

The impact of arts employment on creativity and academic achievement in Morocco's middle schools: A descriptive study

Omar El Blidi¹ and Khadija El Blidi²

¹Laboratory of cultural industry, Faculty of letters and human sciences, Mohamed 1st University, Oujda, Morocco

²Educational technologies department, Faculty of educational sciences, Mohamed V University, Rabat, Morocco

Copyright © 2023 ISSR Journals. This is an open access article distributed under the *Creative Commons Attribution License*, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT: This research focuses on the question of whether arts use in education can be shown to increase levels of creativity and affect the academic achievement in middle school of low socioeconomic backgrounds.

Multi-method approach was chosen for the present study. The operationalization of creativity was based on its definition as a cognitive skill but took two different perspectives: one of creativity as a product and the other of creativity as a process. The methods used to explore the problematic were quantitative, in the form of standardized creativity testing and grade point averages analyzing, combined with descriptive observation. The use of these different procedures contributes to scientific validity.

Results show a positive correlation between the artistic program of research and the improvement of the cognitive skill creativity in the Moroccan middle school. However, quantitative creativity testing results left some questions on validity and reliability, and the grade points analysis has proven almost no relationship between arts use in education and academic achievement. Creativity did demonstrate to be more methodically understood when examined in the context of the creative process, and the quantitative testing could be combined to a qualitative study ensuring the validity of research in this case. Finally, the present research led to numerous discussion points and recommendation for future research.

KEYWORDS: Creativity, art, education, academic achievement, middle school.

INTRODUCTION

Nowadays, most of educational systems of the world, especially at the middle level, are still constructed on models of the nineteenth century.

These systems as well as ancient teaching approaches are now absolutely outdated in an extremely changing world, and this is why change is indispensable and a new vision is needed, particularly for middle education in the 21st century.

This new orientation of the intentions of middle education involves pedagogical innovations and, consequently, a rebirth of learning subjects and of teachers and school training programs in which arts can play a key role assuring this process of change.

In November 1999, an international appeal for the promotion of creativity at school was introduced by the UNESCO (United Nations Educational, Scientific and Cultural Organization) on the occasion of the thirtieth session of the organization's General Conference. This appeal was launched in the spirit of the 1996 international report recognized as the "Delors Report" entitled "*Learning: the treasure within*" (UNESCO, 1996). This report emphasized the critical need to reform and support the school systems, giving distinct consideration to creativity and arts.

This report defines four pillars of education:

- Learning to know
- Learning to do
- Learning to live together
- Learning to be

The *learning to see* through visual arts, the learning to hear through music, to move through dance or to live through drama are included in this last pillar which is a focus of this research verifying that art should be given more importance in middle schools than is commonly the case today.

As emphasized by Ken Robinson, organizations everywhere are struggling to fix a problem that originates in schools and universities; that means the arts use in education should also be tackled through curriculum and pedagogy (Robinson, 2017). Therefore, it is crucial to better determine what works and what doesn't work in this field in order to provide fact on what the impact is on students (creativity, academic achievements, etc.) and what the conditions required for successful use.

Additionally, Educational research has revealed that students' personal well-being has an important impact on their academic achievements. In this research, our aim is to study this relationship: arts in education- creativity and its impact on achievement.

LITERATURE REVIEW

For several years, creativity has been included in curriculum debates according to the educational policy tendencies of the day, which have varied greatly over this period.

In young children, creativity has been a topic of attention in different fields, for example, western pedagogical views and education were based on a child-centered and discovery-based approach. This permitted the option of creative expression, usually expressed through the arts, as such art education was at this time considered an essential forum for creative expression (Lanier, 1955). through the following fifty years, the tendency shifted and the weight moved away from creativity as expression and towards a more knowledge-based pedagogical approach (Craft, 2003). In recent times, however, this trend looks to be instable again.

In Morocco, the word creativity is indicated once in the whole 2013 analytical report, considered as student's attribute and a consequence of the change in the teacher's training (report, December 2014). This means that creativity is still being viewed as a quality or trait, rather than as a kind of intelligence, and as such gets less value than -for example- mathematics, sport abilities or language skills. In addition, arts education in the Netherlands (as well as in most of Europe) still does not include creativity as a core objective but rather classifies it under the heading 'personal development' (Greven & Letschert, 2006).

CREATIVITY IN ART AND SCIENCES

Creative students find success in the lessons taught through arts because of the apparent deductive nature of the course (Court, 1998). Kersting (Kersting, 2003) approved that there are possible resemblances and differences in creativity as it linked to individuals in the sciences and arts:

"Science has to be constrained to scientific process, but there is a lot less constraint on artists. Many artists come from more chaotic environments, which prepares them to create with less structure" (p. 40).

Gardner (Gardner, 1999) appeared to defend this concept of domain specific creativity as well:

"People are creative when they can solve problems, create products, or raise issues in a domain in a way that is initially novel, but is eventually accepted in one or more cultural settings" (p. 116).

The curricular goals of general creative and critical thinking along with problem solving, and creating products within a certain social construct are demonstrated in music education as well. In fact, Webster developed a model of creative thinking specifically for music which consisted of the following factors:

- Musical Extensiveness: The time in seconds that involved in a musical response.
- Musical Flexibility: The extent a person can move freely between the extremes of the parameters of high/low, soft/loud, and fast/slow.
- Musical Originality: The degree of musical manipulation a person can accomplish in a unique fashion.
- Musical Syntax: The extent a person can manipulate music in a logical and "inherently musical" manner with regard to the entire response (Webster, 1987).

Many researchers considered the crucial development of both creative thinking and aptitude with regard to music needed to occur at a young age. This early experience in music aided in children's musical and intellectual growth (Henry, 1996).

PURPOSE OF STUDY

The research questions are:

- Can creativity be improved through arts in socioeconomically disadvantaged middle school?
- Can this creativity (in case developed by arts use) help adolescents to improve their academic achievement levels?

METHOD

Seeing the difficulty of the concept of creativity, both in its meaning and the inconclusive results gotten by much of the earlier empirical studies done in this area, this research rely on multi-method approach. By adding conclusions that can be reached through a deductive quantitative method with the conclusions that can be achieved through the descriptive method, a more comprehensive analysis is expected to be attained. Additionally, the complementary purposes of these two research approaches will aid confirm reliability and validity through triangulation by being careful to employing diverse descriptions and approaches to creativity. Two approaches have been selected to be used for this research, both founded on the central evidence that creativity can be defined as a cognitive skill parallel to divergent thinking and perceptible through four elementary factors: fluency, originality, elaboration and flexibility (Guilford, 1968). The first approach to be operationalized for application is that of creativity as a process. The second approach to apply is that of creativity as a product.

Therefore, a variety of tools must be used to gather data from students. The quantitative instruments included Torrance test and academic achievement analysis (students' grades).

PARTICIPANTS RESEARCH PROCESS AND PARTICIPANTS' GROUPS

The specific group of participants to be focused on during this research consists of less than half of "Al Irfane" (middle school) students (the maximum number being over 365), apparently due to the fact that this study took place near to the end of the school year (March through June).

The program is built on the basis of several arts mainly, but not limited to: dance, drama, arts plastic, music...

The inclusion of certain art forms and the exclusion of others could be explained basing on different literature reviews. For what counts as 'art' is too often taken for granted in writing about education. Literature, film, and different types of media can all lay claim to being considered 'arts'. Languages as a subject can be viewed differently as a humanities or arts subject (Abbs, 1983). A key practical factor in selecting subjects to discuss and analyze in this research is of course the national curriculum and the theoretical foundations. But even here the choice is not straightforward: drama is embedded within the English, French and Arabic orders; plastic art is referred to as 'art and design' but design also appears in technology; dance appears within physical education.

For example, theories of representation, form, expression and intuition associated with writers like Clive Bell, Robin Collingwood, Leo Tolstoy and Benedetto Croce can be interpreted as attempts to encapsulate precisely what art is.

The Gulbenkian report (Gulbenkian, 1982) identified the arts as dance, drama, music, visual arts and literature. The Ofsted publication 'The Arts Inspected' (1998) chose art, dance, drama and music for their report;

These four elements were chosen to be studied in this research because founded as key arts in the majority of the publication of the education field.

The program covered a period of 12 weeks, and each week is dedicated to a single activity (except the last four weeks dedicated to two activities only)

Each week is divided into one hour of preparation for each subgroup dependently on their time to prepare the activities of the week, followed by a comprehensive 3-hour session (Friday afternoon from 15h to 18h) for all subgroups (together make the experimental group) to finalize and present activity.

Therefore, about 150 adolescents have already participated in the full range of activities / programs for this school year, but the analysis of this study excluded a large number of students according to the criteria of presence (during all activities), to participation by completing correctly surveys and tests and considering the received data from the establishment administration.

The research group (to analyze) consists of two equals assemblies: The Control Group (CG: 78) and the Experimental Group (EG: 78), each one, therefore, is made up of a mix of first, second and third graders (35 first graders, 33 second graders and 10 third graders), age between eleven and seventeen.

The experimental group is composed by students who participated voluntarily in all program's steps, and the control one is chosen from students who never participated in activities and seem to have relatively the same socioeconomic backgrounds, the same gender and age, and the same level of academic achievement.

All participants are Moroccans of modest to low economic means. All of the them spoke French as a second language, have an average academic level, but none of the participants had ever taken part in an arts class program (outside the middle school) before this experience.

FINDINGS

The results of the test were constructed according to the standard scoring system provided in the TTCT Scoring Guide (Torrance, et al., 2008). The raw data of the scoring results were entered into numeric spreadsheet. Results are presented as group totals. The reason for this is simply that although individual scores are important and can provide information to be used in future research, they have no direct relevance on the current research first question. The group totals for the both administered tests (pre-ETAP ATTCT and post-ETAP ATTCT) are presented in Graph as follow:

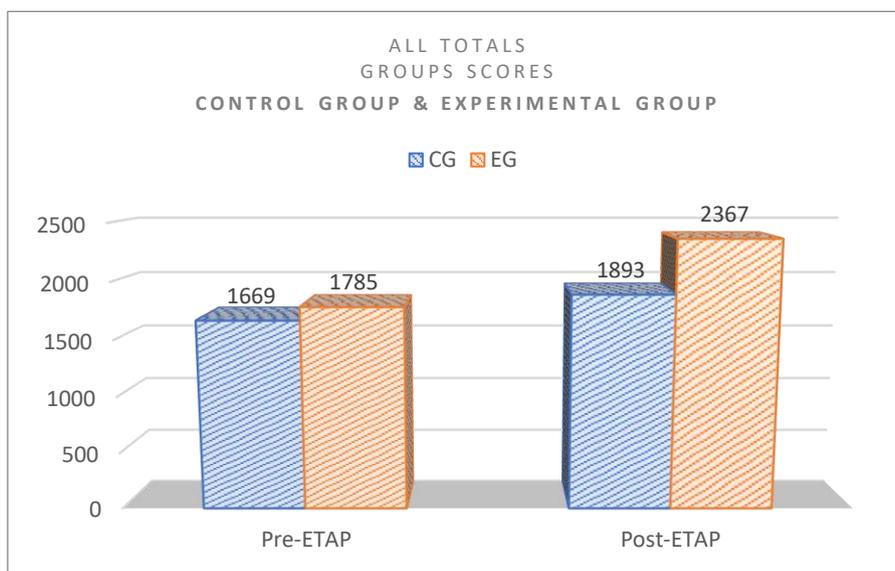


Fig. 1. ALL Totals Group Scores of adapted Torrance Tests

The above show an overall Experimental group (EG) improvement of creativity of 582 points (out of a possible total of 4758 points) or 12.23%, but also a Control Group (CG) improvement of creativity of 224 or 4.70%. Although it is not an overwhelming improvement presenting by the difference value 7.53% (12.23-4.70), it does indicate a marginal development of creativity levels after the Education Through Arts Program (ETAP). The scores were supplementary broken down into two sets, one for the creative abilities, and one for the creative strengths.

The first set of scores to be treated is on creative abilities. Fluency, originality and elaboration all score roughly the same. Points are given out of a possible score per ability and calculated for each group (CG & EG) as totals and percentages (multiplied by the number of students in each group = 78). Abstractness of title and resistance of premature closure are also scored similarly. A possible group total of creative abilities is 4056 points).

Graph 2 shows the total group scores for creative abilities for both CG and EG before and after ETAP:

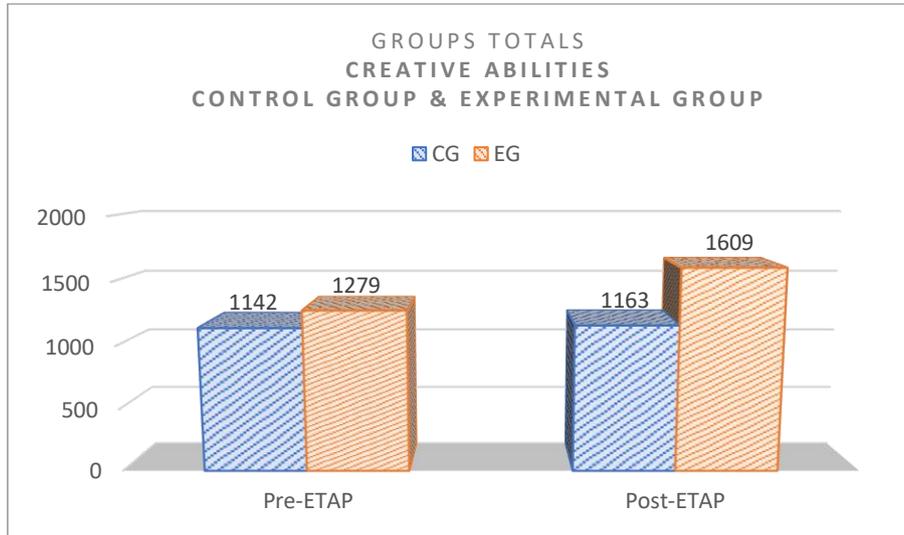


Fig. 2. Totals Groups Scores of Creative Abilities

As can be seen, the difference between the two tests, before and after the art activities, show a slight overall improvement in creative abilities (330 points or 8.13% for EG and 22 points or 0.51% for CG).

These results were also broken down per creative ability. Graph 3 shows raw scores of fluency. Scores improved by 71 points (or 5.69%) for EG and decreased by 28 points (or -2.24%) for CG as follow:

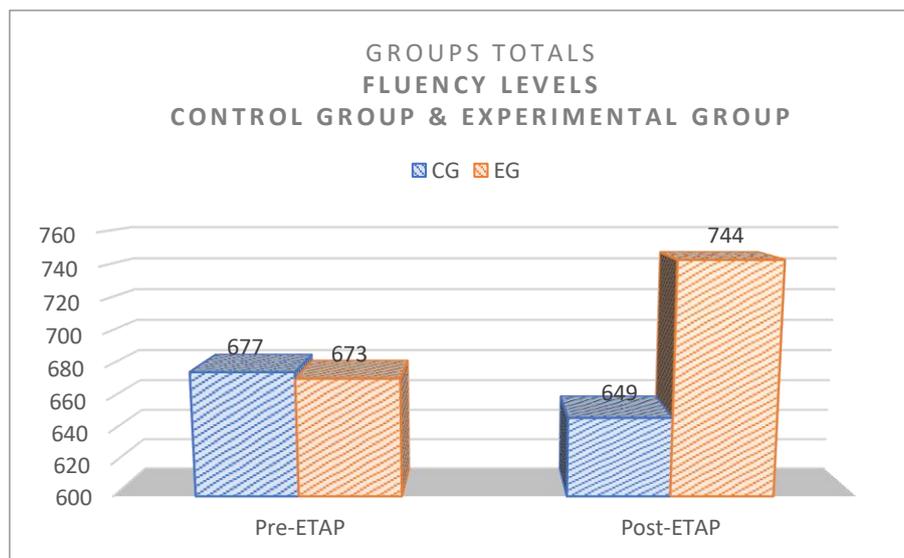


Fig. 3. Totals Groups Scores of Fluency Levels

Figure 4 shows originality scores between the two groups CG and EG before and after ETAP. Originality scored relatively higher in EG results, 71 points (or 5.69%) and slightly lower in CG results, 28 points (or -2.24%).

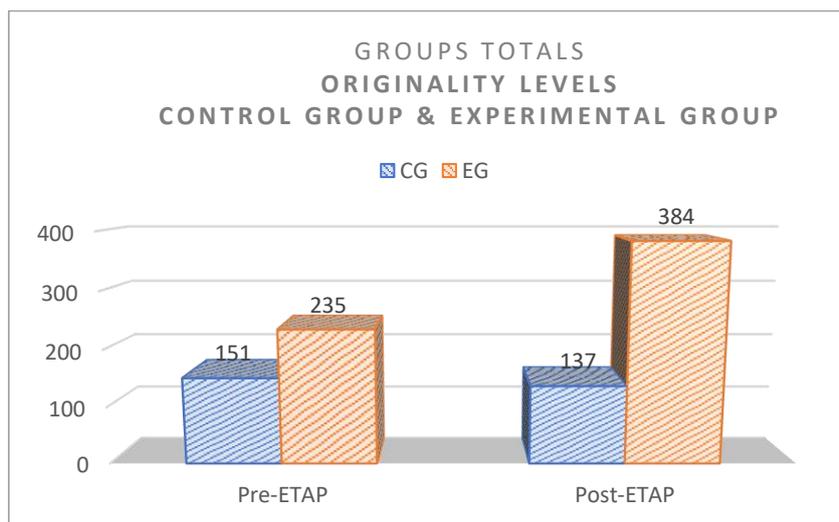


Fig. 4. Totals Groups Scores of Originality Levels

Results of elaboration scores are presented on Graph 5. Elaboration scored slightly higher for both groups. The scores of EG differed 45 points, or 3.60% while CG differed 22 points, or 1.76%.

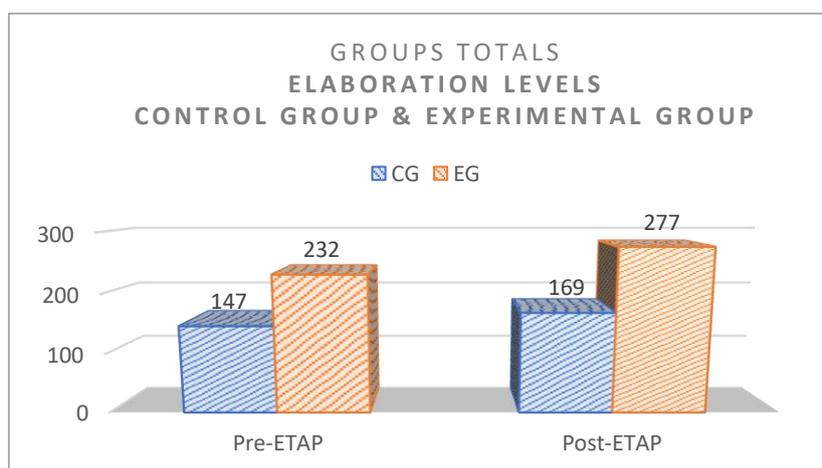


Fig. 5. Totals Groups Scores of Elaboration Levels

Figure 6 shows graphically the scores for abstractness of titles. As can be seen, these scores are quite higher for both groups tests. The scores improved by 17 points (10.90%) and by 44 points (28.20%) between pre-ETAP and post-ETAP tests, which translates to a 17.30% difference in favor of CG ($10.90 - 28.20 = -17.30$).

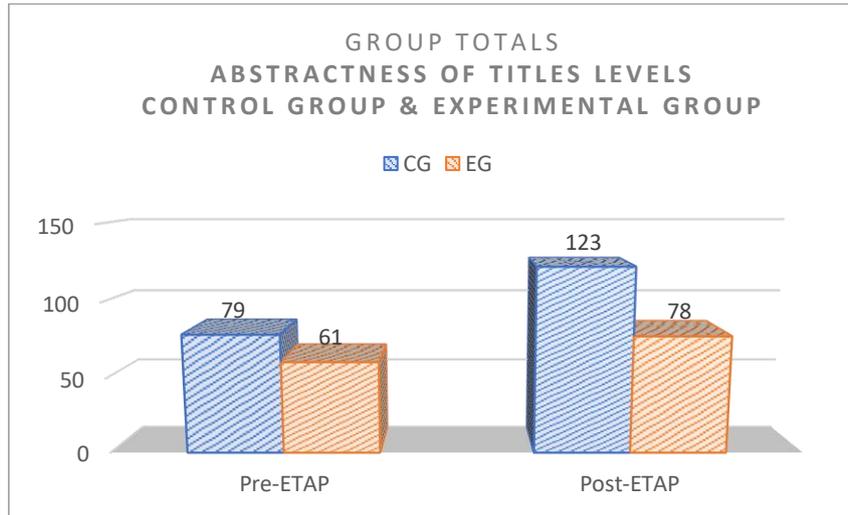


Fig. 6. Totals Groups Scores of Abstractness of Titles Levels

Finally, resistance to premature closure scores, reproduced in Graph 7, improved for EG by 48 points (30.76%) and remained relatively the same between the two tests for CG, -3 points (or -1.92%).

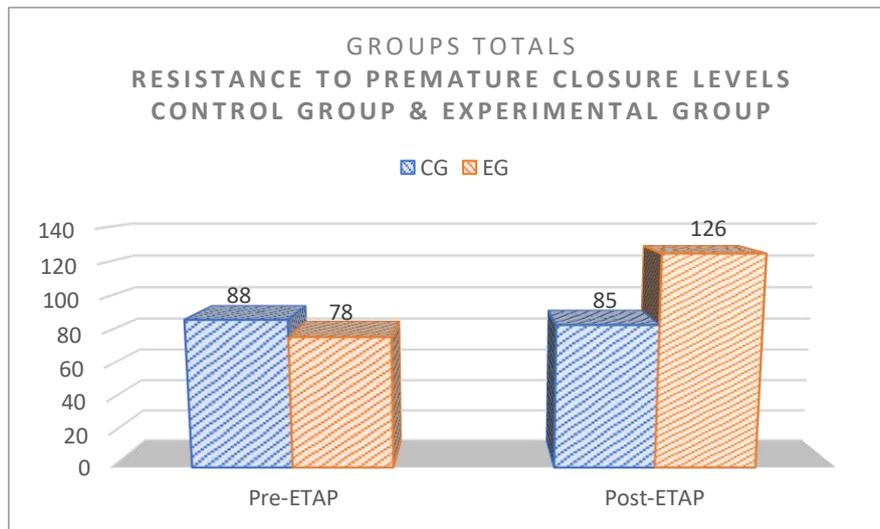


Fig. 7. Totals Groups Scores of Resistance to Premature Closure Levels

Creative strengths are counted differently than creative abilities. Evidence of one or two illustrations of a creative strength indicator within the same response gets one point, three or more instances within a single response scores two points.

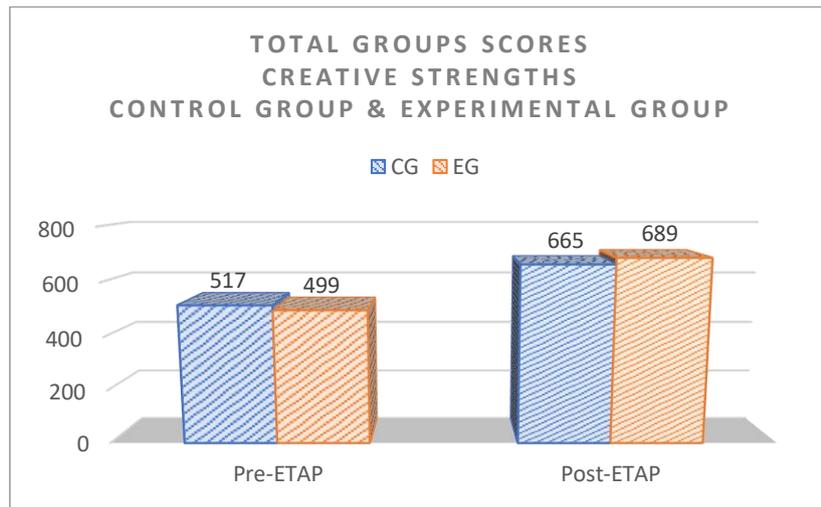


Fig. 8. Totals Groups Scores of Creative Strengths

As shown in this 8th figure, here too, a slight increase in creative strengths is revealed between pre-ETAP test taken at the beginning of the research period, and post-ETAP test, taken at the end. Total EG points increased by 190 or 27.06% against 148 or 21.05% for CG.

The detailed creative strengths scores are shown by 13 sets in below (graphs 9). Since creative strengths scored extremely low in some sets, percentages included with these scores are consequently lower.

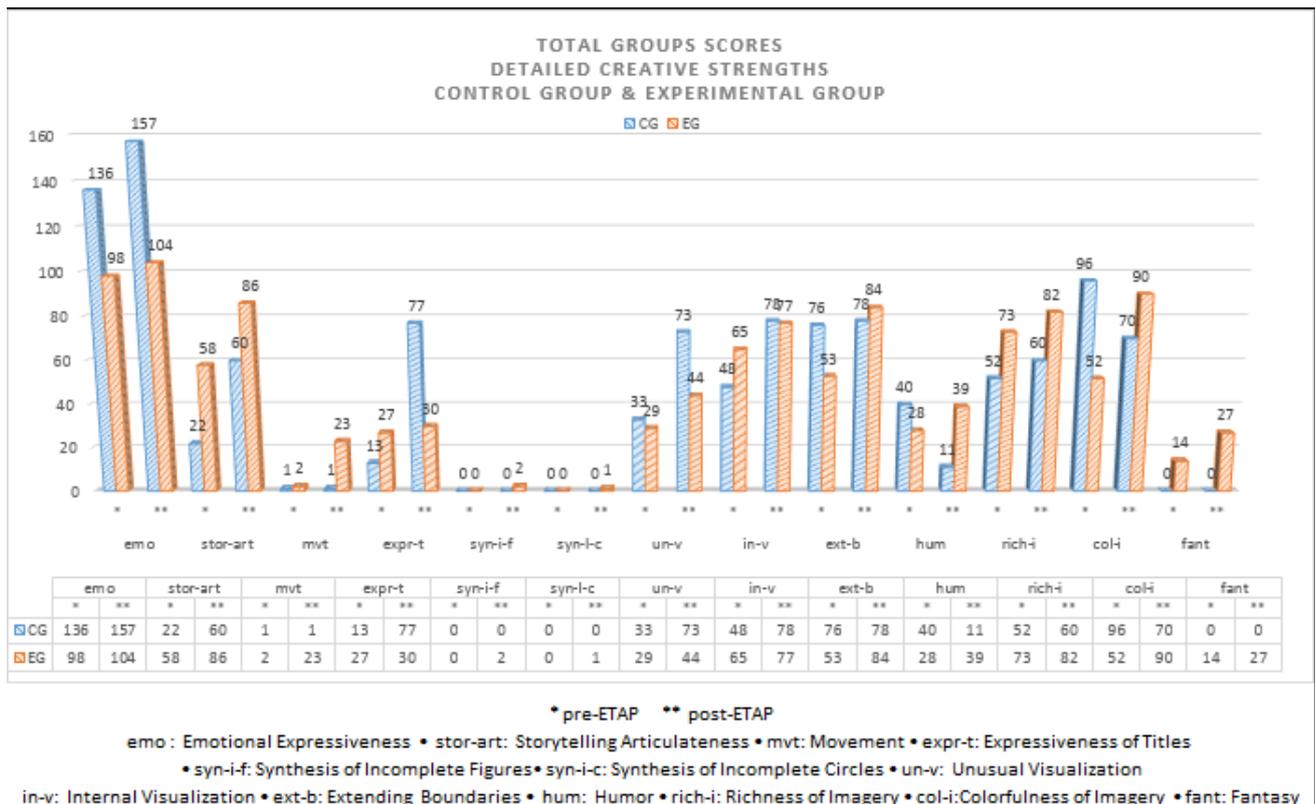


Fig. 9. Totals Groups Scores of Detailed Creative Strengths

In this last figure (9) it can be seen that emotional expressiveness increased by 6 points between the two tests for EG against 21 points for CG. 28 points in storytelling articulateness were recorded in EG results while CG results shown 38 points of positive difference.

Movement or action – shows in EG an increase of 22 points, and maintained in value of one for CG, while expressiveness of titles released 4 positive points between tests against a high increase of CG results of 64 points.

Synthesis of incomplete figures and synthesis of line of circles both went up a point and two points for EG and maintained 0 value between the tests for the control group.

there can be seen that unusual visualization increased by 40 points and 15 points successively by EG and CG. The graph also shows an increase of 30 points (EG) and 12 points (CG) for internal visualization.

The creative strength extending or breaking boundaries grew by 2 points in experimental group results against an increase of 31 points for the second group, while the increase of EG humor (11 points) was recorded against the decrease of CG humor (-29 points).

The richness of imagery shown relatively the same increase between EG (9 points) and CG (8 points), while the graph shows an increase of 9 points (EG) face to a drop from 96 point to 70 points (-26 points in CG results) for colorfulness of Imagery between the two tests. Finally, it can be seen that fantasy improved by 13 points from pre-ETAP to post-ETAP tests in EG against CG scores, in which, no points were counted for use of humor in either the first or the last tests.

The TTCT results show a slight overall improvement in EG creativity levels at the end of the ETAP series. However, when broken down by ability, specific improvements were only found to be notable in the creative ability of fluency and originality. All other creative abilities reflected a status of slight increase or drop relatively to CG scores.

Total scores for EG creative strength also reflect a marginal increase. When broken down, increases were found all of the 13 individual strengths but more importantly in in storytelling articulateness, movement or action, extending and breaking boundaries and colorfulness of imagery, but specifically in humor and fantasy. Other strengths also remained status slightly increased.

While the directly above scores show a marginal increase in global creativity as evaluated in the results of the creative performance (to assess creativity as product), it must be noted that there are some questions as to the validity reliability of these results viewing the higher improvements of creative abilities and strength specifically in the control group as abstractness of titles, expressiveness of titles and unusual visualization with absence of humor and fantasy.

Although the TTCT figural test is theoretically designed for use by ages kindergarten and above. According to the directions manual, if the test is administered according to the instructions and carefully treated, the test scores should be reliable and valid. However, some of the creative strengths (such as synthesis of incomplete lines or circles) tested appeared too far above the developmental levels of this age category, giving the rise to the question as to whether these strengths were in this case reliably represented and tested by the TTCT (or ATTCT in the research case). Also, despite following instructions, the real life circumstances of the test conditions proved to be to a certain degree more difficult to 'control' when administered. Pre-ETAP ATTCT administration seemed to go practically well, in observation, this can possibly be attributed to the newness of test and researcher's instructions. The students completed the test answering in an arranged manner and their motivation and concentration was high. During the administration of last test (after ETAP), however, these conditions were noticeably different: the students were familiar with the test and its expectations; this affected the motivation levels and listening skills of some of the students especially from control group (who could not benefit from artistic activities of ETAP series). They did not actively listen to the researcher's instructions, producing unsuitable answers in some cases. Lower motivation results impatience and affected elaboration levels. From another side, the experimental group students had been working in a group setting for 12 weeks, and to get them to all suddenly work as individuals (during the second ATTCT administration) evidenced difficult. Some of the students were naming their response out loud, or sharing responses to have better scores, which contaminated originality. All this gives rise to the question of validity of the answers of the second test which was -contrarily to expected- positive and confirmed the relationship between the arts and the development of creativity among this age category. As a result of these several problems, it is supposed that the results of the ATTCT should be not considered a completely valid or reliable reflection of the students' true abilities. However, the results of the ATTCT do show an overall improvement in creativity at the end of 12 week arts education product.

In point of fact, seeing the (negative) difference in conditions surrounding the administration of the post-ETAP test, it could be conditional that the scores – had external factors been equal to those surrounding the conditions of the first test – would be higher.

The problems with the results of the TTCT highlight the recognized complexity of creativity and its assessment, and gives more credibility to the definition of creativity as process, reliant on multitude of variable factors. It also emphasizes the requirement for triangulation within this research through multiple methodologies, in order to come to a reliable and valid conclusion in response to the first research question. For all these reasons, the qualitative method was used in this research to balance the questions of reliability in the ATTCT results, through their own independently reached conclusions.

STUDENTS' ACADEMIC ACHIEVEMENT ANALYSIS

The data collected permitted various individual and group comparisons to be made. However, at the time that consent to take part in the research was acquired at the outset of the study, participants were guaranteed that none of the results would be reported by personal information.

The data were entered into computer files be analyzed and group comparisons were made between those students in the research activities program and those students in the control conditions.

Comparisons were done using simple descriptive statistics and cross-tabulations due to the master research deadline (t-tests and more developed analysis statistical methods should be used in another research next step).

The grades database does not figure in appendices, due to the agreement drawn up between the school administration and researcher.

Analysis was done by levels (years) by subjects to highlight any notable change observed between the first (in early March) and the last (in late May) exams, grade point averages were calculated, then, presented in tables and graphs to facilitate the task, as follow:

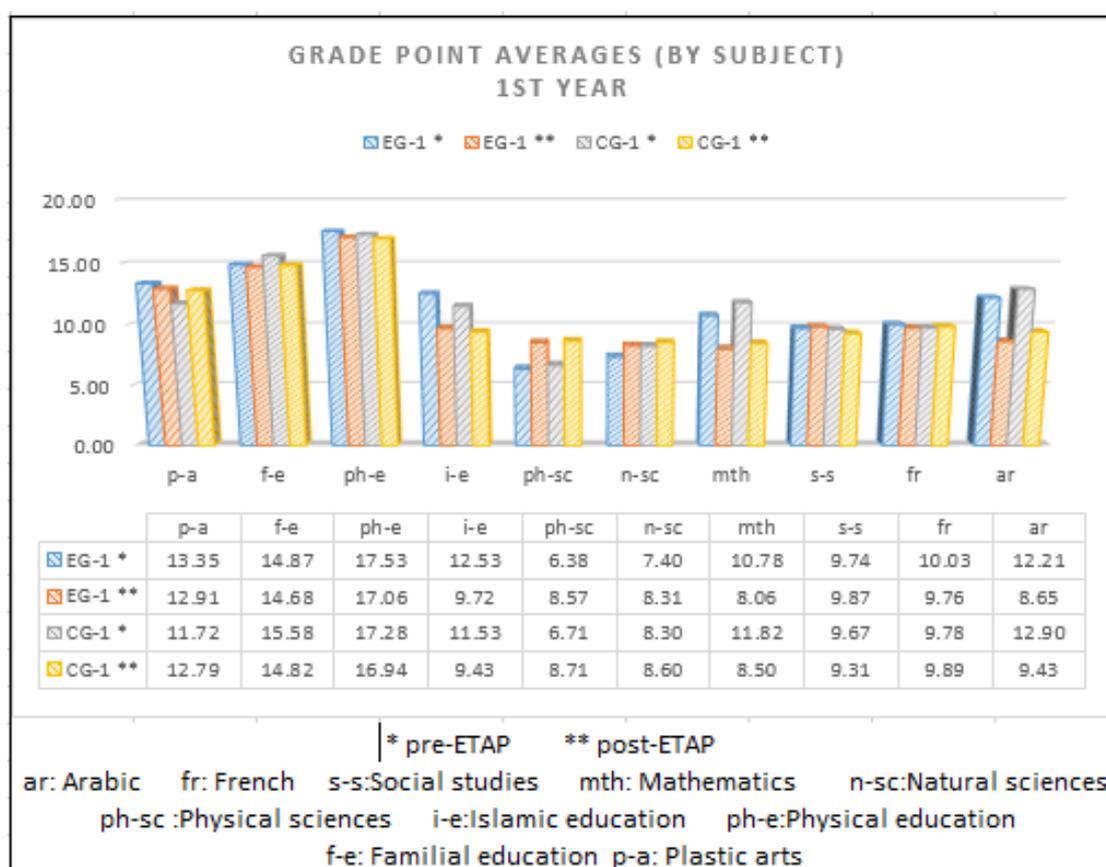


Fig. 10. Grade Point Averages of 1st Year Students

33 students of the first year has benefited from the artistic program, many of them showed good creative strengths and respectable artistic abilities, but unlike this, it is seen that these activities have almost no change in terms of success and academic performance, except a slight increase in the natural sciences. This slight increase - not observed in the control group- cannot, by itself, reflect an effect of using the arts for purely academic achievement goal.

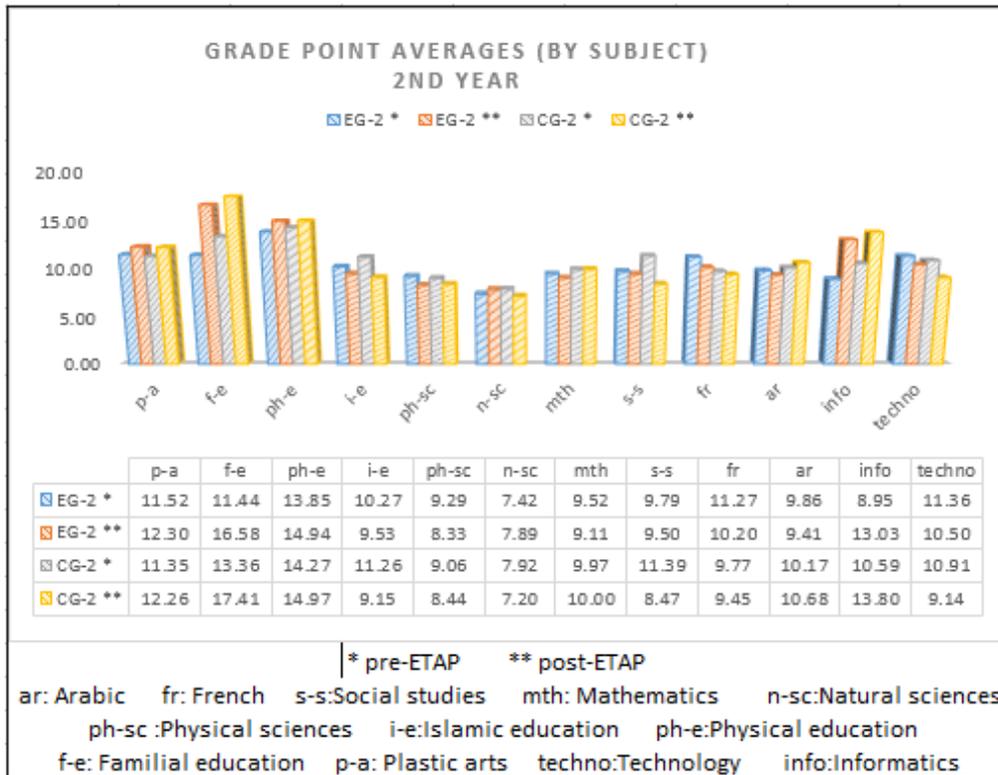


Fig. 11. Grade Point Averages of 2nd Year Students

The grade level that has benefited most from the artistic program of research was that of the second year (with 35 students), that said, nothing was observed as a particular change except increasing the grades of natural sciences, which raises the question of the relationship between artistic program and this matter, and why exactly this matter, but the answer requires at least other correlation statistical analyzes that the duration for the present study and the missing information on this matter and the teacher ways does not allow.

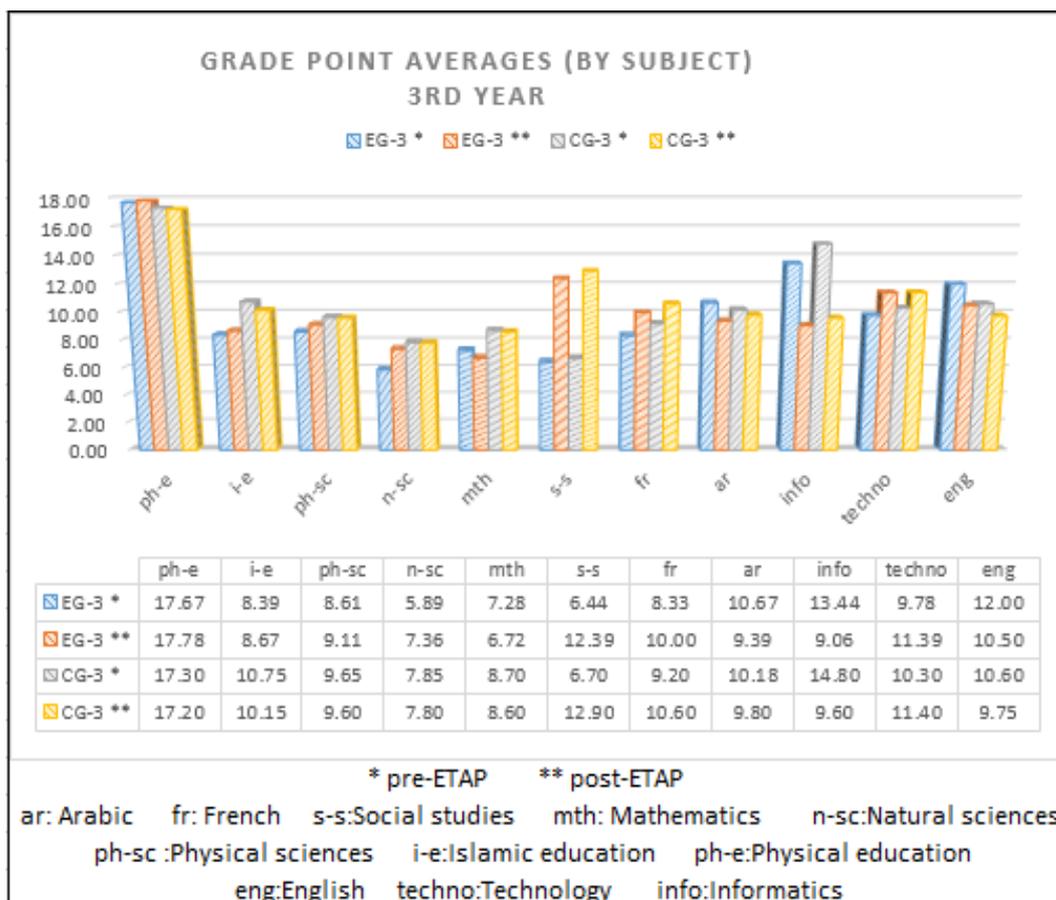


Fig. 12. Grade Point Averages of 3rd Year Students

The students of the third year benefited the least of this artistic program (just 10 students) and their results were stable or with slight changes that may not reflect a true effect of the use of the arts in education.

Unless it should be noted, a slight increase in natural sciences grades of the second control and a good level of physical education and English language scores among students of 3rd year experimental group.

CONCLUSION AND SUGGESTION

When taking all methods of research findings above into final reflection, the conclusive answer to the research question, “**Can creativity be improved through arts in (socioeconomically disadvantaged) middle school?**”, can on the whole be answered positively, although not absolutely. Creativity levels were found to be successfully advanced in the experimental group of disadvantaged middle school as a consequence of the arts use in education program they followed. While Torrance testing (done both before and after the ETAP period), showed a notable increase in – at least – levels of fluency and originality among the participating students, the qualitative participatory observation (done during the ETAP) confirmed this effect.

Also, the conclusions of the participatory observation presented improved creativity as a consequence of individual or groups occasions of an efficacious creative process having taken place during the research program period. The second research question, “**Can this creativity (in case developed by arts use) help adolescents to improve their academic achievement levels?**”, can on the whole be answered negatively, although not unconditionally (considering the exceptional case of natural sciences results which improved relatively for students involved in ETAP activities).

The fact that this research made use of multiple approaches to creativity and multiple research methods demonstrated required due to the concept complexity, but in some regards should perhaps be seen as a double edged sword viewing the findings treatment and analysis difficulty.

Both approaches to creativity - the creative *product* ((Torrance, 1962)) and the creative *process* (Runco & Chand, 1995; Runco, 2003) - are based on the same four indicators: fluency, originality, flexibility, and elaboration (Guilford, 1958; Guilford, as cited in Vincent, et al.,

1950) and as such share the most central scientific foundations, they are in fact moderately different, which makes the alignment of the research results somewhat difficult. Additionally, the different methods do in fact complement and validate each other.

The limits of the qualitative method in effectively quantifying individual factors of creativity are counterbalanced by the statistical quantitative data of certain principal factors.

The triangulation provided by the results of the multiple methods used delivers an independent deduction that serves to support both validity and reliability.

Lastly, the final conclusion of this research may be positive, but the level of this conclusion absoluteness is unfortunately not without some reservation, then more statistical correctional studies should be done, and it is also desirable to investigate more to explore this art impact in various educational conditions.

REFERENCES

- [1] Abbs, P. (1983). English within the Arts. A Radical Alternative for English and the Arts in the Curriculum.
- [2] Court, A. W. (1998). Improving creativity in engineering design education. *European journal of engineering education*, 23 (2), 141-154.
- [3] Craft, A. (2003). Creative thinking in the early years of education. *Early Years: An International Journal of Research and Development*, 23 (2), 143-154.
- [4] Gardner, H. (1999). *Intelligence Reframed: Multiple Intelligences For The 21st Century*: Basic Books.
- [5] Greven, J., & Letschert, J. (2006). Kerndoelen primair onderwijs.
- [6] Guilford, J. P. (1968). *Intelligence, Creativity, and Their Educational Implications*: R. R. Knapp.
- [7] Gulbenkian, C. (1982). *The Arts in School*. London: Calouste Gulbenkian Foundation.
- [8] Henry, W. (1996). Creative processes in children's musical compositions: A review of the literature. *Update: Applications of Research in Music Education*, 15 (1), 10-15.
- [9] Kersting, K. (2003). What exactly is creativity. *Monitor on Psychology*, 34 (10), 1-40.
- [10] Lanier, V. (1955). Creativity: An educational problem. *Art Education*, 8 (2), 6-7.
- [11] report, A. (December 2014). Implementation of the National Charter for Education and Training 2000-2013; Gains, obstacles and challenges.: The Supreme Education Council.
- [12] Robinson, K. (2017). *Out of Our Minds: The Power of Being Creative*: Wiley.
- [13] Torrance, E. P. (1962). *Guiding creative talent*. Englewood Cliffs, NJ, US: Prentice-Hall, Inc.
- [14] Webster, P. R. (1987). Conceptual bases for creative thinking in music. *Music and child development*, 158-174.