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A comparison with computer and instructional technology education program competencies

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Abstract

The countries involved in the Bologna Process constitute the National Qualifications Framework for higher education in their own countries. National Qualifications Framework is a system in which the nationally and internationally recognised and associated competencies are structured in a specific order. In Turkey, 'National Qualifications Framework for Higher Education in Turkey' is constituted for increased transparency, recognition and mobility in higher education. The aim of this study is to research, regulate and improve the computer and instruction technologies education program competencies constituted within the National Qualifications Framework for Higher Education in Turkey in seven universities. The seven universities selected for the purpose of this study are selected to represent each region of Turkey. Regarding the competencies of the selected universities, it is seen that there is a general confusion about the writing of competencies and the writing of goals. Another mistake regarding the competencies is the false classification of competencies. In addition, there is no common attitude related to the writing of competencies. Therefore, in this study, a draft backbone regarding the writing of competencies in computer and instruction technologies education is tried to be created.

Keywords: Bologna Process, Bologna information system, Turkish higher education competencies framework, computer and instruction technologies program competencies.

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1. Introduction

In the world of the 21st century, the concept of globalisation affecting communities in many areas shows its effect in the higher education field as well. Today, higher education institutions under the influence of globalisation are not only responsible for meeting the needs of their own society but also being responsible for keeping up with the developments around the world and becoming part of these developments. In addition, higher education institutions undertake the development of societies through the production of knowledge and through this information produced. For this reason, it is generally accepted that the most important factor determining the level of development of countries is the quality of higher education (Arslan, 1999).

The Bologna Process, which is on the agenda of higher education institutions in Europe and Turkey today, has dragged the institutions for fundamental changes in various aspects such as management approach, instruction, education and cooperation with the stakeholders, with the publication of the 1999 Bologna Declaration, 29 countries have been involved and the process has officially started (Akman, 2010). Turkey has joined the Bologna Process in 2001. With Turkey's participation in the Bologna Process in 2001, the quality development endeavours have started to be carried out in a more systematic way (Suzen and Calik, 2016).

Countries involved in the Bologna Process constitute the National Competencies Framework for higher education in their own countries. National Qualifications Framework is a system in which the nationally and internationally recognised and associated competencies are structured in a specific order. In Turkey, 'National Qualifications Framework for Higher Education in Turkey' is constituted for increased transparency, recognition and mobility in higher education. Since it offers a modern and national framework accepted with the participation of the stakeholders which guides the education, Turkey Higher Education Qualifications Framework is important for higher education institutions; is important for the students because it makes them able to understand what competencies that they will have when they successfully complete the programs that they are involved in; is important for the employers because it helps them to understand what the students will know after their graduation, how they will transfer their knowledge to practice and what they can expect from the knowledge and abilities of the students (YOK, 2010).

Qualification in the field of higher education refers to what a person who successfully completes any higher education level can know, what they can do and what their competencies will be (YOK, 2010). Competencies within the Turkey Higher Education Qualifications Framework are classified as knowledge, skills and competency correspondingly with the qualification definition in the higher education field. The definition of knowledge according to the European qualifications framework reference levels: 'Facts, principles, theories and practices of a work or learning field', skills are defined as: 'The ability to use and practise the knowledge to carry out tasks or solve problems'. Competency is thought as 'proven abilities to use knowledge and skills for the professional and personal development in working or learning environments, and the personal, social and/or methodological skills' (MYK, 2018).

The aim of this study is to research, regulate and improve the computer and instruction technologies education program competencies. For this purpose, the following questions tried to be answered:

- How is the program competencies defined?
- What is the total number of competencies within the program?
- How is the writing of the program competencies phrases?
- How is the program competencies distributed as knowledge, skills and competencies?

2. Methodology

2.1. Research model

The research was conducted using a qualitative research method of the case study design. McMillan (2000) describes case studies as a method in which one or multiple events, the environment, the program, the social group or other interrelated systems are examined in depth (Buyukozturk, Akgun, Demirel, Karadeniz & Cakmak, 2017).

2.2. Research group

The research group of this study is constituted by seven universities, selected in a way that each one is a representative of each geographical region of Turkey. Selected universities are: Akdeniz, Gazi, Istanbul, KaradenizTeknik, Mustafa Kemal, Pamukkale and Siirt universities. Selected universities are designated with the random assignment method. In this method, all units in the population have an equal and independent chance to be chosen (Karasar, 2014).

2.3. Data collection

The data were obtained from the Bologna Information Systems through the document analysis method for the programs in effect in 2017–2018. Best (1959) refers to this method as 'systematic examination of existing records or documents as data source' (Karasar, 2014).

2.4. Data analysis

Descriptive analysis, one of the analyses of qualitative research methods, was used in the analysis of the data obtained from Bologna information systems of universities. According to the descriptive analysis, the data obtained are summarised and interpreted according to predetermined themes (Yildirim and Simsek, 2016). Within the scope of this study, qualifications were analysed in terms of expressing competences, total qualification numbers, writing of qualification phrases and distribution according to competency fields. As a result of the analyses made, the names of the universities are randomly coded so that the universities are not deciphered while the findings are available. Each letter represents a university.

While the data were analysed within the distributions according to the fields of competence, it was observed that their competences were misclassified or not classified at all by some universities. For this reason, the qualifications were required to be reclassified. When the qualifications were classified, a group consisting of four students involved in a master thesis in curriculum and instruction, and then, the classifications made are presented to the expert opinion.

3. Findings

The competencies of the departments of computer education and instructional technologies in the seven universities selected were examined based on the expressions of competencies, the total number of qualifications, the writing of qualification phrases and their distribution according to competency fields.

3.1. Expressions of competencies

When the ways in which universities express their program qualifications was examined, four different expressions in total out of seven universities are found. The way in which universities express their program qualifications is given in Table 1. As seen in the table, three out of seven universities refer

to the competencies as 'program qualifications' while two of them refer to them as 'program learning outcomes'. In addition, 'learning achievements' and 'outputs of the program' are also among the concepts used in the wording of competence.

Table 1. Competency expressions of universities

Universities	Form of expression
A	Learning achievements
B	Program learning outcomes
C	Program outcomes
D	Program qualifications
E	Program qualifications
F	Program learning outcomes
G	Program qualifications

3.2. Total number of qualifications

For the computer and instructional technology education program, some universities have enumerated their competency areas, while some universities have ignored qualification areas. At the universities where the qualification areas are considered in the enumerations, it is seen that some competences are written in more than one field. In general, the total number of qualifications for computer and instructional technology education by universities is given in Table 2. Looking at the table, it can be seen that the program qualifications in universities vary between 11 and 40.

Table 2. Total number of qualifications

Universities	Number of qualifications
A	40
B	20
C	11
D	15
E	17
F	15
G	15

3.3. Writing of qualification phrases

Sample sentences were selected for the examination of the writing of the qualification phrases. Sample qualification statements taken from universities are given in Table 3. As can be seen from the table, most of the qualification phrases are written as full sentences except university A. The qualifications of university A is written both as infinitives and full sentences. However, it is observed that mostly, the verb modality of capability is used.

Table 3. Sample qualification sentences

Universities	Qualification sentences
A	Can use the concepts related to information technologies correctly and in place.
	Innovative, intellectual, confident and respectful to ethical values.
	Ability to use application software prepared for specific purposes.
	To be able to prepare effective teaching–learning materials.
B	Effectively uses ways to access information.
	Knows the theoretical and technological infrastructure of distance education.
C	Works effectively in individual and interdisciplinary groups.
	Organises activities for field teaching and develops appropriate instructional materials.
D	Takes care to use Turkish language correctly, beautifully and effectively.

	Uses different methods and techniques in teaching computer and instructional technologies.
E	Develops educational software on the web.
	Have enough foreign language knowledge about their profession.
F	Has enough knowledge about the field.
	Takes responsibility in individual and group studies.
G	Can follow and evaluate the development of information technologies of the institutions.
	Comprehends the effects of information technologies on individuals and society.

3.4. Distribution of competencies according to competency fields

According to the Turkey Higher Education Qualifications Framework, competencies are distributed in three main fields as knowledge, skills and competency. Universities classify their own qualifications with regard to these fields. When the qualifications of the selected universities were examined, it is observed that there are mistakes in the classification of competencies. Table 4 shows the distribution of qualifications according to the universities' own classifications.

Table 4. Distributions according to original classification

Universities	Distribution of qualifications
A	15% Knowledge 35% Skills 50% Competency
B	100% Knowledge 0% Skills 0% Competency
C	0% Knowledge 0% Skills 0% Competency
D	13% Knowledge 20% Skills 67% Competency
E	%100 Knowledge %100 Skills %100 Competency
F	27% Knowledge 13% Skills 60% Competency
G	0% Knowledge 0% Skills 0% Competency

In addition to the misclassification of qualifications, as given in Table 4, university E says that every qualification takes place in all areas while university B takes all qualifications as knowledge qualification. C and G universities did not make any classifications at all. In Table 5, the qualifications of universities were given according to their would-be classification after the regulation.

Table 5. Distributions according to regulated classification

Universities	Distribution of qualifications
A	8% Knowledge 56% Skills 36% Competency
B	45% Knowledge 20% Skills 35% Competency
C	6% Knowledge 41% Skills 53% Competency
D	11% Knowledge 42% Skills 47% Competency
E	0% Knowledge 61% Skills 39% Competency
F	27% Knowledge 20% Skills 53% Competency
G	18% Knowledge 64% Skills 18% Competency

According to Table 5, computer and instruction technologies education is a knowledge-focused department at university B; is a skills-focused department at universities A, E and G; is a competency-focused department at universities C, D and F.

4. Conclusion and recommendations

4.1. Conclusion

When the universities' computer and teaching technology education qualifications are examined, the results obtained are as follows.

- There is no common terminology between universities regarding program qualifications. According to the Turkish Education Association (2009), there is no common terminology in program qualifications on the international scene either. Despite the use of the concept of 'teachers' competences' in Turkish sources for qualifications obtained by education faculty graduates in general, the concept of 'teaching profession standards' is preferred in most foreign sources (TED, 2009).
- Differences are observed in the number of universities' program qualifications.
- When the use of language in the writing of the qualifications is examined, it is seen that it is written with a full sentence in simple present time tense.
- When the qualifications written in sequence are written as a classification, problems occur in classification due to the overlapping expressions of qualifications.
- When looked at the distribution of program qualifications according to the fields, disagreements about the content of the department are observed. While the same department is seen as a skill-oriented program at a university, knowledge at another university is predominant.

4.2. Recommendations

The following suggestions can be taken into account in order to solve the problems shown in the results.

- In order not to confuse qualifications with achievements, qualifications should be expressed as 'program qualifications' at all universities.
- Universities should meet in a common ground and determine the critical competencies that they should have at each university. Thus, stakeholder institutions can establish a minimum standard for this field when they base their practices during teacher training and development on competencies within a mutual association, thus establishing a coherent structure that supports each other (MEB, 2017).
- From the work of the Turkish Education Association (2009), the United States' Teaching Profession Standards of the states of California, Michigan, Wisconsin and Rhode Island; the Queensland State Teachers' Professional Standards of Australia and the United Kingdom Teaching Profession Standards are examined. As a result of the examinations made, in terms of using a common language when writing the qualifications, it is seen that the phrases should be written as infinitives (to use and to show).
- Qualifications written in a sequential list should be reconsidered when they are being written as classified and no overlapping qualification expressions should be used to express different areas of competence.
- Qualifications should be predominantly expressed at least on skill level since it is not enough to know knowledge to teach it; therefore, the teaching profession is considered to be a skill-oriented profession.

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