

CURRICULA REFORM IN VOCATIONAL EDUCATION IN ESTONIA.

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Keywords: vocational education and training (VET), VET curriculum development, VET in Estonia

Abstract

Fast development in society has brought about the necessity to develop and to reorganize vocational education, and the reform in vocational education is going on in Estonia at present. Curricula development has been one of the central problems in the reform of vocational education and training (hereafter VET) in Estonia.

The purpose of this article is to give a historical survey of the VET curricula development process during the last two decades in Estonia.

Based on survey results the article gives a historical background of Estonian vocational education; the situation in development of formal initial vocational education curricula; changes that have taken place during the two decades; results that have been achieved by the end of the last decade; and problems and challenges facing the VET curricula development during the present decade have been described.

Survey results show that the process has been very quick, multifaceted, complex and complicated. Results of Estonian vocational education curricula development have been significant – functional national curricula that have been developed and they comply with professional standards ie to labour market needs; the curricula are outcome-based and correspond to the needs of the learners and the society.

Introduction

Fast development in society has brought about the necessity to develop and to reorganize vocational education, and the reform in vocational education is going on in Estonia at present. Some authors say that this reform started in 1991 (Grootings, 1998:12; Nielsen, 1998:1), some say that it started in 1995 when Phare program Reform in Vocational Education was initiated in Estonia (Annus jt 2000:2; Neudorf, 1999:67).

Experiences of reforms in vocational education carried out in the countries of European Union and Central and Eastern Europe show that curricula development is a key point and strategic area in reforming vocational education. At the same time curricula development is a complex process, not only a reflection of the changes taking place in the world of work. It must take into account the changes in the whole society and economy, but also changes in science and technology (Buck, 1997:7-22). In Estonia curricula development has been one of the central problems in reform of vocational education and training (hereafter VET) alongside with development of school network and teachers' qualification.

Curricula development is handled as a process of working out the curricula and their implementation. Curricula development on national level has been covered in this paper, curricula of vocational higher education have not been dealt with.

In this article the author focuses on development process of VET curricula in Estonia during the last two decades. There has been described the short historical background of Estonian vocational education, the situation in development of curricula of formal initial vocational education at the beginning of the 90s, what kind of changes took place during two last decades, what results had been achieved by the end of the decades and what are the problems and challenges facing the VET curricula developers during the present decade.

The following research questions are addressed:

How did the process of VET curricula development evolve on the national level?

What were the main results of the development process of VET curricula of last two decades?

Theoretical framework: conceptualising the vocational curricula development

To conceptualize the curricula development process in VET, the author combines the standpoints of the following three theoretical approaches: the concept of vocational curricula, the concept of reforms in education and the concept of the social innovation.

Theoretical basis of the views presented below, is an understanding of curriculum as a social regulatory mechanism, which, by reflecting the historically formed knowledge, "prescribes the rules and standards by which we "think" of the world and of ourselves as active beings of the world... The curriculum is a disciplinary technology that directs how a person should act, feel, speak, and to "see" the world and ourselves" (Popkewitz, 1997: 132). Historically formed knowledge has certainly become a cultural phenomenon. Hence, the curriculum has always a cultural function: both preserving and mediating the culture to the new generations, as well as, under certain historical conditions, transformational function of the culture (Taba, 1962: 18-28). According to several authors (Jackson 1992; Taylor 1950; Taba 1962), curriculum may be defined as a fixed course of study (plan, project), or sets of courses. According to modern concepts, curriculum could be defined as knowledge. Knowledge here means the knowledge, skills, experience and values (Jackson 1992; Eisner 1992). Eisner writes: The curriculum embodies the different perceptions of knowledge conceptions. First, curricula determine the choices, secondly, complementing the perceptions of acquisition of knowledge (Eisner 1992: 277). According to curriculum theorists that have dealt with concepts and the changing of concepts of curriculum (Terhart 2002; Kelly 2004; March 2004, Pinar 2004; Ross 2005; Schiro 2008 jt.) we can summarize 1) The concept of curriculum has been changed by the users of the concept; 2) The different concepts themselves changed as if they had some kind of autonomous inner dynamic of their own and they can organize us and our view of a certain object; 3) The use of concept is inevitable, and while we use concept, especially, when an old concept is used in a new context, or a new concept in an old context, they do change the users; 4) Summarizing the changes of concepts of knowledge and curriculum in different European countries we can point out the trend from the traditional concept of curricula aimed at „Bildung“ to „Learning“ (curriculum as a plan for teaching and learning) to „Experience“ (curriculum as an enacted experience in situations). Peter Grootings notes, analyzing the reforms of educational systems in transition countries, that the reforms in transition countries are systematic, as they imply changes that are both system-wide and system-deep. Reforms are system-wide, in the sense that it requires changes in all aspects of the institutional arrangements of the countries. But changes are also system-deep, since they require the development of new relations between education and training on the one hand, and other evolving institutions in society on the other. These are in particular, the relations between schools, the labour market and private enterprises. (Grootings 2009:454). According to Grootings we can point out that substantial modernization of vocational education *is system-deep*. Developing new roles and relationships is for individuals essentially a process of learning new knowledge, skills and attitudes in order to become competent in a changing context. Reforming national educational systems is the collective learning process of all interest groups involved in the process (ibid).

Strategic directions of vocational education reforms (Loogma 2004; Young., Valonen 2000). are as follows: a) occupational standards and qualifications system, b) transformation of the school network, c) formation of regional vocational training centres; d) curriculum reform; e) integration of vocational and general education. When analyzing the results of vocational educational curricula reforms in Central and Eastern Europe, the leading experts point out that the objectives of all of the vocational training curricula should be: a) personal development; b) basic and generic skills of professional work and development of the professional field, c) understanding the society, its values and democratic development; d) providing vocational training to young people, which would give the base for further education (Lasonen, Manning 2000; Parkes, 1999; Young, 1998). It is important to consider what the underlying value principles of Estonian vocational education curriculum reform are. The question is, to which extent they counterbalance the selective aspect of vocational education and to what extent they help to overcome the narrow specialization, which prevailed in vocational education during the Soviet period, and reduce the gap between academic and applied aspect in education.

According to Heiskala, social innovation can be defined as a change in multilevel institutions (cultural, normative and regulative) of the society which enhance its collective power resources and improve its economic and social performance. He sees that social innovation encompasses regulative, normative as well as cultural innovations (Heiskala 2007: 59).

By the definition of social innovation, the reforms in vocational education should: a) satisfy certain social needs; b) have a positive impact on social development; c) have been embraced by a "critical mass" of identified actors; d) lead to institutional changes; e) trigger changes in the meaning systems and patterns of the parties.

Methology

In this paper the results of desk study and two qualitative surveys are presented. The surveys were carried out among policy makers and legislators, national curriculum developers, and VET school curriculum developers in 2002-2003 and 2009-2010.

The data was collected with a semi-structured interview, which was based on a written questionnaire. The interviews were recorded electronically and transcribed. The survey sample was compiled from among the partners of curricular reform, key persons with long term experience in curriculum development were included in the sample. Altogether 16 key-persons were interviewed about the process of curricula development. The data was gathered in two phases, in period 2002-2003, before the implementation of national curricula and in period 2009-2010, after the implementation of national curricula. The same questions were asked from the respondents in both

periods. The data was analyzed in two phases: in 2003 and in 2010. The results of the interviews were analyzed, similar and diverse opinions were considered and the chronological flow of the process was described. Results of first survey of 2002-2003 were published in several articles (Rekkor et al 2006, Rekkor 2009).

Results

The historical background of vocational education and training in Estonia

There is a long tradition of formal vocational training in Estonia. One of the first vocational schools in Estonia was the navigation school in Tallinn and Narva in the 18th century. After formation of the Republic of Estonia in 1918, the development of vocational education was initiated besides the development of general education. In 1938 there were 132 vocational schools all around the country (Kutseharidus Eestis 1938). So the system of vocational education was created already in the years of the first Republic of Estonia. During the Soviet period (1949-1991) vocational education was influenced by the Estonian position in the overall Soviet division of labour (Grootings 1998, 8).

Period 1990-2000

According to the data issued by the Educational Committee of the Ministry of Education of the Soviet Socialist Republic of Estonia there were 80 VET schools in Estonia in 1990. There were more than 220 curricula (Higher schools, technical schools and vocational secondary schools in Estonian SSR, 1989). Curriculum (at that time it was called study-plan) consisted of two parts: the first part contained the name of the specialty, requirements for admission, study period and requirements for graduation; the second part was usually given in the form of a table containing the list of subjects, number of lessons, assessment, division of subjects during the year and lesson plans.

The work on improvement of the VET system was started right after the independence of Estonia was re-established. Mati Kask (head of the Department of Vocational Education at the Ministry of Education till 2001) said in his interview: *During the first half of the 1990s prevailing situation in vocational training in Estonia was the inertia of soviet ideology and principles.* Kask brings out the following reasons: 1) narrow specialization in initial VET; 2) abundance of similar specialties (usually only the name was different, the content was same); 3) VET was oriented on large-scale production; 4) long study periods, especially after basic school; 5) in the curriculum of vocational secondary education the content and amount of general secondary education was the same as in the curriculum of academic general education; 6) headmasters of the schools were oriented on the management by strong central authorities; 7) there was an idea about a fixed, unchangeable and

predictable labour market 8) methods and work traditions were based on stereotyped traditions or authorities.

Two different kinds of curricula were brought out: 1) curricula for vocational training in vocational schools; 2) curricula for vocational training in post secondary technical schools.

Most of interviewed persons mentioned, that development of VET curricula at the first half of the 1990s was self-activity of schools, not coordinated by authorities, there was no analysis of the content. Soren P. Nielsen points out in his survey about curricula reform in Estonia, that by the beginning of Phare program (1995) the quality and quantity of VET did not correspond to the constant changes on the labour market (Nielsen 1998, p.7).

Systematic work on creating infrastructure for development of contemporary vocational curricula was started in 1995, when the Phare Reform in Vocational Education began. Referring to a corresponding survey 13 economic key sectors were chosen, 13 pilot schools were chosen and 24 satellite schools were enchanted (all in all 1/3 of all vocational educational institutions in Estonia). Within the program contemporary modular curricula were worked out in pilot schools. Curricula based on analysis of the descriptions of occupations. As a result of the analysis, knowledge, skills and attitudes necessary in the given occupations, were specified. Curricula were built up so that at the beginning of the study period the emphasis was on broad base of study, that is needed for the given occupation or group of similar occupations. At the end of the study period emphasis is on specialization on a certain occupation.

Period 2001-2010

At the beginning of this period, in the academic year of 2000/2001, there were 79 vocational educational institutions in Estonia (*National Observatory of Estonia, 2000*).

After the Chamber of Commerce and Industry had ratified first occupational standards in 1999, the professional councils proposed the Ministry of Education to establish work groups to start working on national curricula of VET.

National curricula, worked out by the broad-based working-groups, consisted of the following parts - level and duration of the curriculum; structure of the curriculum; objective and tasks; compulsory modules and their amounts/duration; principles of assessment etc.) (Vabariigi Valitsuse 1998). European Social Fund projects, which launched in 2005, supported the development of national curricula: 1) development of new professional standards and preparation for renewal was launched; 2) training and in-service training of VET teachers (incl. curriculum development) was launched; 3) development of contents of modules of vocational education curricula was launched.

The last 3-years period of decade is marked by approval of Ministry of Education and Science (5 national curricula in 2007, 14 in 2008 and 25 in 2009). Right after approval of the national curricula,

vocational education institutions started to bring their curricula into conformity with the national curricula and starting from academic year 2008/2009 also to implement them.

Development of vocational education curricula in the period of 1990 - 2010 is summed up in table 1.

Table 1. Timeline of VET reform 1991-2010.

Year	Social context	Legislation	Curriculum development
1991			1991-1994 Schools' "amateur" activities in curriculum development
1992		Education Act	Harmonization of curricula with UNESCO international standard classification of education was started. Curricula were identified according to ISCED classifications. Translation of ISCO occupations descriptions into Estonian. Data collection system of curricula was established. First national area-specific curriculum work group was formed.
1993		Basic Schools and Upper Secondary Schools Act National School Board was formed	Estonian-Danish development programme (DEVs)(1993-1995)
1994			
1995		Universities Act Phare VET reform programme supervisory board was established,	Phare project 1995-1998 13 pilot school's modular curricula, curriculum development of 24 satellite schools

		curricula development project was launched	<p>Training of curriculum developers</p> <p>Training of school leaders</p> <p>1995-1999 cooperation with curriculum developers in Ireland, Denmark and Finland</p> <p>Follow-up project of Ministry of Education and Science 1998-2000</p>
1996	Vocational Education and Employment Observatory was formed	<p>Adjustment of school network, 6 first Centres of Vocational Education were established</p> <p>Bringing vocational education institutions under the administration of the Ministry of Education and Science</p>	<p>1996-1998 in-service training of curriculum developers in Phare pilot schools</p>
1997	Chamber of Commerce and Industry starts to create professional qualifications system	<p>National Examinations and Qualifications Centre was established.</p> <p>Continuous in-service training of school leaders and teachers was started</p>	
1998		<p>Government of the Republic approved the conceptual basis of vocational education</p> <p>Vocational Educational Institutions Act</p>	<p>Phare project ended</p> <p>Composing of first national curriculum projects</p>

		<p>Private Schools Act</p> <p>Institutions of Professional Higher Education Act</p> <p>General requirements of national curricula were approved</p>	
1999	<p>Establishment of Professional Councils was started, 12 professional councils were formed</p> <p>Development of professional standards</p>	<p>Qualification requirements of school leaders and teachers were changed; passing of management training was now a requirement for school leaders and pedagogical or professional higher education was now a requirement for teachers and teachers were required to work at an enterprise for a practice period</p> <p>Continuous in-service training of teachers and school leaders</p>	Preparation of national curricula of occupational areas 1999-2002
2000	<p>Agreement of joint activities between the Ministry of Education and Science, the Ministry of Economic Affairs, the Ministry of Social Affairs, the Estonian Confederation of Employers and Industry, the Chamber of Commerce and Industry and Estonian</p>	Standard of Higher Education	<p>14 national curricula of occupational areas were elaborated</p> <p>Modular curricula in all vocational education institutions</p> <p>30% of school curricula corresponded to professional standards</p>

	Trade Union Confederation		
2001	Estonian Qualifications Authority was established	Action plan of Vocational Education for 2001-2004 Professions Act	National curricula projects of 4 occupational areas were renewed
2002	PHARE project to implement qualifications awarding system. First test-examinations took place (in 4 areas)		Coordination of curricula development is placed within the competence of National Examinations and Qualifications Centre
2003	Establishment of Professional Qualifications Committees Launch of professional examinations		
2004			
2005	447 professional standards have been elaborated	Development plan of vocational education for 2006-2008 Development plan of state vocational education institutions' network for 2005-2008 Model of national procedures of composing, changing and formalizing modules Curriculum groups were worked out 15 curriculum group councils were launched	ESF project for determining the content of 160 national curricula 2005-2008 First module passports and descriptions according to new module requirements were compiled.

2006		Standard of vocational education	2006-2008 elaboration of national VET curricula system 2006-2008 ESF project of teachers and placement supervisors'. Composing of module passports and descriptions
2007		National curricula of 5 areas are approved	Composing of module passports and descriptions Working out national curricula
2008	16 Qualification Committees are working Transition to 8-level qualifications framework (EQF) Procedures of composing, changing and formalizing the professional standards (competence based professional standards)	National curricula of 14 areas are approved New Professions Act	Composing national curricula ESF project for composing learning materials and in-service training of teachers was launched
2009	16 Qualification Committees are working 87 professional qualification awarding bodies are working 722 professional standards are approved for 312 professions 37 585 professional	National curricula of 25 areas are approved Total of 44 national curricula are approved	Composing national curricula Composing learning materials and in-service training of teachers

	certificates issued		
2010		National curricula of 7 areas are approved Total of 51 national curricula are approved	Composing national curricula Composing learning materials and in-service training of teachers

Conclusions

Summing up the development of curricula in decade 1990-2000

Development activities of vocational education in Estonia were quite tumultuous at the 90s and remarkable results were achieved:

1. Within Phare program (1995-1998) 13 modular curricula for key economic sectors were compiled in 13 vocational schools, 130 modules were described (Koch 1998, 3-8), in-service training was organized for developers of curricula in pilot schools in 1996-1998;
2. Preparatory work on the national modular curricula of occupational areas in 1999-2000, the outcome was 14 drafts (Kusehariduse teatmik 2001); The process of compiling national curricula of occupational areas was triggered. In defining the occupational areas international educational classification ISCED-97 was taken as the basis. 44 occupational areas were defined.
3. In all vocational schools modular curricula of the occupations taught at the school were worked out. In 2000, 30% of the curricula corresponded to the occupational standards (Annus jt. 2000 pp. 6-9).

So the institutional network for development of vocational curricula was there by the end of the 90-s, but the supporting infrastructure was still somewhat brittle. The following facts support the author's opinion:

1. None out of the 130 modules described in Phare program were certified; none out of the 13 modular curricula worked out by Phare program were ratified/approved;
2. None out of the 14 drafts of national vocational curricula of the occupational areas that were ordered by the Ministry of Education, were approved by the minister;

3. There was no specialist on curricula in the Department of Vocational Education in the Ministry of Education before the reorganization in 2000; in the new structure of the ministry there was no committee of national vocational curriculum; the process of curricular work was not coordinated;
4. Ministry of Education did not order any research connected to curricula from competent institutions;
5. Theoretical and pedagogical principles of national vocational curricula, that would be respected by all parties concerned, were not worked out; theoretical and pedagogical principles of the national curricula that were completed in 2000-2002, were very different. These drafts were also very different as to their content, amount, etc.
6. The application process of the national curricula – training of headmasters, people who worked on the curricula and those who had to use them, also didactic materials for using these curricula – was not planned.

It must be said that development activity of vocational curricula at the second half of the 90s was intensive and involved all vocational educational institutions. But on the other hand there were great challenges facing the developers of curricula and the coordinators of the process at the beginning of the new decade.

Summing up the development of curricula in decade 2001-2010

Despite of several disruptions at the beginning of this period, curriculum development gathered speed at the second half of the period and it became extremely rapid and effective. The development of vocational curricula was placed within the competence of National Examinations and Qualifications Centre at the beginning of this period and they had acted effectively. Main results in curricula development in the period of 2001 – 2010 are the following:

- 1) National and school curricula were systematically developed (Eesti...2005- 2008); 14 projects were elaborated (Zelloth, 2002);
- 2) A set of documents dealing with curriculum development were elaborated
- 3) Model for national curriculum structure was elaborated;
- 4) Transition to modular curricula by the end of the period, transition from application modules to content modules;

- 5) Results of the European Social Fund projects 2005-2008: a) curricula were grouped; b) 15 curriculum group councils and work groups for developing module contents for 160 national curricula were launched; c) conceptual basis of national curriculum module composition were elaborated; d) procedures of composing, changing and formalizing modules; e) several training courses had taken place for teachers and social partners for implementing curricula; f) several learning materials, incl. e-learning materials were compiled for implementing curricula; g) several national curricula were approved.
- 6) Curricula of all vocational education institutions were harmonised

Besides the results, also problematic aspects in curriculum development must be brought out:

- 1) Theoretical and pedagogical principles of the national curricula that were completed in 2000-2002 were very different. The reason for that was the unequal level of the members in the work groups;
- 2) The implementation process of the national curricula – training of headmasters, people who worked on the curricula and those who had to use them, also didactic materials for using these curricula, was planned and implemented only in the second half of the period;
- 3) Implementation of modular curricula according to national curricula in schools took longer than expected because curriculum developers and teachers were not ready for that;
- 3) Regardless of lively discussions, agreements on how to formulate conceptual basis, incl. value systems of curricula, were not reached;
- 4) Too strong inclination is noticeable towards traditional or reproductive curriculum and too little inclination towards reconceptual or transformative curriculum (Krull, 2002:308-309).

Summary

Regardless of the shortcomings in vocational education curriculum development the future perspective is optimistic. Within two decades the process of elaborating national curricula in curriculum groups was launched. By the end of the last decade, Estonia had created legislative preconditions of the system of vocational education curricula.

The majority of modular curricula that were elaborated in vocational education institutions are in accordance with professional standards and with the established requirements of modular curricula (Rekkor jt 2006).

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