



# Article Key Competences and the Transfer of Social Knowledge: Perceptions of Secondary School Pupils

José María Álvarez-Martínez-Iglesias <sup>1,\*</sup>, Jesús Molina-Saorín <sup>1</sup>, Pedro Miralles-Martínez <sup>2</sup> and Francisco Javier Trigueros-Cano <sup>2</sup>

- <sup>1</sup> Department of Didactics and School Organization, University of Murcia, 30100 Murcia, Spain; jesusmol@um.es
- <sup>2</sup> Department of Didactics of Mathematics and Social Sciences, University of Murcia, 30100 Murcia, Spain; pedromir@um.es (P.M.-M.); javiertc@um.es (F.J.T.-C.)
- Correspondence: josemaria.alvarez@um.es

Abstract: The aim of this work is to find out the perception that students in 4th year compulsory secondary education have of the teaching of key competences, as well as the possibility these have of being transferred to a real, everyday situation, according to what they have learned in the subject of Geography and History. For this, an intentional sample was configured in which more than 1400 subjects from 4th year of secondary education (in Spain) have participated, with a level of significance of 0.05 using a scale-original and unpublished-called (EPECOCISO-Evaluation of the Perception of Social Science Competences). It is a quantitative descriptive study in which through an exploratory factorial analysis—factors 1, 2, and 3 have been selected for the realization of a descriptive study. Subsequently, correlation between factors has been established through the Pearson test and between the different variables that make up each one of them with the socio-demographic variables (distinguishing between ordinal and nominal variables), through the chi-square independence test and Cramer's V test (nominal) and the linearity test and Goodman's and Kruskal's Gamma test (ordinal). Finally, it can be concluded that a methodology based and organized around the development of critical thinking facilitates the acquisition of contents and competences, as well as allowing students to detect the possibility of transferring them and putting them into practice in a real situation that can be presented.

**Keywords:** competences; secondary education; assessment; geographical and historical knowledge; critical thinking

# 1. Introduction

When talking about the perception that students have of the teaching–learning process of key competences, in general—and specifically in social sciences—reference is made to an important component of the education system: its protagonists. From this point of view, and in a social moment in which the revised discourses on personal competence, excellence, and quality come to life, analyzing these voices means entering an exciting ocean full of meaning and significance, fed by a deep-rooted social and cultural heritage which, curiously enough and from its design, does not usually give them the attention they deserve [1]. Specifically, taking advantage of students' perception to intervene in the very design of the training program is an essential task of the education system (teaching by competences) that must be completed—precisely—with the contribution of the opinion and experience of its students (as—in this case—of 4th year of compulsory secondary education).

Barely two decades ago, the term competences was used almost exclusively in connection with the field of commerce and labor [2]. The aim is to respond to the demands of society (focused on the diversity of the student body and on getting rid of the—illogical belief that all students must learn the same thing, at the same time and in the same way) and



Citation: Álvarez-Martinez-Iglesias, J.M.; Molina-Saorín, J.; Miralles-Martínez, P.; Trigueros-Cano, F.J. Key Competences and the Transfer of Social Knowledge: Perceptions of Secondary School Pupils. *Sustainability* **2021**, *13*, 2299. https://doi.org/10.3390/su13042299

Academic Editor: Eloy López Meneses

Received: 20 January 2021 Accepted: 13 February 2021 Published: 20 February 2021

**Publisher's Note:** MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



**Copyright:** © 2021 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/). to public obligations, such as the demands which, in recent decades, have been expressed by European governmental bodies, through-to give some examples-the renowned Tuning Educational Structure in Europe Project (developed by the European Union) and the DeSeCo Project (promoted by the Organization for Economic Cooperation and Development (OECD), European governmental bodies have been expressing their demands in recent decades, through-to give some examples-the renowned Tuning Educational Structure in Europe Project (developed by the European Union) and the DeSeCo Project (promoted by the Organization for Economic Co-operation and Development—OECD). Therefore, its recent inclusion in the educational landscape has become—in the current social context—the curricular model on which educational policy in the world, and especially in Europe, gravitates. So much so that all European countries have reformed and adapted their curricula in the last decade to introduce this approach based on learning outcomes [3-5]. Specifically in Spain, with the Organic Law for the Improvement and Quality of Education [6] and the Organic Law that modifies the Organic Law on Education of 2006 [7], following this common context that the European Union has set, they have committed themselves—as they did with the Organic Law on Education of 2006 [8]—to a curriculum based on learning by competencies, defining them as: "capacities to apply in an integrated way the contents of each teaching and educational stage, with the aim of achieving the appropriate performance of activities and the effective resolution of complex problems" [9–11].

From this perspective, Escudero [12] defines these competences as descriptions of students "learning, including multiple dimensions (cognitive resources of diverse nature: personal, social, values), which imply the capacity to mobilize and integrate them, in order to define and respond adequately to complex situations or problems in relatively well-defined contexts, taking into account social and ethical criteria".

This scenario undoubtedly implies a great revolution in teaching, calling into question the outdated concept of history teaching that has been perpetuated for years; a teaching based on the acquisition of concepts and on memorization, having as its final objective the creation of the subject's identity and nationalism [13]. This approach to collective identity, together with the processes of teaching and learning about history that derive from it, has continued to be active, directly or indirectly, in official curricula, school textbooks, teaching practices, and student learning, with important echoes in the ways in which teachers and students currently conceive of the past and define their socio-cultural function [14,15].

On the other hand, the competence-based model represents a new challenge and a boost for both students and teachers in charge of carrying out the teaching–learning process. This challenge—specifically in the subject of Geography and History—consists of conceiving the teaching of these social sciences as a vehicle that allows students to achieve thinking skills—historical and critical thinking—necessary for the incorporation and development of students in the society in which we live [16,17]. A society that—with information and communication technologies—is advancing at a dizzying pace, allowing the teaching and learning of concepts, procedures, and attitudes that can be put into practice. To this end, it is necessary to review the methodology used and the proposal of curricular contents, so that they can be fully and effectively incorporated and participate in this society.

Therefore, these curricular and methodological changes should be aimed at making the key competences transferable in real and everyday situations [18]. Specifically, we refer to the following competences: Linguistic communication, mathematical competence, and basic competences in science and technology, digital competence, learning to learn, social and civic competences, sense of initiative and entrepreneurship, cultural awareness and expressions. The aim is to achieve a methodological approach that emphasizes the symbiosis of innovation and research, with the aim of developing geographical, historical, and social thinking [19].

Otherwise, as long as these key competences were not transferable, their raison d'être would be meaningless, and they should therefore be applicable in many situations and

contexts, as well as multifunctional, as they can be used to achieve different objectives, to solve different types of problems and to carry out different types of tasks [20]. Thus, for example, (based on social and civic competence) "knowing how to interpret the origin of social problems" is a strategy that will give students the security and confidence to seek the best solution taking into account all other possible solutions. Another example: "to write an official document" will allow them to operate in the daily life of their lives in situations that go from where the construction of knowledge is an individual process that takes place in people's minds, which is where their representations of the world are stored [21]; that is, it is the students who build their own knowledge through interaction with their closest environment—with their reality—which allows them to assume, transform and assimilate new knowledge. Under this approach, the teacher must facilitate learning by looking for new scenarios that are based on the students' center of interest, who must be the makers and controllers of their own learning. These are basic pillars for a real teaching and learning process to take place [22]. This is, therefore, the most effective way that should mark the teaching–learning process of the key competences in the subject of Geography and History.

It is for this reason that this study tries to find out the students' perception of the possibility of carrying out various actions, activities, tasks, etc., on the transfer of what has been learned in Geography and History to a real situation and related to the context in which the student finds himself.

# 2. Materials and Methods

#### 2.1. Objectives

The general objective of this study is to find out the perception that students in 4th year of compulsory secondary education have about the teaching of key competences, as well as the possibility that these have to be transferred to a real and daily situation, according to what was learned in the subject of Geography and History. Three specific objectives also derive from this general objective:

- 1. Develop an instrument to collect information on the subject of the study.
- 2. To identify the socio-demographic variables that condition the perception of the acquisition of competences in the subject of Geography and History.
- 3. To know the students' perception of the degree of applicability of the key competences in order to detect possible ways of intervention and improvement.
- 4. To establish the degree of relationship that the methodology carried out by the teacher in the Geography and History class has with the degree of acquisition and transfer that the students have of the key competences.

# 2.2. Design

The design of this research follows a descriptive process based on quantitative methodology, which was carried out through the design and application of a scale called EPECOCISO—Evaluation of Perception of Social Science Competencies [23].

#### 2.3. Sample

As for the sample selection, it was carried out through an intentional sampling process with a standard error of 0.7% for the total universe, according to the results of the analysis with STATSTM [24], where over a total population of 14.714 students of 4th year compulsory secondary education enrolled in the Region of Murcia (both in public and private centers), it was possible—after eliminating all those data collection instruments that contained errors (or missing data)—to define a total number of subjects selected from the sample (n = 1422). In this sense, and following the specialized literature, the need for the sample size was calculated, and 996 subjects were surveyed, which means that this figure was largely exceeded in the study [25].

Furthermore, it is important to note that the sample is balanced in terms of the sex of the respondents, forming a virtually equivalent group (51%  $\sigma$ ; 49%  $\varphi$ ), whose ages are between 15 and 18 years. Similarly, it is a reliable sample (because of the stability it gives

off and the consistency of what was measured), as well as valid (because the data confirm that it measures what it intends to measure).

Finally, to highlight the maximum representativeness of the sample, it should be pointed out that all the members of the final sample come from a total of 18 secondary schools, distributed throughout all the regions of the Region of Murcia.

# 2.4. Instrument

As far as the instrument is concerned, it can be said that it presents good psychometric properties, showing the different significant relationships between the variables that influence the perception of the level of development of competences according to what was learned in Geography and History. Specifically, it is a Likert-type scale in which the students had to choose the option (among six) with which they most identified themselves (1 = totally disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = quite agree; 5 = totally agree; NS = don't know). It is composed of socio-demographic variables (gender, age, time spent studying, motivation to study, father's and mother's level of studies, as well as obtained and expected evaluation) and forty study-related questions. All variables were measured through the EPECOCISO scale using the Likert scale format. The design followed in this research has been scrupulously faithful to that undertaken on previous occasions [26], carrying out the design of the instrument under four main stages: the construction and definition of the items of the scale, the analysis process of the expert judges for the validation of the information collection instrument, the application of the scale and finally, the data analysis process. In addition, a process of consultation was followed with experts of recognized standing in the field of knowledge specific to this study, and from secondary schools or higher education establishments. At all times, the aim was to assess the relevance of the questions designed, the degree of success in the dimensions, as well as the semantic suitability and understanding in the drafting of each item. As a whole, the group of judges was made up of nine professional experts in areas related to the content or nature of the research itself (evaluation, social perception, and research methodology). In order to keep an item, the criterion of agreement equal or superior to 75% of the judges was used. Finally, once the first (previous) application of the questionnaire (Appendix A) was made to a group of selected students (n = 35), and in order to calculate the level of reliability of the questionnaire, it was necessary to follow the Kider-Richardson method by applying Cronbach's coefficient  $\alpha$  for each of the seven factors analyzed. In light of the results, and by virtue of this literature, we are able to state that we are faced with an instrument with a high level of reliability, since the  $\alpha$  coefficient adopts a value of 0.914. In accordance with the recommendations expressed by the experts, the criteria of applicability and efficiency were been considered [27], insofar as the high number of the sample with which it was worked, recommended that the research instrument be easy to apply and low in time for the participants. As can be imagined for this type of study, before starting the collection of data, the appropriate permission was requested from the responsible academic authorities; once the permission was granted, the application of the instruments was carried out directly by the research team going to each of the classrooms of the participating centers where—in real time—the questionnaires would end up being distributed among the students for their response (with an approximate duration of 20 min).

#### 2.5. Data Analysis Procedure

An exploratory factorial analysis was carried out, from which three factors were discriminated. Once the factors were determined, the items that make up each one of them were analyzed to find out the degree of dependence they have on each of the sociodemographic variables. (Table 1).

<b>FACTOR 1</b> Perception of the implementation of the acquisition of key competences in life in society	Usefulness to elaborate my curriculum vitae and also to answer adequately to the questions asked in the interview (v33). It would help me to calculate the economic cost of the trip, to choose the most appropriate means of transport according to the distance, to adjust the trips to the number of passengers, to trace the visits, to calculate the price of fuel, etc. (v34). Useful for designing and organizing a trip for some clients, taking into account the possible routes, human customs, and elements of the landscape they would cover (v35). The possibility of creating a video presentation (or with slides) which is motivating and attractive, and which allows future clients to get to know different aspects of the cities to be visited, so that they can be convinced and sign up for the trip (v36). To know which would be the heritage, cultural, or leisure elements to include in the design of a trip (v38). To be able to apply for this job call and do everything specified in it (v39). Able to use that dossier to create a new one, updating it, improving it, and incorporating the data I have obtained; all this through the planning and implementation of a new project that adapts to the needs of travelers (v40).
<b>FACTOR 2</b> Perception of the methodological strategy used for the acquisition of competences I have found that the summaries	I make in the subject of Geography and History are a good strategy for me to improve my written expression and the understanding of the texts I read (v17). In the subject of Geography and History, the tables or graphs I make are a good strategy to calculate, interpret, or deduce data (v18).
<b>FACTOR 3</b> Perception about the transfer of what I have learned to a real situation	The historical, geographical, cultural, or artistic knowledge that I have learned in the subject of Geography and History seems to me essential to develop my own criteria, and to better understand how I should help to care for the environment and use natural resources in a responsible way (v31). I believe that what I have learned in Geography and History can be useful to relate it to other knowledge I already have, or serve as a basis for learning new things or learning them in another way (v27).

In addition, in order to try to check the possible relationships between the different factors, the Pearson correlation (a test that measures the degree of relationship between two quantitative variables) and the cross table test (a test that measures where the majority or weight of the answers to the question are concentrated) have been practiced (Table 2).

**Table 2.** Total variance explained after rotation of the selected factors: rescaled matrix maximum likelihood extraction method.

Festor		Initial Self-Values			Squared Load Extraction Sums			
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %		
1	4229	58,131	58,131	4229	58,131	58,131		
2	3049	24,982	83,113	3049	24,982	83,113		
3	2764	4916	88,029					
4	2657	3385	91,414					
5	2508	3261	94,675					
6	2419	2981	97,656					
7	2374	2344	100					

Subsequently, in order to know the relationships between the variables, it was necessary to create two-dimensional contingency tables. Previously, in order to know the existing relations between the variables under study, firstly, the nature of the same was taken into account, thus differentiating between those that are nominal (those that, due to the characteristics of their measurement—through a Likert scale—imply a choice between various responses and, therefore, they do not have an implicit order, highlighting the sex, repeater, and time dedicated to study) and those that are ordinal (whose measurement also through the Likert scale—necessarily carries an order), highlighting the final grade, weekly dedication, level of studies of the father and mother).

In relation to the nominal variables, a study was carried out to discriminate the dependence or independence of these variables with the rest which are included in the instrument. For this, the chi-square independence test was carried out, considering that those variables in which a *p*-value greater than 0.1 is obtained are independent, and therefore, there is no relationship between them. Once the variables that had dependence between them were determined (they met p < 0.1), Cramer's V test was applied, which—as they are ordinal variables—indicates the strength of the association between the variables, where the value 0 indicates independence and the value 1 the perfect dependence [28].

On the other hand, to analyze the ordinal variables, a process similar to the previous one was followed but with different tests. In this way—to study the relationship of any other variable with any of these and to rule out independence—the linearity test was carried out. In this way, all those variables in which the value of p was greater than 0.1 were eliminated, since if it exceeds this figure, it is considered that the variables are independent and therefore there is no relationship between them. Once the independent variables were eliminated, for those that did comply with p < 0.1, we analyzed the degree of dependence by means of the Goodman and Kruskal Gamma test, which indicates the strength of the association between the variables, as well as the sign of it. The coefficient has the range [-1]-[1], with -1 being negative perfect association, 0 independence, and 1 positive perfect association. Thus, we observe that the closer the value is to -1 or 1, the greater the strength of the negative or positive association (respectively).

#### 3. Results

Below are the results for each of the three factors analyzed in the EPECOCISO scale.

# Factor 1. Perception of the application of the acquisition of key competences in life in society.

In order to check the students' perception of the applicability of the key competences in their lives and development as citizens of a society according to what they have learned in the subject of Geography and History, we analyzed the items belonging to this block, specifically eight (one item for each of the key competences).

The first items of this factor deal with the usefulness of preparing the curriculum vitae and also of answering the questions asked in an interview (linguistic competence), calculating the economic cost of a journey, choosing the most appropriate means of transport according to distance, adjusting journeys to the number of passengers, plotting visits, calculating the price of fuel, etc. (mathematical competence), to assess human habits and elements of the landscape they would visit (competence in knowledge of and interaction with the physical world).

In addition, the results of other items are also collected, such as the possibility of creating a video (or slide show), which is both motivating and attractive, and which allows future clients to learn about different aspects of the cities which can be visited, so that they can convince themselves and sign up for the trip (social and civic competence and competence in dealing with information and communication), as well as knowing what heritage, cultural, or leisure elements should be included in the design of a trip (cultural and artistic competence).

Likewise, when faced with the question of being able to apply for this job vacancy and do everything specified in it (personal autonomy and initiative competence); being able to use this file to create a new one, updating it, improving it, and incorporating the data obtained; all of this by planning and executing a new project that adapts to the needs of travelers (competence of learning to learn), we find that gender does not interfere or condition the response, as the percentage of response is similar, with 28.9% of female students and 29.4% of male students totally agreeing on the applicability of the competences in their daily lives.

On the other hand, the fact of having repeated a course conditions the answer to these questions, since only 11.7% of the students who repeated find what they learned in the social sciences class useful, while the non-repeating students who find the competences useful and applicable are 25.1%. The same is true of the final mark, since students who obtained a passing grade perceive—to a greater extent—the applicability of the competences to everyday situations (31.3%), while those who have their final mark failed hardly perceive such applicability (16.7%).

Furthermore, we also found significant differences in the time and motivation that students have for the study. Thus, 23.7% of the students who spend less time on the study consider that the competences are transferable to daily life situations compared to 37.1% of the students who spend more than one hour. Furthermore, almost half of the pupils who consider that the key competences learned in Geography and History class are easily transferable and help their development in society are those who spend more time studying because they are motivated and like the subject (39.7%).

Therefore, it can be said that there is a significant and positive dependence on the fact of having repeated the course, on the motivation of the students for the study, as well as on the time they spend on it and the final mark. In other words, the fact of not having repeated a course, the greater dedication to the study of the subject, the greater degree of motivation to study the contents, as well as the higher mark indicates a greater degree in accordance with the items of this factor, thus conceiving that the acquisition of the situations that are presented to the students in everyday life and, therefore, help their personal and social development (Tables 3 and 4).

						F3					Total
		1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	10141
	1.00	5	4	5	3	11	9	2	2	3	44
	1.50	1	5	4	5	11	4	5	2	2	39
	2.00	3	5	3	7	12	10	4	2	1	47
	2.50	2	2	12	18	10	17	11	13	7	92
F2	3.00	3	2	10	21	35	24	34	21	12	162
	3.50	0	2	12	12	49	50	45	17	12	199
	4.00	4	1	7	14	42	61	74	45	26	274
	4.50	0	2	6	11	28	39	72	40	35	233
	5.00	1	0	3	8	12	24	42	45	57	192
Тс	otal	19	23	62	99	210	238	289	187	155	1422

Table 3. Test cross table.

Table 4. Cramer's V test. Perception on the application of the acquisition of key competences in life in society.

	v1	v3	<b>v</b> 4	<b>v</b> 5	v6	<b>v</b> 7	v8
Sex	0.083 **	0.073	0.083 **	0.102 ***	0.147 ***	0.108 ***	0.072
Repeater	0.084 **	0.08 *	0.06	0.023	0.056	0.075 *	0.041
Study motivation	0.13 ***	0.099 ***	0.096 ***	0.116 ***	0.107 ***	0.112 ***	0.107 ***

V of Cramer: \* *p* < 0.1; \*\* *p* < 0.05; \*\*\* *p* < 0.01.

#### *Factor 2. Perception of the methodological strategy used for the acquisition of the competences.*

This factor is made up of two items which have the aim of finding out the students' perception of the methodology used by teachers in the teaching of History, and whether this methodology allows them to better and more effectively acquire the competences (Tables 5 and 6).

**Table 5.** Goodman and Krusal gamma test. Perception on the application of the acquisition of key competences in life in society.

	<b>v</b> 1	<b>v</b> 3	<b>v</b> 4	<b>v</b> 5	<b>v</b> 6	<b>v</b> 7	<b>v</b> 8
Final Note	0.2 ***	0.145 ***	0.04	0.1 ***	0.151 ***	0.161 ***	0.158 ***
Time	0.104 ***	0.078 ***	0.066	0.1 ***	0.118 ***	0.153 ***	0.126 ***
N. Father	0.009	0.035	-0.08 ***	0.031	0.032	0.061 **	0.016
N. Mother	0.05	0.073 **	-0.066 **	0.039	0.039	0.06 **	0.078 ***

Gamma of Goodman and Kruskal: \*\* p < 0.05; \*\*\* p < 0.01.

Table 6. Cramer's V test. Perception of the methodological strategy used for the acquisition of skills.

	V17	v18
Sex	0.173 ***	0.099 ***
Repeater	0.065	0.08 *
Study motivation	0.076 ***	0.088 ***

V of Cramer: \* *p* < 0.1; \*\*\* *p* < 0.01.

In this sense, the analysis of the first item questions whether summarizing the subject is a good strategy for understanding texts and improving written expression. The result is—on the one hand—that there is a positive relationship with the sex of the students, that is to say that the sociodemographic variable sex analyzed influences the response of the students surveyed. In this case,—being positive—the response results in a greater degree of agreement. Specifically, it is the students who are in greater agreement that an adequate methodology helps in the acquisition of skills. On the other hand, there is also a positive dependence on the motivation of the students for the study, the time they dedicate to it and the final mark, that is, the greater the motivation to study the contents, the more time they dedicate to the study and the higher the mark. Therefore, they agree to a greater extent that methodology is a determining factor in favoring the acquisition of competences (Tables 5 and 6).

#### Factor 3. Perception of the transfer of learning to a real situation

The two items were analyzed to find out the variables that influence students' perception of the transfer of skills and the learning that results from them, give revealing results.

On the one hand, in the first of these, students were asked whether the contents worked into the subject of Geography and History help them to establish their own criteria and improve their relationship with the environment and society, as well as the mother's level of studies, condition the answer to this question, having a positive significance relationship (that is, the higher the final mark, the more time dedicated to study, the stronger the motivation and the higher the mother's studies, that is, the higher the degree of agreement that the students establish with the item) (Table 7).

On the other hand, in the second item of this block, which refers to the usefulness that the student perceives from what he or she has learned in the Geography and History class in relation to the knowledge that he or she already has or may acquire. The results indicate that sex conditions the answer to this question, since 73% of the students surveyed agree completely with the item, while in the case of students, it is only 27%. In addition to sex, there is also a dependence with the item—and therefore its answer conditions—the fact of having repeated some courses, as well as the motivation and the time spent on the study of the subject. This significance is positive in the last two cases (i.e., the greater the motivation

and the time that the students dedicate to study, the greater the degree of agreement they show with this question) (Tables 8 and 9).

**Table 7.** Goodman and Krusal gamma test. Perception of the methodological strategy used for the acquisition of the competences.

	V17	v18
Final Note	0.138 ***	0.132 ***
Time	0.088 ***	0.05 *
N. Father	0.015	-0.027
N. Mother	0.027	0.003

Gamma of Goodman and Kruskal: \* p < 0.1; \*\*\* p < 0.01.

Table 8. Cramer's V test. Perception of the transfer of learning to a real situation.

	v31	v27
Sex	0.16 ***	0.065
Repeater	0.097 ***	0.032
Study motivation	0.101 ***	0.115 ***

Table 9. Goodman and Krusal Gamma test. Perception of the transfer of learning to a real situation.

	<b>v31</b>	v27
Final Note	0.204 ***	0.162 ***
Time	0.055 **	0.075 ***
N. Father	0.078 **	0.027
N. Mother	0.108 ***	0.078 **
	0.05 /// 0.01	

Gamma of Goodman and Kruskal: \*\* p < 0.05; \*\*\* p < 0.01.

## 4. Discussion and Conclusions

The results obtained regarding the different variables analyzed on the students' perception of the applicability of the key competences in their life and development as citizens of a society, according to what was learned in the subject of Geography and History, indicate that both male and female students detect the applicability of the key competences in their personal and professional development. However, the students who obtain an appropriate assessment (a mark above five), have greater ease in acquiring the competences; the students who find it easy or who have no difficulty in assimilating competences agree with the assessment instruments proposed in the questionnaire, thus there is a positive dependence on assessment by competences. For this reason, it is absolutely necessary to recommend the abandonment of the assessment model that has traditionally predominated in the subject of Geography and History, valuing different assessment systems in which standardized tests do not obtain as much weight and facilitating the processes and understanding of concepts instead of the concepts themselves and their measurement [28–30]. In this sense, study time and motivation are also intimately related, since when this is high, it provokes the interest of the students, having repercussions on their dedication to the work and study of the subject.

On the other hand, by way of analysis to the results, it was also detected that there is a positive relationship between the perception that students have of the acquisition of key competences for their vital development and the type of methodology used for their acquisition, since the use of an appropriate methodology, based on active methods, with a large number of procedural operations and in which students are the protagonists in the construction of their knowledge (that is, an appropriate methodology such as that proposed in the questionnaire by means of diagrams, texts, etc.) favors the acquisition of competences.

One of the key findings is that the way in which the process of teaching the competences in the class of Geography and History is carried out undoubtedly favors an increase

10 of 15

in the motivation and interest of the students in the subject. This results in more hours of study and review (undoubtedly of content not only based on memorization but on the procedures and construction of their own knowledge), as well as the increase and interest translated into more hours of dedication; which are the elements that are conducive to having a higher final grade. It is for this reason that most of the students surveyed show a greater degree of agreement that the methodology determines the time of study and dedication. In addition, it is noteworthy that the students show a greater degree of agreement than the students, this may be due to the fact that the use of an active methodology involves a series of complex operations closely linked to the pace of maturation of the student. This rhythm is much greater in women than in men, allowing a better understanding of these methodologies and therefore facilitating the acquisition of skills.

In line with this, and after analyzing the variables which make up the last of the factors, we observe that female students conceive greater transfer of skills to a real situation than male students, due to the fact that they develop maturity before the students do. Likewise, the final mark, motivation and study time of the students have an influence, since this allows a better processing and assimilation of the key competences, predisposing the students to have mastered concepts that they apply or should apply in their daily lives. For this, the methodology used for the acquisition of competences is decisive, since an adequate methodology such as the one presented in the questionnaire helps to acquire the competences according to the contents worked on in class. Furthermore, a methodology based on the development of critical thinking and on procedures for the acquisition of contents and competences makes it easier for students to detect the possibility of transferring them and putting them into practice in a real situation that may arise.

In the light of these results, it is therefore necessary to consider and reconsider the role, opinion, and perception of the learning community in the processes of teaching competences. Similarly, one fact is striking: in a system that boasts about the implementation and teaching of educational competences, there is a feeling that what is really being done is something else. Therefore, due to the results of the correlation of factors, it is essential that both teachers and learners break with what has been established as the norm in the teaching-learning system up to now. Although it is true—as the bibliography indicates—that competences come from the business world and have been used in vocational training, [1] which implies more procedural learning, it is no less true that the model perpetuated in Spain in recent decades has been based on the memorization of concepts and their reproduction, with a unidirectional teaching methodology at the center in which knowledge left the teaching staff and reached the students who had no choice but to assimilate it (or not), which would undoubtedly be verified later in the assessment. This is why carrying out this change—sometimes blindly due to lack of training and experience—produces a great deal of frustration in both teachers and students, causing inconsistencies in the teaching-learning process, as well as abandoning or adulterating the competence-based teaching model. In view of this, it is inevitable to focus on three key aspects: methodology, the role of the teacher in the teaching-learning process and coherence between the elements of the curriculum (with special emphasis on assessment). On many occasions, the teaching-learning process is reduced to the achievement of satisfactory results, losing sight of the other curricular elements. If these results are negative (or not as expected), it is determined what is failing or why satisfactory results are not being obtained; but on the contrary, and once the reason is known, neither the teaching resources nor the adequate strategies to tackle the how are given. From experience, it is known that evaluation has always been the most worrying part for students, so that the students have always studied with the aim of obtaining a good final qualification (quantitative), not worrying about whether during this learning process the education received has been of quality, or whether there have been-or not-learning results that are transcendent to the educational fact. Surely, if two decades ago the concept of competence did not exist in academic language and the examination was used as an essential instrument of evaluation (with a structure, type of questions, content, etc.), the quality of the education

received would have been a problem. It is controversial that, five years later, with specific legislation in respect of these basic competences, the examination continues to be used in compulsory secondary education as an almost hegemonic element for assessment, whose internal structure and content does not respond faithfully to the spirit of the supposed competences but, rather, to past times, being in this way perceived by students [31].

Precisely, based on the empirical data obtained on the perception of the methodology of competences by students, it can be stated that it is necessary to move away from methods based on the performance of exercises (mechanical or repetitive) and textbook activities (based on copying on a routine basis), a fact which moves away from the aims of an education orchestrated around competences, as stated in the OLE, the OMLIQUE and—also now—the recent OLMOLE. This being the case, the students not only cannot construct their own knowledge based on their own interests, but neither can they develop their knowledge or express it in a different way, since they have as their horizon an evaluation in which the repetition and exact reproduction of the contents prevails, not leaving; thus, freedom for the same subject or a certain historical fact to be developed or expressed from another perspective, limiting the critical thinking of students and, of course, preventing the student from perceiving that such learning can be transferred to a real situation; and thus, helping to favor his or her personal and professional development as an individual in society [32,33].

On the other hand, teachers—often because of accommodation and other times because of the limitations of the system or the school—condition their own knowledge about the subject and, sometimes, it is easier for them to follow a pre-established pattern or script, than to teach in an authentic way [34,35] those skills that students can show in a critical and coherent way, so that they can be applied to everyday situations typical of their age.

These two aspects make up one of the main problems regarding the teaching–learning process, since the promotion of students is based on them, and not so much on the knowledge learned. Therefore, it seems sensible that the types of assessment should be reviewed and that—above all—it should not end up being a rigid and standardized compartment, that is, one which is flexible in order to adapt to all students regardless of the geographical, economic, social, or cultural context.

Finally, it is important to point out that the limitations that can be found in this study refer, on the one hand, to the complexity and extension of the subject matter and, on the other hand, to the fact that the questionnaire is focused on the field of social sciences and their methodologies, so it is absolutely necessary to take this information into account in the case of using it as an evaluation of the teaching–learning process.

**Author Contributions:** Conceptualization, J.M.Á.-M.-I., and J.M.-S.; Data curation, J.M.Á.-M.-I.; Formal analysis, J.M.Á.-M.-I. and J.M.-S.; Funding acquisition, F.J.T.-C. and P.M.-M.; Investigation, F.J.T.-C., J.M.Á.-M.-I., and J.M.-S.; Methodology, F.J.T.-C. and P.M.-M.; Project administration, P.M.-M.; Resources, F.J.T.-C.; Writing—review and editing, J.M.Á.-M.-I., P.M.-M., and J.M.-S. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research has been financed by the projects "The evaluation of competencies and the development of cognitive abilities on history in Obligatory Secondary Education" (EDU2015-65621-C3-2-R), subsidized by the the Spanish Ministry of Economy and Competitiveness and co-financed with EU ERDF funds; and "Methodological concepts and active learning methods to improve teachers' teaching skills" (PGC2018-094491-B-C33) subsidized by Spanish Ministry of Science and Innovation, Spanish Agency of Research and co-financed with EU ERDF funds.

**Institutional Review Board Statement:** The study was conducted in accordance with the guidelines of the Declaration of Helsinki, and was approved by the Ethics Committee) of University of Murcia on 30 June 2017.

Acknowledgments: Acknowledgements to Spanish Ministry of Science and Innovation, Spanish Agency of Research

Conflicts of Interest: The authors declare no conflict of interest.

# Appendix A

# QUESTIONNAIRE FOR FOURTH YEAR STUDENTS

"Perception of assessment in Social Sciences, Geography and History, and its relation to the development of competences (EPECISOCO Scale)"

Students' perception of basic competences according to what they have learned in the area of Social Sciences, Geography, and History

1. After studying Social Sciences, I find the development of competence in linguistic communication very useful, as with it I will

be able, among other things, to use language to express my emotions, experiences, and opinions, so that others can understand me.

2. I believe that mathematical competence is necessary, as I will know how to apply mathematics in order to be able to solve problems related to the Social Sciences.

3. I consider that the training received in Social Sciences helps me to realize the importance of competence in the knowledge of and interaction with the physical world, as it allows me to be committed to the environment around me and to society.

4. What I have learned at the institute, in Social Sciences, makes me see how essential competence is in the treatment of information and digital competence, since it allows me to develop skills and abilities to use more and/or better information and communication technologies (ICT).

5. I consider the contents worked on in Social Sciences for the development of social and citizen competence to be very valuable, as they have enabled me to be participative at a social level (taking part in elections, creating associations, etc.).

6. According to what I have learned in Social Sciences, I think that cultural and artistic competence is very interesting, as it makes it easier for me to express myself, communicate, and perceive and understand different realities and productions in the world of art and culture.

7. What I learn in Social Sciences helps me to understand how fundamental competence is for learning to learn, since with it I am aware of what I know and what I need to learn in order to build my own knowledge.

8. Thanks to the subject of Social Sciences, Geography, and History I have managed to appreciate the benefit of developing the competence of autonomy and personal initiative since it facilitates having one's own initiative to imagine and carry out something important and with a critical sense.

Students' perception of the degree of difficulty they have in assimilating the basic skills

9. In relation to what I learned in the Social Sciences course, it would be very easy for me to write and present a formal complaint in an establishment, to file a complaint, or to present an instance in a body such as a Town Hall.

10. It is very easy for me to apply the mathematics that I have learned in school when it comes to properly interpreting and deducing information on economics or some economic graphs, data related to the Social Sciences.

11. Based on what I learned in the Social Sciences course, I find it difficult to locate existing industries in an area or region, to indicate which rivers I would cross if I made an exit or a journey, or to draw up a route taking into account the possible obstacles that we may encounter due to human constructions.

12. As a result of my work in Social Sciences at the Institute, when I read a document, it is very difficult for me to know how to differentiate the really important information from that which is only complementary or filling in.

13. Knowing how to express my own ideas and listen to the ideas of others, respecting them even if they are different from my own, with the aim of dialogue and reaching agreements to resolve conflicts, is something that would be very difficult for me depending on what I have learned in the Social Sciences subject.

14. It is very difficult for me to know how or with what criteria I have to evaluate a creation to know if it is a work of art or something without value, using what we have studied in Social Sciences.

15. I think that learning which strategies to use or which resources to resort to in order to know my rights and obligations as a citizen is easy, based on what I have learned in Social Sciences up to now.

16. With what I have learned in Social Sciences, it is normally difficult for me and generates a lot of insecurity in trying to face or assume the problems that happen to me on a daily basis.

Students' perception of the instruments used to assess the degree of achievement of basic competences

17. I have found that the summaries I make in the subject of Social Sciences are a good strategy for me to improve my written expression and understanding of the texts I read.

18. In the Social Science subject, the tables or graphs that I make are a good strategy to calculate, interpret, or deduce data.

19. Watching videos or documentaries and making a later commentary in Social Sciences helps develop my critical spirit and modify my consumption habits.

20. Having to make or interpret maps in Social Sciences is a good strategy to assess my ability to obtain, analyze, and synthesize different types of information.

21. I believe that taking an exam with short or multiple choice questions in the social sciences is a good strategy to evaluate my knowledge and critical analysis of societies, their evolution, and changes in them.

22. I consider that the way I am evaluated in the subject of Social Sciences (exams, tasks, activities...) does not allow me to demonstrate my knowledge of different cultural and artistic manifestations, nor my attitude towards heritage and cultural life.

23. I consider that taking an exam with developmental questions in the subject of Social Sciences is a good strategy to evaluate my knowledge and skills.

24. I believe that an oral exam (or an oral presentation) in social sciences is a good strategy to demonstrate the knowledge acquired.

Students' perception of the transfer of what they have learned in Social Sciences to a real situation

25. What I have learned in Social Sciences is useful to me when I have to participate in debates and be able to express myself in public.

26. Studying Social Sciences, I have been able to see that some of the things I have learned in Mathematics have usefulness and I can apply them in my daily life.

27. The historical, geographical, cultural, or artistic knowledge that I have learned in the subject of Social Sciences seems to me essential to develop my own criteria and to better understand how I should help to care for the environment and use natural resources in a responsible way.

28. The search for and use of information through digital media and the knowledge that I have acquired in the subject of Social Sciences about history, culture, art, or geography, seem to me very useful when it comes to obtaining information and data that I can use in other areas of my life.

- 29. My attitude of respect and help to others, or my acceptance and understanding of people who have different ideas from mine (or who have a different culture or religion), has improved because I have studied the subject of Social Sciences.
- 30. What I have learned in Social Sciences helps me to appreciate and value the cultural and historical heritage of the Region of Murcia (archaeological remains, museums, etc.).
- 31. I think that what I have learned in Social Sciences can be useful to relate it to other knowledge I already have, or serve as a basis to learn new things or to learn them in another way.
  - 32. On many occasions, what I have learned in Social Sciences has helped me to have my own criteria when deciding on a situation in my life, assuming advantages and risks.
- 33. What I have learned in Social Sciences, Geography and History could be useful to write a good letter of introduction, to elaborate my curriculum vitae, and also to answer adequately the questions asked in the interview.
- 34. I think that having learned how to interpret maps in the Social Sciences subject, I could use it to calculate the economic cost of the trip, to choose the most appropriate means of transport according to the distance, to adjust the trips to the number of passengers, to draw up the visits, to calculate the price of fuel, etc.
- 35. I believe that, with what I have learned in the Social Sciences course, I am capable of designing and organizing a trip for some clients, taking into account the possible routes, human customs, and elements of the landscape that they would cover.

36. I believe that the knowledge I have acquired in Social Sciences enables me to create a video (or slide show) that is both motivating and attractive, and that allows future clients to get to know different aspects of the cities to be visited so that they can be convinced and sign up for the trip.

37. I have difficulties in resolving conflicts that may arise due to the different particular interests that may exist within a group, so, with what I have learned in Social Sciences, I believe that I am able to dialogue with future travelers with a constructive attitude and reach democratic agreements, without having to prepare myself for this.

38. With what I have learned in Social Sciences I believe that I have acquired sufficient skills, abilities, knowledge, or capacities to know what would be the heritage, cultural or leisure elements that I should include in the design of a trip.

39. What I have worked on up to now in Social Sciences has prepared me sufficiently to be able to apply for this job call and do everything specified in it.

40. Assuming that the company already has a model information dossier for group trips, I believe that with what I have learned in Social Sciences I will be able to use that dossier to create a new one, updating it, improving it, and incorporating the data I have obtained; all this through the planning and implementation of a new project that adapts to the needs of the travelers.

# References

- 1. Molina, J.; Marques, C. Teaching experience in Physical Education and students with specific educational needs: Correlation study. Challenges. *New Trends Phys. Educ. Sport Recreat.* **2009**, *16*, 16–21. Available online: https://recyt.fecyt.es/index.php/retos/article/view/34966 (accessed on 20 December 2020).
- OECD. Regional Development Policies in OECD; OECD: Paris, France, 2010. Available online: https://doi.org/10.1787/20737009 (accessed on 16 December 2020).
- 3. Eurydice. *Developing Key Competences at School in Europe: Challenges and Opportunities for Policy 2011/12;* Eurydice Report; Publications Office of the European Union: Luxembourg, 2012; pp. 1–20. Available online: https://eacea.ec.europa.eu/nationalpolicies/eurydice/content/developing-key-competences-school-europe-challenges-and-opportunities-policy\_en (accessed on 17 December 2020).
- OECD. *The Future of Educations and Skill;* OECD: Paris, France, 2018; Volume 1, pp. 1–10. Available online: https://www.oecd. org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf (accessed on 19 December 2020).
- 5. OECD. *Competition Strategy. Competences for Building a Better Future;* OECD: Madrid, Spain, 2014. Available online: https://dx.doi.org/10.1787/e3527cfb-es (accessed on 16 December 2020).
- LOMCE. Organic Law 8/2013, of 9 December, for the Improvement of Educational Quality (LOMCE). Official State Gazette, 295, of 10 December 2013. Available online: https://www.boe.es/boe/dias/2013/12/10/pdfs/BOE-A-2013-12886.pdf (accessed on 14 December 2020).
- LOMLOE. Organic Law 3/2020, of 29 December, Amending Organic Law 2/2006, of 3 May, on Education. Official State Gazette, 340, of 30 December 2020. Available online: https://www.boe.es/boe/dias/2020/12/30/pdfs/BOE-A-2020-17264.pdf (accessed on 14 December 2020).
- LOE. Organic Law 2/2006, of 3 May, on Education. BOE, 106 of 4 May 2006. Available online: https://www.boe.es/buscar/pdf/ 2006/BOE-A-2006-7899-consolidado.pdf (accessed on 23 November 2020).
- Recommendation 2006/962/EC of the European Parliament and of the Council, of 18 December 2006, on key competences for lifelong learning. Off. J. Eur. Union 2006, L 394/10. Available online: https://eurlex.europa.eu/legal-content/ES/TXT/?uri= CELEX%3A32006H0962 (accessed on 25 November 2020).
- Decree 220/2015, of 2 September 2015, Establishing the Curriculum for Compulsory Secondary Education in the Autonomous Community of the Region of Murcia. Official Gazette of the Region of Murcia, 203, of 3 September 2015. Available online: file:///C: /Users/USUARIO/Downloads/115812-Decreto%20220-2015%20curriculo%20ESO%20(1).pdf (accessed on 29 November 2020).
- 11. Royal Decree 1631/2006, of 29th December, Which Establishes the Minimum Teaching Requirements for Compulsory Secondary Education. BOE, 5, of 5 January 2007. Available online: https://www.boe.es/buscar/pdf/2007/BOE-A-2007-238-consolidado. pdf (accessed on 28 November 2020).
- 12. Escudero, J.M. Professional skills and university training: Possibilities and risks. REDU. Rev. Docencia Univ. 2007, 2, 1–20.
- 13. Morin, E. The Seven Necessary Knowledges for the Education of the Future; Paidós Studio: Barcelona, Spain, 2001; Volume 1, pp. 20–24.
- 14. Gómez, C.J.; Solé, G.; Miralles, P.; Sánchez, R. Analysis of Cognitive Skills in History Textbook (Spain-England-Portugal). *Front. Psychol.* **2020**, *11*, 3051. [CrossRef] [PubMed]
- 15. Miralles, P.; Prats, J.; Tatjer, M. Knowledge and perceptions of Spanish and Latin American students of Compulsory Secondary Education about American political independence. Scripta Nova. *EJGSS Electron. J. Geogr. Soc. Sci. XVI* **2012**, *34*, 438.
- 16. Guerrero, C.; Miralles, P. Influence of creative thinking on the formation of historical thought. *Clio. Hist. Teach.* **2017**, *43*, 11–23.
- 17. Pagès, J.; Santisteban, A. Education for citizenship and the teaching of social sciences, geography and history. *Iber. Didact. Soc. Sci. Geogr. Hist.* **2010**, *64*, 8–18.
- 18. Zabala, A.; Arnao, L. How to Learn and Teach Skills; Graó: Barcelona, Spain, 2007; Volume 1, pp. 1–15.
- Miralles, P.; Gómez, C.J. Students' historical thinking and its relationship with competences. In *Educación Histórica para el Siglo* XXI. Epistemological and Methodological Principles; Ibagón, N., Silva, R., Santos, A., Castro, R., Eds.; Univalle/Universidad ICESI: Santiago de Cali, Colombia, 2020; Volume 5, pp. 75–80. [CrossRef]
- 20. Marco, B. Basic Competences: Towards a New Educational Paradigm; Narcea: Madrid, Spain, 2008; Volume 1, pp. 40-45.
- 21. Serrano, J.M.; Pons, R.M. Constructivism today: Constructivist approaches in education. Electron. J. Educ. Res. 2011, 13, 19–27.
- 22. Vera, M. *The Future Social Science Teaching Staff in the Face of New Educational Technologies;* Universitary Association of Teachers of Didactics of Social Sciences: Madrid, Spain, 2004; Volume 1, pp. 2–9.
- 23. Álvarez, J.M.; Trigueros, F.J.; Miralles, P.; Molina, J. Assessment by Competences in Social Sciences: Secondary Students Perception Based on the EPECOCISO Scale. *Sustainability* **2020**, *12*, *56*. [CrossRef]
- 24. Hernández, R.; Fernández, C.; Baptista, P. Research Methodology, 2nd ed.; McGraw Hill: New York, NY, USA, 2008; Volume 1, pp. 11–15.
- 25. Creswell, J.W. A Concise Introduction to Mixed Methods Research; Sage: Thousand Oaks, CA, USA, 2014; Volume 11, pp. 1–5.
- 26. Molina, J.; Miralles, P.; Trigueros, F.J. Assessment in Social Sciences, Geography and History: Students' perception after the application of the EPEGEHI-1 scale. *Educ. XXI* 2007, *17*, 289–312. [CrossRef]
- 27. Hastad, D.N.; Lacy, A.C. *Measurement and Evaluation in Physical Education and Exercise Science*; Al-lyn and Bacon: Boston, MA, USA, 2007; Volume 1, pp. 7–16.
- 28. Charmaz, K. Constructing Grounded Theory, 2nd ed.; Sage: Thousand Oaks, CA, USA, 2013; Volume 1, pp. 4-6.

- 29. Gomez, C.J.; Miralles, P. Social science content and cognitive skills in third cycle examinations in primary education. *Rev. Complut. Educ.* **2013**, 24, 91–121. [CrossRef]
- 30. Gómez, C.J.; Miralles, P. Thinking historically or memorising the past? The evaluation of historical content in compulsory education in Spain. *Rev. Estud. Soc.* 2015, 52, 52–68. [CrossRef]
- Gómez, C.J.; Rodríguez, J.; Miralles, P.; Arias, V.B. Effects of a teacher training program on the motivation and satisfaction of History secondary students. *Rev. Psicodidáct.* 2020, 26, 1–8. [CrossRef]
- Miralles, P.; Molina, J.; Trigueros, F.J. Assessment dialogues in Compulsory Secondary Education: Actors and current state of research in social sciences, geography and history. In *Sentidos e Desafios da Avaliação Educacional*; Universidade Estadual do Oeste do Paraná: Cascavel, Brazil, 2016; Volume 1, pp. 105–138.
- Gómez, C.J.; Miralles, P. Historical skills in compulsory education: Assessment, inquiry based strategies and students' argumentation. New Approaches Educ. Res. 2016, 2, 1–6. [CrossRef]
- 34. Gómez, C.J.; Miralles, P. *The Mirrors of Clio. Uses and Abuses of History in the School Environment*; Sílex: Madrid, Spain, 2017; Volume 1, pp. 9–12.
- 35. Florez, A.; Ballén, M. Authentic assessment: An alternative to enable understanding of learning in the classroom. *UCM Urban Classr. Mag.* **2018**, *111*, 1–6.