular matters: the extensive and intensive workload because of the short duration of the course (four cases) and work experience training, e.g. difficulties in the monitoring and management of worker-students' traineeships (2).

According to the replies given by the Coordinators, we note that most schools claim to have training quality monitoring mechanisms (only one school states that it does not). Of the five schools which assess training, four do so via (i) the analysis of the survey questionnaires filled in by the students (two schools) or by students and trainers (one school); and (ii) the coordination of CETs (two schools), without identifying how or which instruments or data were used.

Final remarks

We can conclude that the six schools, all of which are vocational schools which offer CETs, offer courses in eight different training areas, selected in accordance with the local and regional survey by the schools of the demand for qualified workers as communicated to them by companies and the IEFP, and above all the demand by trainees for continuity of the level III training offered by each of the institutions.

The students who frequent the courses are above all male workers, aged under 25, with a family background which is characterised by the low level of their parents' vocational qualifications. The reason they take CETs is above all because they are seeking specialised training in the area in which they work and/or to conclude level III education, mostly in vocational schools, with marks which are generally good.

Trainers are also mainly male and most of them are aged under 35. Many of them are interested in taking post-graduate courses, despite the fact that not all of them have the necessary teaching qualification to be trainers. As CET trainers, who in most cases have other employment (above all in education and in companies/industry), they appear to be satisfied overall with their work, i.e. in terms of their remuneration. They consider the training institution in which they work and their work in the teaching of their modules to be very good, despite the fact that their replies (and particularly their replies to the open questions) appear to indicate the need for some work in the area of course coordination with regard to the promotion of an interdisciplinary context for modules taught and an increased awareness of the courses as a whole (e.g. final objectives and subjects taught).

The survey of the positive aspects of CETs, based on the replies of the various players involved (trainers, trainees and coordinators of

the institutions concerned), shows that the opinions expressed vary according to the type of respondent, as each of them stresses the positive aspects intrinsic in their own circumstances. Accordingly, the students refer to the type of training given (above all the practical nature thereof) and the interpersonal relationships they establish; trainers value the importance of the module they teach in the vocational development of the trainee; coordinators also stress the latter aspect of the development of students' skills, but also the benefits to the school of the creation of these courses (e.g. the creation of partnerships, the promotion of the school's image and/ or the expansion of the training offered).

So far as the more negative aspects are concerned, the opinions of the three groups surveyed are much more uniform, as was also the case in the study conducted by Pereira (2006). This study identifies organisational aspects of the course as requiring improvement, such as coordination (identified by trainers and trainees), and general logistic questions related to operationality (identified by the coordinators). All of the players involved in the process also indicate some curricular aspects as weaknesses of CETs, with particular emphasis on the extensive workload of this type of training.

We now present a series of suggestions with a view to the improvement of the training offered by CETs, made on the basis of the literature consulted and on the results of the empirical study.

Increasing the basis for the creation of the courses

A suggestion in order to ensure the creation and opening of courses, given their target public, is that schools which offer this type of training should undertake a detailed analysis of training needs in their regions. Failure by institutions which offer courses to carry out such an analysis could result in the existence of a considerable number of CETs which are never launched (in 12 of the institutions identified) for these reasons, because of a lack of applicants. It will be important to improve communications between schools which offer CETs and the companies and industries in the region, not only to research the courses to be created, but also as a way of increasing the level of interaction between the school and work contexts.

The search for a collective identity for training

The second suggestion we consider to be important in terms of the improvement of CETs is the promotion of strategies by course coordinators, which augment the collective identity of the courses,

to facilitate an improved awareness, on the part of course trainers, of the training provided by the course as a whole, as a way in which to promote more collaboration and interdisciplinary work between fellow trainers. Given the importance of collaborative work in terms of the improvement of the dynamics of the trainer-trainee relationship, we are of the opinion, like previous studies (Pereira, 2006), that the creation of pedagogic committees of which course managers, trainers and student representatives will be members, is an important measure, which should be implemented. The institutionalisation of these collaborative structures will amount to acknowledgement of the importance of an open dialogue between all those involved in CETs, so they can jointly resolve any problems that arise.

Using training evaluation to improve training quality
Other suggestions to improve the quality of the training provided involve the improvement of the procedures to monitor the quality of the training provided, in order to make them more systematic and complete. As seen from this study, the existing mechanisms are not being applied systematically (e.g. they are only implemented at the end of the course) and do not involve all those involved in training, or even all aspects thereof (e.g. they assess only the students' performances). However, the legislation, the regulations of which were introduced in 2006, meets this need, i.e. via the creation of an external evaluation committee, in order to monitor the evolution of courses in training institutions. There is also a need to deepen the awareness of the weaknesses of CETs as identified by the various players. It is therefore necessary to consider the possible implementation of mechanisms that can assist the improvement of course quality, i.e. via support processes based on research data, such as that presented in this study.

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Legislation

Decree-Law 70/93 of 10 March 1993 – Introduces the legal framework for the creation, organisation and operation of vocational schools, within the scope of vocational education.

Decree-Law 88/2006 of 23 May 2006 – Introduces the regulations governing technological specialisation and non-higher education post-secondary training courses, which confer a level 4 qualification.

Statutory Instrument no 1227/95 of 10 October – The regulations governing technological specialisation courses.

Statutory Instrument no 989/99, of 3 November 1999 – The regulations governing technological specialisation courses (CETs), as amended by Statutory Instrument no. 392/2002, of 12 April.

Statutory Instrument no 392/2002, of 12 April 2002 – The regulations governing special selection procedures for access and ingress to higher education.

The Structure of Training or Vocational Qualification Levels

Council Decision of 16 July 1985 (85/368/EEC), OJEC no L199/565

Appendix

LEVEL 1

Training providing access to this level: compulsory education and professional initiation. This professional initiation is acquired at an educational establishment, in an out-of-school training programme, or in the workplace. The volume of theoretical knowledge and practical capabilities involved is very limited.

This form of training must primarily enable the holder to perform relatively simple work and may be fairly quickly acquired.

LEVEL 2

Training providing access to this level: compulsory education and vocational training (including, in particular, apprenticeships).

This level corresponds to a level where the holder is fully qualified to engage in a specific activity, with the capacity to use the instruments and techniques relating thereto.

This activity involves chiefly the performance of work which may be independent within the limits of the relevant techniques.

LEVEL 3

Training providing access to this level: compulsory education and/or vocational training and additional technical training or technical educational training or other secondary-level training.

This form of training involves a greater level of theoretical knowledge than level 2. Activity involves chiefly technical work which can be performed independently and/or entail executive and coordination duties.

LEVEL 4

Training providing access to this level: secondary training (general or vocational) and post-secondary technical training.

This form of training involves high-level technical training acquired at, or outside, educational establishments. The resultant qualification covers a higher level of knowledge and of capabilities. It does not generally require mastery of the scientific bases of the various areas concerned. Such capabilities and knowledge make it possible in a generally autonomous or in an independent way to assume design and/or management and/or administrative responsibilities.

LEVEL 5

Training providing access to this level: secondary training (general or vocational) and complete higher training.

This form of training generally leads to an autonomously pursued vocational activity - as an employee or as self-employed person - entailing a mastery of the scientific bases of the occupation.

The qualifications required for engaging in a vocational activity may be integrated at these various levels.

Available on the website of the Instituto do Emprego e Formação Profissional, I.P. at: http://portal.iefp.pt/portal/page?_page-id=117,104302&_dad=gov_portal_iefp&_schema=GOV_PORTAL_IEFP&p_calledfrom=1