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CREATIVE SKILLS IN UNDERGRADUATE PRIMARY EDUCATION STUDENTS

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Abstract

The development of creativity is today considered essential in order to achieve quality education and effective learning. In the current social context, the development of creativity in the educational setting has become a necessity, particularly in university education for the purpose of developing students' transversal competences. However, significant progress still has not been made in this respect. For this reason, this study aims to analyse the levels of creativity in university students, more specifically, in undergraduate students enrolled in teacher education courses by assessing their level of development during one semester and to study their evolution. It was designed as a descriptive study of Primary Education students with measures taken at two time points during the academic year using the CREA test. The results obtained showed improved levels of creativity after six months of the academic year, with students progressing from an initial level of medium-low to one of medium-high. In this sense, there appears to be a trend for creativity to increase over this time. It can be assumed that the stage in the students' development, together with the methodology of university learning, the environment and the stimulation it provides could encourage development of creativity. Finally, more studies are deemed necessary in order to ascertain whether, after the intentional and systematic encouragement of creativity in university students, creativity is successfully developed.

Keywords: Transversal competences, creativity, higher education, teacher education, thinking skills.

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1. Introduction

The development of creativity is today considered essential in order to achieve quality education and effective learning. Creativity is understood as a higher-order thinking skill based on complex and post-formal thought that is concerned with the creation of new and valuable ideas (Larraz, 2015). Higher-order thinking skills are those involved in proficient and strategic thought, and these skills comprise critical, creative and metacognitive thinking, also known as deep learning by other authors (Valenzuela, 2008).

Creativity has also been defined as a transversal competence. Transversal competences were introduced into the European Higher Education Space (EHEA) as an element of the curriculum to be taken into account in order to achieve optimum development of knowledge from multiple perspectives (know, do, live together, be) (Delors, 1996). Transversal competences, also known as general competences, are an essential part of the professional and academic profile of most qualifications and comprise general aspects of knowledge, abilities, skills and capacities that any graduate must have before joining the workforce. They also include a set of cognitive and metacognitive skills, instrumental knowledge and attitudes that are of great value for the knowledge society and for life-long learning (Sánchez-Elvira, 2008). These competences were defined by the National Agency for Quality Assessment and Accreditation of Spain (ANECA) based on the Tuning project (González & Wagenaar, 2003), and these were systematised into three types: instrumental, personal and systemic competences (Larraz, Vázquez, & Liesa, 2017). Creativity comes under systemic competences.

Spain is a country where educational practices have traditionally been conducted according to a technological paradigm (García, Díaz, & Ubago, 2018) in which traditional teaching and learning models persist (Esteve, 2008; Elisondo, Donolo, & Rinaudo, 2008). Consequently, little development of creativity is observed among the didactic methods used and their results. In spite of this, there are already a number of contexts in which recommendations are beginning to be made in an endeavour to integrate creativity into education, many of which have had important results. It is therefore essential that gateways should be found for creativity in educational contexts.

In this respect, it becomes necessary to develop creativity in the educational sphere, more specifically in the field of university education. Existing studies related to creativity in university education highlight the little encouragement given to creativity and few significant interventions along those lines (Esteve, 2008). Sin embargo, theoretical advances regarding the incidence of motivational and emotional factors in learning have not yet been applied to university classrooms, which bears a close relationship to the scarce development of creativity (Elisondo, Donolo, & Rinaudo, 2008). In this sense, the implementation of active didactic methodologies to foster the development of creativity in the university setting remains a challenge.

This study aims to investigate the development of creativity among university students for the purpose of proposing methodological intervention strategies in the classroom and to explicitly and intentionally encourage creativity at university. In this regard, it would be of interest to ascertain the extent to which didactic strategies based on the development of creativity are being adequately created and, more specifically, the manner in which they are being implemented in the teaching and learning processes of the different subjects.

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2. Problem Statement

Active methodologies are currently being used in university education; however, there is little available research on its implementation and effectiveness. In this sense, creativity is a one of the skills to be promoted and its effectiveness assessed in the field of university education.

3. Research Questions

This study analyses levels of creativity in undergraduate Primary Education students to evaluate the degree to which it develops over time and to study its evolution.

4. Purpose of the Study

The two aims of this study are described below:

- To analyse the state of creativity in undergraduate Primary Education students during their initial years.
- To evaluate the evolution of creativity in undergraduate Primary Education students during the course of one semester.

5. Research Methods

A descriptive study was designed to analyse and evaluate the creative skills at two time points on a sample of 75 undergraduate Primary Education students. This involved an assessment of their creativity at the start and end of the semester by means of the CREA test devised by Corbalán, Martínez and Donolo (2014), a standard instrument to evaluate creativity.

The methodology on which this study is based is qualitatively focused, meaning that analysis was performed on descriptive data in relation to the evolution of creativity at two time points of observation, at the start and end of the semester in order to assess their overall evolution within this period.

5.1. Participants

The study was conducted at the Faculty of Education of the University of Zaragoza on undergraduate Primary Education students taking the subject of Psychology of Development, a compulsory subject with a weighting of six ECTS, in the 2018–2019 academic year. Sampling was intentional and the intervention was carried out on the two groups enrolled in the subject, making a total of 75 students. The average age of the participants was 18.7 years with a standard deviation of 1.3 years. 69.7 % were women and 30.3% men. Participation in relation to class attendance was 70%, whereas participation in the questionnaire was 75%.

5.2. Instruments

The CREA test by Corbalán et al. (2014) was used, consisting of an instrument designed to assess creativity in children, adolescents and adults in the general Spanish population. It consists of an image about which questions are asked.

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A feature of this test is the distribution of general creativity scores into three levels of interpretation – low, medium and high – levels of creativity. Specifically, for the teaching population, there are particular criteria and rules for interpretation, which will be used to interpret the data obtained in this study.

- High levels of creativity (H): outstanding positive traits in students are excellent adherence to the curriculum and interest in the subject matter, abundance of cognitive resources, flexibility for change, broad interests, initiative and curiosity. Negative traits include difficulty in socialising, poor adaptation to the education environment, loneliness and eccentricity, boredom or disinterest, rebelliousness or provocation, inhibition and an overdeveloped critical sense.
- Medium levels of creativity (M): outstanding positive traits in students are ease of adaptation, cooperation with teaching staff, real possibility of creative development, good adherence to the curriculum and conceptual flexibility. Negative traits include limited resources for innovation, conceptual rigidity, lack of critical sense and possible tendency for gregariousness.
- Low levels of creativity (L): outstanding positive traits are low levels of tension in the classroom and effectiveness in structured or habitual environments. Negative traits could include inhibitions, developmental and communication disorders, and limited experiences.

6. Findings

The data was analysed according to the general average initial and final level of creativity, and subsequently according to the levels of creativity observed, distributed into three levels: Low (L: scores of 1–25); Medium (M: scores of 26–74); and High (H: scores of 75–99).

In general terms, development of creativity was observed. From an initial medium-low creativity score (percentile rank of 38), a final score with values slightly above average was observed, with a medium score (percentile rank of 62). The initial level of creativity development in the university students was medium-low. After a term of about six months, there was an increase in creativity development to a medium-high level (see Table 01).

Table 01. General creativity score between initial and final CREA testing

N	Initial Score	Final Score	Difference
75	38	62	22

A breakdown of the differences observed in levels of creativity show that 44 students improved their score over their initial value, i.e. more than half of participants (58.7%) improved their score.

Table 2 shows the improvements in those students' scores in greater detail. As can be seen, 24% of the students improved from a low score (L) to a medium score (M); 22.7% improved from a medium score to a high score (H) and, finally, 12% improved from a low score (B) to a high score (H). A total of 31 students, approximately half, did not improve their scores, of whom 9% maintained high scores, 15.7% medium scores and 10% low scores.

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Table 02. Development of creativity level

0 (same)	1 (L-M)	2 (M-H)	3 (L-H)
N=31 (41,3%) H-H= 8 (10,7%); M-M= 14 (18,7%); L-L= 9 (12%)	N= 18 (24%)	N= 17 (22,7%)	N= 9 (12%)

If a summation of the percentages of each of the levels observed in the students is performed (see Table 2), those with a high level of creativity (H) account for approximately half of the students evaluated (45.4%), of whom 34.6% improved from medium or low levels to high levels, or approximately one third. In contrast, students with a medium level of creativity (M) also accounted for approximately half of the total, some 42.7%), of whom 24% improved from a low score to a medium score, while 18.7% remained constant at medium levels of creativity. Low levels of creativity (L) were present in 12% of the study population. From the initial sample in which a total of 48% scored low, 36% improved their levels of creativity, which equates to approximately one third of the studies population.

7. Conclusion

Development of creativity was a patent reality in the group during the semester in which the study was conducted. In this sense, there appears to be a trend for creativity to increase over this time. It can be assumed that the stage in the students' development, together with the methodology of university learning, the environment and the stimulation it provides could encourage development of creativity.

Specifically, the results show an increase in the average creativity score of the group from an initial percentile rank of 38 to a final creativity level of 63, i.e. there was an improvement from a medium-low level to a medium-high level. It was also observed that the development of creativity also meant an improvement for more than half the participants (58.7%), which is a considerable proportion. Of these participants, the improvement observed was mostly in high levels of creativity, accounting for 45.4% of the studied population, with improvement in 34.7% of participants. The remainder of the improvement was observed in the medium scores of 24% of the students from low levels, with 42.7% of students obtaining medium levels of creativity. Finally, 12% of the students maintained their low level of creativity, against 48% initially, meaning that 36% of the participants improved from low levels to medium and high levels of creativity, a considerable proportion to highlight, given the difference observed in more than one third of the students.

Therefore, more than half the students obtained a higher creativity score (58.7%), from low to high levels (12%), from low to medium levels (24%) and from medium to high levels (22.6%), making a total of 45.3% of the students with high levels, 42.7% with medium levels and 12% with low levels. Desirable aspects are observed to be the existence of students with high and medium levels of creativity – given that this will allow greater adaptation and adherence to the curriculum, ease of adaptation and collaboration with teaching staff – in addition to a greater real possibility of creative development, abundance of cognitive resources, conceptual flexibility, broad interests, initiative and curiosity (Corbalán et al., 2014), and this is the highest percentage in the studied sample (88%) after a period of time.

The results obtained are in line with the working recommendations studied in this setting and demonstrate that university education can provide a good environment and opportunity for the development of creativity in students as long as the relevant teaching practices are created (de la Torre & Violant, n.d.; Torre, 2009). By the same token, university students should be expected to maintain or improve their existing level of creativity, given that the level of creativity they initially bring from previous levels of education is good (Esteve, 2008).

Finally, more studies are needed that allow verification of whether after the intentional and systematic development of creativity in undergraduate Primary Education students, the development of creativity is achieved as the expected result, as indicated on studies on the subject.

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