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TRANSVERSAL AND SPECIFIC COMPETENCIES IN THE PERCEPTION OF THE STUDENTS IN GEOGRAPHY

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Abstract

The purpose of the research is to analyse students' perceptions of their own specific and transversal competencies, the diversity and typology of the formulated competencies, competencies' formulation modalities. The data were collected using the survey method, and 30 geographic students answered the questionnaire. The data collection was done in 2019 by the survey method. In the seminar of the discipline Geography Didactics we have applied a questionnaire with two open questions: Which are the transversal competencies (besides disciplinary) you have trained and developed in different contexts, apart from university studies? Which are the specific competencies that you have trained and developed in the study program from the specialization for which you are preparing? The formulations were subjected to content analysis, qualitative text analysis and comparative method. We determined: greater diversity of categories and transversal competencies than that of the competencies specific to specialization; ascertainment of some competencies areas in the case of transversal competencies; presentation of hierarchies and classifications of transversal competencies; a higher average per student of transversal competencies, compared to that of specific competencies; different ways of presenting competencies (grouping by categories and subcategories, competencies areas enumeration; competencies enumeration); similar formulations as meaning in the name of a skill. The students in geography presented more comprehensive lists than those in previous series and demonstrated the use of transversal competencies in the context of the observed didactic activities.

1. Introduction

The inhabitants of the present space of Romania have proven throughout their historical time that they hold diverse competencies and developed at a high level (Scridon & Ilovan, 2015, 2016; Ilovan, Jordan, Havadi-Nagy, & Zametter, 2016), and in the pre-university and university education there was a permanent interest in training the competencies of those who learn (Dulamă & Ilovan, 2015; Dulamă, Ilovan, Bagoly-Simó, & Magdaş, 2019). At present, competencies represent the main aims of vocational education and training, specified in the official documents of education (legislation, programs and textbooks). In this study, the competencies will be analysed from the perspective of the definition of competencies mentioned in Art. 4. of the Law of national education (Parlamentul României, 2011): "multifunctional and transferable set of knowledge, habits / competences and competencies" (p. 2). Brien (1997) mentions that this set is made up of declarative knowledge, procedural knowledge and attitudes and that this assembly is activated in the planning and execution of a task that requires more operations. Regarding transversal competencies, Tsankov (2017) argues that they are formed in specific contexts and that they provide opportunities for the proper accomplishment of the person's practical activities.

The way of training the students' competencies, mainly of the geographers, and of assessing the level of competence has been the aim of many studies. Recent studies have focused, in particular, on the use of ICT and digital competencies in the training and development of other competencies of "digital native" students. Thus, the development of the specific competencies of the students in geography to analyse the urban landscape was studied and the changes within it using web-based research and visual imagery (Ilovan, 2019) and by using digital mapping (Ilovan et al., 2019). One study looked at how students use online apps, web sources and electronic devices to analyse and interpret the geographical processes in the field and in the laboratory (Rus et al., 2019). The digital competencies of the students in geography from generation Z has been harnessed in making didactic films about the use of teaching methods and means in some learning activities in order to support the training and development of the didactic competencies of the future geography teachers (Dulamă, Ursu, Ilovan, & Voicu, 2019). Although the Internet is a valuable source of information and working models, in training professional competencies in the academic environment, the teacher plays an essential role in designing and organizing activities for training and developing competencies (Dulamă, Ilovan, Ciascai, & Maroşi, 2015), as well as in assuring feedforward and feedback regarding the level of competence achieved by the student and its growth modalities (Dulamă & Ilovan, 2016). The individual study carried out by the students was analysed and included in the category of transversal competencies Jucan (2014, 2016).

2. Problem Statement

Students in geography who go through the program of psycho-pedagogical studies to become teachers learn about the theories and practices regarding competencies in order to be able to create to their students appropriate contexts to form the competencies provided in the official documents. In the scientific and didactic works in Romania there are different opinions about the concept of skill, about their typology and formulation, about the training and evaluation mode (Mândruţ & Dan, 2015), we asked about the students' perception regarding competencies. Because in studies it is shown that a teacher can

facilitate the training and development of the competencies he holds, to the students. (Dulamă & Ilovan, 2016), we asked ourselves what are the competencies that students have when discussing competencies.

3.   Research Questions

The questions we sought to answer in this research are the following: What are the transversal competencies that students in geography consider to have? What are the specific competencies for the specialization that students in geography consider that they train and develop through the study program they are currently pursuing? How do students formulate and describe their competencies?

4.   Purpose of the Study

The purpose of this research is to analyse students' perceptions of their own specific and transversal competencies the diversity and typology of the formulated competencies, competencies formulation methods.

5.   Research Methods

5.1.   Participants

30 students from the Faculty of Geography - Babeș-Bolyai University from Cluj-Napoca from five specializations from the 2nd year, university degree level participated voluntarily in this research: Geography (12 students), Geography of tourism (11), Territorial planning (3 students), Cartography (2 studenti), Hydrology, Meteorology (2 students). These students go through the program of psycho-pedagogical studies to become teachers of geography.

5.2. Measurement instruments

The measurement instruments is made up of students' answers to the two questions to which they replied in writing and which they presented orally during a seminar.

5.3. Procedure

The data collection was done in 2019 by the survey method. In the seminar of the discipline Geography Didactics I have applied a questionnaire with two open questions: Which are the transversal competencies (besides disciplinary) you have trained and developed in different contexts, apart from university studies? Which are the specific competencies that you have trained and developed in the study program from the specialization for which you are preparing? The answers were presented in writing and orally. Through the interview method we obtained the necessary information to clarify the content / description of the competencies listed by the student. We processed the formulations of competencies by the content analysis method, by the qualitative text analysis method and by the comparative method.

6. Findings

6.1. Analysis of transversal competencies.

In Table 1 we grouped the transversal competencies formulated by the students into several categories. Students have formulated the competencies in several ways: mention of the competencies area (digital/sports/musical/communication/gastronomic competencies); mentioning the competencies areas and detailing within each area the competencies they have; enumeration of competencies without including them in a field. We note that the lists with the transversal competencies were much longer than those with the specific competencies. The average of transversal competencies (a - 10.13) is higher than the average of specific competencies (a -3.90) (Table 2). The larger number is explained by the fact that students are much better aware of the transversal competencies than the specific ones, probably because they have developed them to a higher level and because they have used them many times throughout their lives.

We note the diversity of competencies in the students in geography (116 competencies) and the competencies areas (23 areas) in which we have classified them according to the characteristic of their content. From the analysis of these competencies, we appreciate that the participants in the study form them during the pre-university study years (communication in Romanian and foreign languages, digital competencies, mathematical competencies, sports competencies etc.), and others in other contexts (children's clubs, private lessons, providing some jobs, family life etc.). During their presentation, we asked students to describe certain competencies that they claim to have (for example, Identifying the type of temperament; some techniques in the visual arts) or the context in which they were formed. We found that they described them (declarative knowledge and procedural knowledge) and they even applied / used them properly, in front of their colleagues (Identifying the temperament of the second author). Compared to the lists made by students from previous years, we emphasize that the lists of competencies of the current students have been much more comprehensive, more diversified. Also, in the course and seminar activities we noticed the high level of some competencies (oral and written communication, digital competencies, problem situations solving etc.), which represented a solid basis for the training of the competencies (Muste, 2016) for the career of teacher and a proof of the self-evaluation and the presentation with a low degree of subjectivity of their own transversal competences.

Table 01. Transversal competencies identified by students in geography

Skill area	Skill	Students no.	Total per area
Gastronomy	Cake shop	9	
	Pastry	7	
	Preparation of pasta	5	
	Soup preparation	4	
	Preparation of steaks	4	
	"Plating" and Gastronomical design	1	30
Foreign languages	English	18	
	French	9	
	Spanish	8	
	Hungarian	2	
	Latin	1	

	German	1	39
Digital/ICT	PC Operator (office)	16	
	Photoshop	3	
	Gamer/gaming	2	
	Management programs	1	
	Database creation	1	
	Programming	1	
	Hardware Mounting	1	25
Sport	Swimming	8	
	Roller Skates	7	
	Cycling	7	
	Volleyball	6	
	Skating	5	
	Handball	4	
	Basketball	3	
	Skating	3	
	Athletics	3	
	Skiing	2	
	Archery	2	
	Shotgun and pistol	2	
	Shotgun	1	
	Horse riding	1	
	Ping pong	1	
	Football	1	
	Martial arts (karate)	1	
	Billiards	1	68
Musical instruments	Canto/ Voce	4	
	Piano	3	
	Guitar	2	
	Organ	2	
	Accordion	1	
	Trumpet	1	
	Saxophone	1	
	Mandolin	1	
	Flute	1	
	Violin	1	17
Dance	Unspecified	2	
	Popular	2	
	Society dance	1	5
The art of the show	Acting	3	
	Modelling	1	4
Visual arts	Graphics	6	
	Painting	3	
	Drawing	3	
	Photography	2	
	Technical drawing	1	15
Handmade	Origami	6	
	Sewing/Stitching/embroidery	3	
	Quilling	1	
	Arras	1	

	Braids	1	
	Modelling	1	13
Oral communication and written communication	Public speech/ elocution	3	
	Books reading	3	
	Poetry writing	2	
	Presentation of projects	1	
	Elaboration of literary texts	1	
	Elaboration of reports	1	
	dentification of grammatical errors	1	12
Communication through devices	Radio amateurism	1	1
Social	Team work	5	
	Conflict mediation	1	6
Management and marketing	Organizing events	5	
	Time management	2	
	Firm organization / entrepreneurship	2	
	Development of advertising materials	1	
	Personal career planning	1	
	Organization of religious events	1	
	Organization of workshops in children's camps	1	
	Animation in Holiday centers	1	
	Team management	1	
	Develop a plan	1	
	Analysis of risk situations	1	17
Environment/nature	Line fishing	4	
	Orientation in space / land	3	
	Survival in nature	1	8
Journalism	Interview	1	1
Psychology	Critical thinking	1	
	Identifying the type of temperament	1	
	To learn	1	
	Continuous learning	1	4
Theology	Unspecified	1	1
Mathematics	Unspecified	5	5
Car driving	Car	10	
	Scooter / motorcycle	2	
	Tractor	1	13
Services	Waiter	1	
	Post	1	
	Parcel post	1	
	First aid	1	
	Accounting	1	
	Placer in shows	1	
	Fashion designer	1	7
Construction and interior design	Painting	2	
	Building	1	
	Plastering	1	

	Floor Tile / tile installation	1	
	Electrical installations	1	6
Agriculture	Mowing the grass	1	
	Manual milking of cows	1	
	Wood cutting	1	
	Application of treatments for plants	1	
	Tree care works	1	
	Legume / root care services	1	
	Flower care work	1	7
Total		304	304

6.2. Analysis of the specialization competencies.

In Table 2 we observed that the total of the specific competencies of a specialization listed by all the students of that specialization was the higher the number of students was greater. From the analysis of the average of the specific competencies identified by the students, we observe that, in the specializations with fewer students questioned, the average was higher, compared to the other specializations, where the average was lower: Cartography (a - 8.0); Hydrology Meteorology (a - 3.9); Territorial planning (a – 7.5); Geography of tourism (a - 3.09); Geography (a - 3.25). These averages are, however, influenced by the specificity of the specialization, not by the number of students questioned. In the specializations Cartography, Hydrology Meteorology and Territorial planning, the professions for which the students develop their competencies, have a predominant applicative character, characteristic that also influenced the specificity of the academic activities (courses, seminars, practical activities).

Regarding the specific competencies nominated by students for a specialization, based on the data collected, the following hierarchy is highlighted: Geography of tourism (9 specific competencies); Cartography (8 specific competencies); Hydrology Meteorology (7 specific competencies); Territorial planning (3 specific competencies). Although in the Geography specialization we could assign a number of 18 competencies, these were assumed to be formed also in students from the other specializations, many of these competences having a more general character. We also observed that, in the hierarchy of competencies that the students in geography develop, we have: digital skill (24 students – a share of 80%), skill of orientation in space / land (15 students - 50%), map analysis / interpretation / use (10 students - 33%).

Table 02. Specialization competencies identified by students

Competencies	Number of students who have identified the skill according to their specialization					Total
	Geography	Geography of tourism	Cartography	Territorial planning	Hydrology, Meteorology	
Interpretation of synoptic maps					2	2
Analysis of weather maps					2	2
Synoptic code decryption					1	1
Weather forecast	1					1
Performing hydrological measurements					2	2
Chemical analysis of					2	2

water						
Execution of drills					1	1
Territory Planning and design				2		2
Research and analysis of the territory	1			1		2
Conducting social surveys				1		1
Tourism management		1				1
Analysis of tourism statistics		3				3
Business organization / administration		1				1
Organization of stays / trips / hikes		2				2
Tourist guide		2				2
Organizing a travel agency		1				1
Managing customer / supplier relationships		1				1
Allocation and management of material and financial resources		1				1
Planning and execution of activities in the companies of commerce, tourism, services		1				1
Use of professional GPS devices			1			1
Preparation of cadastral documentation			1			1
Topographic survey and mapping			1			1
Calculation of coordinates			1			1
Use of radar images			1			1
Making maps	1		2			3
Use of the total station	2		2			4
Topographic measurements			1			1
Cartographic measurements					1	1
Map analysis / interpretation / use	6	2		1	1	10
Digital competencies (GIS, ArcGIS, ArcMap)	10	8	2	3	1	24
Interpretation of satellite images					1	1
Space/Land Orientation	5	8		2		15
Interpretation of diagrams, graphs	1			1		2
Identification of cause-effect relationships				1		1

Use of scientific language				1		1
Use of measuring instruments	1					1
Carrying out research projects	3					3
Realization of professional projects		1	1			2
Explaining geographical phenomena / processes	3		2			5
Use of bibliographic references	1					1
Data interpretation (hydrological, meteorological, topographic, tourist)	1	1				2
Analysis / description of an urban system	1					1
Field mapping	1		1			2
Analysis of the relief	1					1
Excel Use		1				1
Total number of students	12	11	2	3	2	30
Total competencies	39	34	16	13	15	117
Competencies average by student	3.25	3.09	8	4.33	7.5	3.90

From the analysis of the specific competencies formulated by the students, we notice several aspects: the nomination of some competencies areas (digital competencies; territory planning and design; territory research and analyse; topography competencies, cartography, meteorology, hydrology, marketing, sports competencies); connection of several competencies into one formulation (Interpretation of diagrams and graphs); detailing a skill area (digital competencies: GIS, ArcGIS, ArcMap; interpretation of geological maps, of flood risk; explanation of geographical phenomena/processes: geomorphological); constructing similar formulations as meaning (pace organization/ territory planning and design); Listing of transversal competencies (team work English, public speech, argumentation, projects presentation, data collection, information / data processing). A student refers to a skill level, being aware of the minimum level of some of his competencies).

7. Conclusion

At the end of the research, our main findings regarding the competencies presented by students in geography are: greater diversity of categories and transversal competencies than that of the competencies specific to the specialization; establishing some competencies areas in the case of transversal competencies; presentation of hierarchies and classifications of transversal competencies; a higher average per student of transversal competencies, compared to that of specific competencies; different ways of competencies presentation (grouping by categories and subcategories, listing of competencies areas; listing of competencies); similar formulations as meaning in a skill denomination. Students in

geography have presented more comprehensive lists than those in previous series and have demonstrated the use of transversal competencies in the context of the observed didactic activities.

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