

GEOGRAPHY IN THE THIRD CYCLE OF PRIMARY EDUCATION: LEARNING STYLES AND ACADEMIC PERFORMANCE

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I. INTRODUCTION

The teaching of school disciplines seeks to prepare primary school teachers in the teaching of specific contents. “Today, critical thought in the field of social sciences considers this area a basic variable of social events that has an ongoing dialectic relation with society” (Trepát & Comes, 2008:134). As Souto (1999) states, the student should receive our help in learning statistical and verbal cartographic techniques; i.e., the teaching of geography should be supported by solid teaching structures, based on methodological diversity, and should go beyond the use and study of maps which, as Trepát & Comes (2008) point out, has been a constant feature of the geography classroom. Indeed, we consider that a review of the use of cartography in the classroom is an appropriate way of tracking this specific didactic in relation to the epistemological focuses of geographic science.

The recent conceptualization of social science teaching and primary school teacher training has focused on professionals of education who are capable of interpreting and transforming the curriculum, of taking complicated decisions in classroom situations and of making a thorough analysis of the teachers, the pupils, the disciplines and the teaching and learning contexts (Santisteban & Pagès, 2011). Thus, we cannot define the teaching of geography as a set of knowledge based on the concepts proper to the subject; in order to teach geography one has to know geography, but also the learning obstacles facing the students; teaching well supposes a mastery of the content to be taught in the classroom, a well organized conceptual discourse and a proposal of tasks; yet all of this is insufficient if we are not aware of how our students learn, the obstacles that hinder their learning, the barriers between our desire to teach and their interest in the learning proposals (Souto, 1999).

“Teachers have to be sufficiently flexible so as to be able to adapt what is programmed to the dynamics of a given group, and to each and every member of that group”, (Santisteban & Pagès, 2011:36). These authors state that it is necessary to take into account the diverse learning speeds, interests and experiences. To this we would add, and why not the learning style of each student? It seems clear that each student will be more comfortable with a certain strategy, which in cognitive terms, will suppose a certain type of learning; Moreno & Marrón (1995:47) highlight the importance of the methodological innovations in the teaching of geography, “both with regard to the search for a more active type of teaching and the need to adapt the learning process to the character and intellectual evolution of the student”.

We understand that by attending to the learning style we can use rapid diagnosis that is accessible to the teachers in order to ascertain how each student learns and what is the best profile to adopt in our teaching strategies. Taking this as a useful means for improving the educational processes in geography, in this paper we offer a double aim; on the one hand to characterize the learning styles, in the Third Cycle of Primary Education, of students at two schools in the city of Murcia (south-east Spain), and on the other, to analyze the effect of these on academic performance in social sciences and in the area of geographical knowledge.

II. THEORETICAL FRAMEWORK

II.1. Geography in the state curriculum in the Region of Murcia

Primary School teachers use the official curriculum as a guideline for their teaching; they do not merely have to be familiar with it; they also have to have a critical understanding of it, which requires knowledge of the subject and its different areas, as well as a mastery of teaching knowledge.. Only then will the teacher be able to relate contents and learning aims coherently. According to Bolívar (2005:23), these are “interpretative and deliberative curricular capabilities and professional expertise in order to use the knowledge of the subject and the curriculum itself in an active and creative manner”. These competencies should be developed, among other reasons, on account of the inherent changes in the education system such as, for example, those that are occurring in the current transformation of the curriculum in which we are all immersed with the implementation of the new Education Act in Spain, known as the LOMCE, passed in 2013, which aims to enhance the quality of the system.

Our paper addresses the curricular development arising from the LOE, the Spanish Education Act of 2006, under which (as well under the previous Act, the LOGSE of 1990), social sciences in Primary Education are taught within the area of Knowledge of the Natural, Social and Cultural Environment. The Act was established with the aim of helping students to understand the world in which we live and the changes to which it is subject. The legislators justify the interdisciplinary character of the area, linking within the curriculum the contents proper to Geography, History and Natural and Experimental Sciences. However, as Pro & Miralles (2009) state, in the case of the Region of Murcia (CARM, 2007), this integrated approach is watered down as each block of contents goes under the headings of Geography, Sciences or History. This strict classification appears, furthermore, to limit the presence of geography as a discipline and a competence to the first block of contents. However, from

the critical-interpretative approach of the curriculum, (Bolívar, 2005), there is a clear justification for the need to broach the learning of other blocks through the epistemological knowledge proper to geography and thus broaden the recognition of its disciplinary status.

It is a configuration that has undergone considerable modifications, however, when developing the curriculum of the LOMCE (2013), which is specified for the Autonomous Community of Murcia under CARM, 2014. These modifications have led to the disappearance of the Area of Knowledge of the Natural, Social and Cultural Environment, which has been divided into two areas: Natural Sciences and Social Sciences. Leaving aside the search for contents that in terms of competencies appertain to Geography within the Area of Social Sciences or Natural Sciences, and whether the division is suitable or not, it does seem to offer a good starting point in term of an integrated approach to prevent the blocks being linked to specific disciplines of social sciences – traditionally history and geography. The comparative analysis of the LOE and LOMCE by Rodríguez Domenech (2015:415-416) reveals a positive balance in the treatment of geography in Primary School Education, indicating that the division of the area reinforces a significant role of geography in the new Social Sciences subject, and reports that the “geographical contents in the LOMCE are more exact and more geographical». However, Rodríguez Domenech (2015) sees the LOMCE as a chance missed on account of the lack of consideration the legislators gave to the debate and consensus surrounding geographical contents among experts in the subject and impeded its being updated in line with the advances in the area.

II.2. What is learning style? The Alonso, Gallego and Honey model

In this study the style of learning is conceptualized according to the definition by Keefe: «Learning Styles are the cognitive, affective and physiological features that serve as relatively stable indicators of how students perceive, interact and respond to their learning environments» (Alonso, Gallego & Honey, 1999:48). Castro and Guzmán (2005) also refer to the same features and their relative stability as indicators. Starting with the cognitive features, these are defined by four fundamental aspects: dependence-independence on the field, conceptualization and categorization, reflectiveness versus impulsiveness and, lastly, the sensory modalities (Alonso, Gallego & Honey, 1999). As regards the affective features, the same authors indicate that it is generally recognized that motivation and expectations affect learning, i.e., that the decision and the need to learn in order to get a job and experience of merely a preference for a subject can all favor learning. Valdivia (2002) indicates as factors here responsibility, persistence, motivation and the locus of control. Moving on to the physiological features, Hervás (2003) states that the aspects that are based on the biological responses of the workings of the brain according to sex are nutrition and health, the learning biorhythms, depending on the time of day, the need to move about that each person has when studying and, lastly, contextual preferences in terms of optimal light, temperature and sound.

All the above features determine different ways of learning which will behave in a relatively stable way and will be present in the preferred learning style. A student may use various combinations of these and as time goes by will, according to his or her interests and possibilities, settle into a particular style which is quite simply the sum of earlier experiences when confronting knowledge (González Clavero, 2011). Nevertheless, learning

styles can be changed, although this requires effort and appropriate strategies and techniques that are adapted according to the influence of the contextual variables in which the student's learning takes place (Alonso, Gallego & Honey, 1999; González Clavero, 2011).

The model of Alonso, Gallego and Honey (1999) for developing the various learning styles conceives learning as a four-stage cyclical process; "[...] people seem to concentrate more on certain stages of the cycle, so clear preferences for one or another stage become apparent. We have called these preferences "Learning Styles", (Alonso, Gallego & Honey, 1999:108). Honey and Mumford (1988) assigned names to each of the four styles of learning: Active, Reflective, Theoretical and Pragmatic. It would be ideal if everyone were able to experiment, reflect, prepare hypotheses and put into practice in equal measures, i.e. that all the learning styles were applied equally. But some individuals are better at some things than others, so each person will interiorize a certain stage of the learning cycle (Alonso, Gallego & Honey, 1999).

III. EMPIRICAL FRAMEWORK

The aim of this study is to characterize the learning styles of students in the Third cycle of Primary Education in Spain when studying the geographical contents of the curriculum established by the regional authorities in the autonomous community of Murcia. The specific aims of the research are, first, to characterize the profile of the learning styles of the participant students; second, to relate the learning styles of the participant students to their academic performance in Natural, Social and Cultural Environmental Studies. Finally, to determine the relation between learning styles of the participant students and their academic performance in the teaching units devoted to geography.

We used a quantitative, descriptive, comparative-causal design drawing on a quantitative, non experimental or ex-post-facto design (Arnal, Del Rincón & Latorre, 1992; Ramos, 2011); i.e., the researcher has no direct control over the independent variables because these already happened and cannot be intrinsically manipulated and tries to explain the relations of causality by comparing sets of data. The choice of the participants was intentionally non probabilistic, respecting the procedure of the intact group, performed in two lay centers located in the northern part of the city of Murcia, one state and the other semi-private. In both centers all the groups of the Third Cycle of Primary Education took part: a total of 163 students of which 40.5% were in the fifth year and 59.5% in the sixth.

Data collection began with questions regarding personal and academic identification of the students, followed by instructions on the CHAEA-Junior questionnaire (Sotillo Delgado, 2012, 2014), which we used to diagnose learning styles. The grades from each assessment were also collected along with the results for the geography teaching units on the Region of Murcia, Spain and Europe for the fifth year of Primary Education, and those for the geography units on Spain and Europe in the sixth year. Operativization and preparation of data matrices was performed with the IBM-SPSS Statistics (version 19). The analysis techniques used were univariate and bivariate descriptive, Kolmogorov-Smirnov normality tests, non-parametric bivariate correlation (Spearman's rho), and nonparametric tests for two independent samples (Mann Whitney U) and for k independent samples (Kruskal-Wallis H), taking a confidence level of 95% ($\alpha = .05$).

IV. DISCUSSION AND INTERPRETATION OF THE RESULTS

The results do not allow us to establish that the direct score of the learning profile is a good predictor of students' academic performance in geography units. However, they do in Environmental Studies, which showed a statistically significant correlation with Reflective style. We did, nevertheless, detect a certain trend that a greater mastery of the Theoretical learning style was accompanied by a better performance in geography. Our findings are in line with those of Sotillo Delgado (2012) with Primary School students, reports significant differences in students with an Active style, in that the higher the score these students report for this style, the greater the likelihood of their obtaining lower grades. As regards the statistically significant correlation of the average grade in Environmental Studies, this is inverse to the Reflective style of learning of students, i.e., the more Reflective a student is, the poorer his or her academic performance is in the field of Environmental Studies, and vice versa. This gives more meaning to the conclusions of Esteban, Ruiz & Cerezo (1996) and Hervás & Miralles (2004), who highlight the importance of learning styles in predicting academic achievement in social sciences in Secondary School students. Our findings for Primary Education students leads us to share the idea with these authors that the teachers who give this subject need to be aware at all times of their students' learning styles while fostering in those students who prefer the reflective style the other styles so that they can improve their performance in Environmental Studies.

Concerning the hypothesis that distinguishes students' levels of preference (high, medium and low) for each learning style and which considers that these significantly affect their academic performance in Environmental Studies and, in particular, the units on geography, not only do our findings confirm this hypothesis, they also reinforce the value of the reflective learning style as a predictor of academic performance in Primary Education students, since this is the only style in which the students' levels of preference have a statistically significant effect on performance. Indeed, the effect is identical in Environmental Studies and in the units on geography; in particular, it favors students with a medium or low preference for the Reflective style, i.e., such students will perform better academically in the third cycle of Primary Education.

V. CONCLUSIONS

The Reflective and Theoretical styles of learning seem to be predominant in students in the third cycle of primary education. This does not seem strange if we consider that other studies on later stages of education have also detected this predominance; it may be supposed that the current educational system in Spain favors, from Primary Education on, learning environments that ask the student to bring into play abilities that are related to these styles. As Alonso, Gallego and Honey (1999) claim, there is a greater emphasis on reflection and the preparation of hypotheses than on experimenting and application of knowledge. It is therefore worth asking whether students with a high presence of Reflective and Theoretical styles in their learning profiles are actually performing better academically in the area of Environmental Knowledge and knowledge of geography content. Our findings indicate that the configuration of the teaching-learning process in Environmental Knowledge classes

do benefit Theory students, those better at preparing hypotheses, i.e., those that present the specific features of being methodical, logical, objective, critical and structured students. The results vary little, moreover, when considering student performance in the geography units, although the Reflective style is the most predominant learning profile of students in the Third Cycle of Primary Education. Those who present moderate to low preferences for this style perform better in Environmental Knowledge and geography contents.

Studies like ours highlight the need to make teachers aware that today's official curriculum and the evaluation of learning may favor students preferring Reflective and Theoretical styles of learning. According to Gallego (2013), students wishing to pass have to make an effort to develop these styles, while students with high profiles of Active or Pragmatic styles are at high risk of failure. Sharing this author's interest, we seek through this methodology of learning styles to surpass the inflexible focuses of modern education based on the styles mentioned, in order to provide more opportunities to students with other preferences. The teachers should adopt the appropriate behaviors when teaching, but they also need to exhibit behaviors that best adapt to the contents to be taught (Martínez Geijo, 2007). It is important to know which contents allow for varieties of styles and how to do this to enhance students' performance. Gersmehl (2008), when talking about geography as a school subject, states that if teachers conscientiously prepare multimedia experiences, group activities, excursions, simulations and assessment tools that require different learn styles, then all students will benefit.

VI. REFERENCES

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