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Contemporary art in higher education: creative pedagogies in political economy

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Abstract

We propose that contemporary art, which reflects the problems and attitudes of our times, can be used as a way of promoting creativity in disciplines that are not traditionally associated with the arts. *Whilst contemporary art is being used as a learning and teaching aid in higher education in a small number of disciplines, it is not normally used in disciplines dominated by rational discourse; an example is economics, on which we focus.* We begin by reviewing the literature on art, education and creativity. We then *perform an activity* with students taking political economy. Students are given the task of selecting a work of contemporary art which “speaks” to them about political economy, followed by an assessed, in-class presentation on the connection between the piece of art and the subject of political economy. We run a focus group to assess the effectiveness of the activity in terms of encouraging the students to exercise and develop their creativity. *We find that it is particularly effective at enabling them to establish innovative connections and associations, increasing their interest in learning and developing a personally relevant body of knowledge.* Furthermore, taking into consideration contemporary art’s ability to highlight the problems of our times and to react to them, we consider whether the works presented by the students display these problems and are capable of offering solutions, or elements of solutions, to them, *and find that they are indeed capable of doing so.*

Keywords

Art and education, contemporary art, creativity, higher education, political economy.

1. Introduction

We live in a world of unprecedented global challenges. Will humanity be able to address the problem of climate change, or will it act too late and on too small a scale? Will it be able to harness the benefits of the internet, and not succumb to its unscrupulous use by terrorist organizations as a tool to elicit, finance and organize acts of violence? New problems require new solutions, and new solutions require thinking outside the box; they require imagination and creativity. They go to the heart of who we are and how we organize ourselves as a society, bringing the role of the social sciences to the fore. How are we to “teach” these crucial skills to our students? This is a particularly challenging question in disciplines like economics which are dominated by a specific school of thought - the neoclassical school in the case of economics (Girardi and Sandonà, 2018) - and in which the emphasis on mathematical rigour, elegant and enlightening as it often is, acts as a constraint on new ideas coming from less technically inclined but highly inventive members of the profession.

Eisner (2002) suggests that the forms of thinking promoted in the arts may be useful when the aim of education is to go beyond rationality and involve creativity. Contemporary art, we suggest, is particularly useful in that it has the added bonus that it reflects the problems and anxieties of modern society. Indeed, according to Venäläinen, “many of the works [of contemporary art] make strong statements regarding the conditions and modes of operation of [...] society and human being[s]” (Venäläinen, 2012: 465). Exposing students to contemporary art can stimulate students’ creative thinking by encouraging them to see the problems of our times from new perspectives – and possibly even to offer new solutions to them. [Indeed, contemporary art is sometimes used as a tool in social justice education, the purpose of which is to study and deconstruct the world around us so as to make it more just \(Dewhurst, 2011\). Similarly, the literature around the concept of changemaker emphasizes the need for commitment to address social and environmental problems and seeks to develop appropriate capabilities including critical thinking leading to new perspectives \(Alden Rivers et al., 2005\).](#)

1.1. Art and education

Whilst contemporary art is generally understood as the art of the times in which we live, there is no single, strict definition of it. Indeed, Hopwood believes that “contemporary art by its nature avoids definition. As John Baldacchino (2008) explains, it is the elusiveness, the mystery of art that makes it so valuable. The minute it becomes formulaic it is lost.” (Hopwood, 2011: 145). Contemporary art became better identified and defined as a movement in the 1960’s with the works of artists like Andy Warhol and Roy Lichtenstein, whose innovative ideas challenged established norms of what could be defined as art, particularly the visual arts (Efland et al., 1996). Since then, contemporary art has grown to embrace a large variety of artistic practices, ranging from paintings and sculpture to performance, photography and cinema; and with these a correspondingly large number of modern artistic movements, including pop art, performance art, minimalism, conceptual art and video art (J Paul Getty Museum, 2018).

The use of contemporary art in teaching subjects other than the arts is rare. An exception is in medicine, where contemporary art, which is characterized by “indefinitiveness and complexity” (Venäläinen, 2012: 465), is used to train medical students to become accustomed to multiple interpretations of reality: analogously to what practitioners experience in the medical world, students observe a piece of art (the parallel here being a medical issue), come up with different interpretations of it that reflect each individual’s prior knowledge and experience, join in discussion and attempt to reach a consensus view (Schaff et al., 2011; Bentwich and Gilbey, 2017). More generally, contemporary art has been used in discussion of topics such as feminist issues (Isaak, 2002), spirituality (Baas and Jacob, 2004), the Holocaust (Young, 2000) and social studies education (Desai et al., 2009).

Eisner (1972) describes two well-known arguments to justify the utilization of art in education, one contextualist and one essentialist. The contextualist approach, sometimes known as the utilitarian approach, uses art as a means of attaining a particular objective, such as helping to learn history or to stimulate creativity. This approach is in agreement with Dewey's and Vygotsky's thinking that art plays an important role in contributing to the development of deeper understanding (for example of a subject) through complex creative thinking (Eisner, 2002). The essentialist approach, on the other hand, conceives art as a very particular and valuable experience in the Deweyan sense (Dewey, 1980), having a particular continuity for each individual, activating the observer's sensitivity and promoting the expression of his or her values, often by drawing his or her attention to everyday aspects that are often overlooked and which can act as visual metaphors. In the activity which we performed and which we describe below, contemporary art performs both contextual and essential functions: contextual in that we use it to teach with the objective of enhancing creativity, and essential in that some students chose works of art and used them metaphorically.

One of the big attractions of using art in education is its ability to connect different realities through the emotions, and to make it possible for observers to empathize with issues beyond their daily lives. Vygotsky (1971) supposes that a work of art is a special and a deliberately organized system calculated to cause a particular emotion. Rooney (2004)'s comprehensive review of the literature points to beneficial affective and cognitive effects on students who participate in arts-based learning prior to university. Affective development refers to increased interest in learning, self-esteem and willingness to try new things. Cognitive development includes abilities that are applicable to learning situations, such as creativity, self-learning and complex thinking skills, including skills to understand, interpret and solve problems. In economics education, cognitive development, particularly the ability to understand and solve technical problems, takes centre stage and leaves affective development to come a distinct second, so that one of the attractive features of using art lies, in our view, in art's ability to promote affective development, consistently with Watts and Christophera (2012)'s finding that art activates the observer's sensitivity and has a bigger affective impact than lectures, textbooks or data.

Whilst examples showing the use of art as an educational tool in elementary and secondary education abound (see Hall and Thompson (2017) for a broad repertoire of pedagogic practices), such methodologies represent a more recent and far less widespread phenomenon in higher education. Speaking in the context of higher education, Chemi and Du (2018) point to "the need for further study to promote the arts in different disciplines, including social sciences"; furthermore, speaking with reference to a wide range of age groups in education, Cahnmann and Siegesmund (2017) argue that "approaches to research methods are as varied as the social sciences themselves, but what connects these contributions is the edge, pioneering spirit of risk-taking and interdisciplinarity". In economics, at higher education level, this gap is beginning to be filled, as can be seen in the work by Watts and Christophera (2012), which shows the wide range of economics content that is reflected in some paintings. Other examples are: Van Horn and Van Horn (2013) and Tinari and Khandke (2000) using music; Mateer et al. (2011), Mateer and Li (2008) and Sexton (2006) using movie or television clips; and Davis (2015) using poetry. In this paper, we expand the set of art forms deployed by our colleagues in the area of economics education to include contemporary art.

1.2. Creativity and education

The pedagogical literature on creativity is vast and already enjoys a tradition of its own; as it is not always apparent how university lecturers understand creativity (Jahnke et al., 2017), it is worth spending a few moments discussing the meaning of this term and its origins in modern pedagogy. The pioneering works by Guilford (1950) and Torrance (1962) emphasized divergent thought as the basis of creativity, while Stein (1953) was the first to offer an operational definition of creativity as a process through which something new is generated that becomes accepted as useful or satisfactory by a significant group of people at that time; a definition that remains in effect to this day (Newton, 2013; Runco and Jaeger, 2012). In higher education, the meaning of creativity and

the usefulness of creative processes are likely to be dependent upon forms of thought specific to each discipline and are closely connected to the learning objective of problem solving (Jackson, 2006).

The relationship of creativity with problem solving strategies has been studied by a number of authors beginning with Guilford (1950). Cropley and Cropley (2008) for example, argue that creativity is associated with the generation of unexpected responses achieved by establishing innovative connections and associations between available pieces of information and knowledge. In their view, subject content and creative pedagogies work hand-in-hand for both identifying problems and finding solutions to them. This is important in economics education, in which problem solving is a key learning objective and a skill demanded by employers (Economics Network, 2004).

When choosing educational strategies, it is important to take into account the factors that promote, or inhibit, people's creative processes. This is a highly developed area of research (see Wu et al., 2014). For instance, Sternberg and Lubart (1996) note the following factors: intellectual ability, knowledge, thinking styles, personality, motivation, and environmental elements; Hoff and Carlsson (2002) identify confidence, critical perspective, invention, passion, acceptance of challenge, and occasional depression; and Fryer (2009) mentions, inter alia, a repertoire of problem solving strategies, imagination and information seeking skills, as well as knowledge and skills specific to one's field. Many of these abilities can be developed by means of appropriate strategies, dispelling the notion that creativity is a characteristic that can only be enjoyed by the few (Gardiner, 2017). This is consistent with Anna Craft's notion of 'creativity with a small c', that is, new ideas which someone can have in relation to his or her previous system of thinking (Craft, 2001), a form of creativity which everyone is capable of experiencing. Adler and Obstfeld (2007) add that moods and emotions are important aspects for motivation, whilst Newton (2013) points out that creativity develops with difficulty in a context of anxiety, fear of failure or pressure for quick answers; Amabile and Kramer (2011) suggest that these affective factors are central to long-term creative productivity.

The demand for greater creativity in education is not only due to its recognized pedagogical effectiveness, but also to the demands of the global economy and the perceived need for competitiveness (McWilliam and Haukka, 2008; Morrison and Johnston, 2003). The importance of the development of students' creative abilities is recognized by many employers (Sousa and Wilks, 2018; World Economic Forum 2018; Dewett and Gruys, 2007), as well as by the students themselves (McCorkle et al., 2007). As far as higher education is concerned, Livingston argues that universities in the twenty-first century need "to establish a new experiential paradigm centered on cultivating creativity", and believes that academics must start moving away from "traditional pedagogies and classes that leave little or no space for new experiences" (Livingston, 2010: 59). The European Commission, in its *Strategic Framework for Education and Training 2020*, indicates among the long-term strategic objectives in education policy the enhancement of "creativity and innovation, including entrepreneurship, at all levels of education and training" (European Commission, 2009). These approaches are supported by other institutions as well, such as the OECD (Taddei, 2009, OECD 2018).

Consistently with these recommendations, a few universities have sought to incorporate the creative dimension into educational practice at an institution-wide level and have launched a number of initiatives, such as the *Creative Campus Initiative* at the University of Florida (www.creativecampus.ufl.edu), the *Creative Campus* at the University of Alabama (www.creativecampus.ua.edu) and *Kent's Creative Campus* at the University of Kent (www.kent.ac.uk/creativecampus). Yet, in spite of these developments, commentators like Marquis et al. (2017) lament that there is still a dearth of creativity-enhancing pedagogical practices in higher education.

In summary, having reviewed the literature on art, creativity and education, there are a number of aspects of creativity which can be developed in the classroom by means of art, and in the activity which we describe below we wish to see which of these aspects emerge when contemporary art is

used in a non-art discipline, namely political economy. These aspects are classified as either cognitive or affective, though the distinction between them is, in our view, somewhat more blurred in practice than the theory would suggest. Cognitive factors include divergent thinking, establishing innovative connections and associations, self-learning and complex thinking skills, including understanding, interpreting and solving problems, whilst affective factors include interest in learning, self-learning, willingness to try new things and a sense of fun.

2. Methodology and Materials

2.1. Procedure and participants

The starting point of the procedure we employed was to perform an activity with students, which is described in greater detail below. The research method was mainly qualitative, consisting of a focus group discussion carried out after the activity took place, accompanied by a brief questionnaire as a way of checking for reliability of the focus group results. In addition to the focus group and questionnaire data, the information collected includes the assignments which the students submitted as part of the activity.

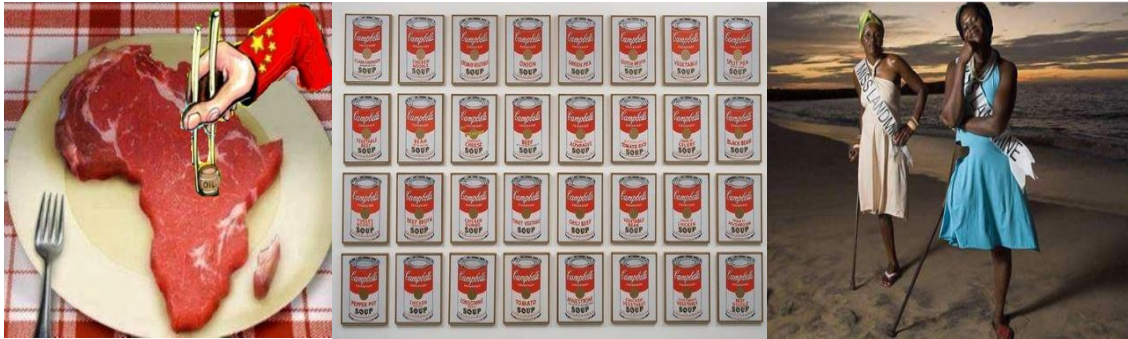
The activity was held in the International Economic Policy course of the Master's programme in International Studies at the University of Valencia (Spain), this being an elective course with 12 students. The students were mostly Spanish, with 3 students stating that they came from outside Spain, of which 2 from China and 1 from Palestine. No one had specialized in political economy in their previous studies, though many had studied related subjects, such as politics, economics and law. There were equal numbers of men and women.

Students were asked to look for an object of contemporary art which they identified as having a relationship with international political economy, make a ten-minute class presentation, and submit an outline of the presentation along with a copy of the artwork. Students were not asked to identify a piece of contemporary art that displayed a problem in political economy, nor indeed a solution to such a problem, so as to maximize the freedom enjoyed by them and to see where their interaction with contemporary art would naturally take them. In order to facilitate the assignment, the tutor explained in detail the characteristics of the activity. To illustrate the potential that works of contemporary art could offer, he showed students some examples of such objects and how they could be linked to political economy by referring to images from the websites of the Museum of Modern Art in New York (www.moma.org) and of the Tate Modern Gallery in London (www.tate.org.uk/Tate_Modern). Students had four weeks to complete the activity, which was included in the formal assessment of the course.

2.2. The students' work

Most students used *Flickr* or *Picasa* to select art objects and then established original connections with political economy, a creative endeavor in its own right. The students' work was varied and displayed much creativity in Craft's sense of 'creativity with a small c'. Only two students out of twelve chose works of art which explicitly incorporated an economic dimension. Most of the works chosen by the students covered problems in political economy. In order to classify the students' works, we took into consideration both the written assignments which the students submitted and their in-class presentations, and we analysed both the verbal and visual content of these. A number of categories emerged, which could be grouped within three broad themes: (I) issues in international relations, (II) cultural shifts, and (III) unexpected reactions to problems in political economy. Importantly, the views expressed by the students below are the students' only and in no way purport to reflect the views of the authors.

Figure 1: Some examples of artwork chosen by the students



From left to right: *Economic colonialism* (title given by the student), original picture showing map of Africa on a plate by Africa fbcdn.sphotos, source: Pinterest; *32 Campbell soup tins*, by Andy Warhol, source: Wikimedia Commons; *Miss Landmine Angola (2008)*, by Morten Traavik, photo: Gorm K. Gaare, reproduced with permission from the author.

2.2.1. Theme I. Issues in international relations.

The images which fall under this theme speak of the influence of one country over another. An example is the image on the left in Figure 1, which reflects the student's understanding that China's relationship with the African continent is one of economic colonialism. This is the only image that was digitally altered by a student, who added an arm and chopsticks. A second image chosen by another student shows the Statue of Liberty being supported by a Chinese terracotta warrior with the former World Trade Center hit and on fire in the background, reflecting the student's view that the US is reliant (literally in the image!) on China, in particular – explains the student in his work – on the Chinese government purchasing US government bonds, especially after the 9/11 terrorist attack. A third image chosen by another student shows a Spanish banknote denominated in pesetas but with a picture of the German Chancellor Merkel on it, which for the student depicts Germany's hegemony in Europe and would continue even if Spain were to abandon the Euro and re-introduce the Spanish peseta.

2.2.2. Theme II. Cultural shifts.

This second group of images chosen by the students refer to society-wide cultures, for example Andy Warhol's famous "32 Campbell soup tins" – see Figure 1 above. For the student, this work of art reflects the diffusion of the culture of consumption, a diffusion assisted by the American government [as it sought to promote economic growth even if it meant that the working class and people in general suffered from "dehumanization" as a result of standardization and mass production, alleviated to an extent by the growth of the trade unions and the social advances which these brought about.](#) A second image shows, according to the student that chose it, an Ethiopian fighting for control of oil (which will ultimately be appropriated by China, says the student). For the student, this image reflects the fact that economic powers are now in control of politics, an example being international firms selling armaments. In addition, in this image, the student says, "one sees international political economy in terms not only of its consequences, but in every corner of the photograph".

2.2.3. Theme III. Unexpected reactions to problems of political economy.

The third set of images chosen by the students indicate unexpected reactions and even partial solutions to the problems of international political economy. These solutions tend to be personal in nature, though they may have major international repercussions, as explained below. An example is the image on the right in Figure 1, which shows women victims of landmines who, faced with the

visible effects of the mines on their bodies, decide to take part in a beauty contest. Such an [unexpected](#) reaction in the face of adversity does not solve the problem of trade in landmines of course, but it does offer the individuals affected a way to live with the problem. The student who chose this image pointed out that these mines are designed to injure rather than to kill, and that more than thirty countries have not yet signed the Ottawa Treaty of 1997, among which are the USA, China and Russia. The student also pointed out that “planting evil costs only 1.80 euros” (per mine, presumably) and concludes that “once again, money turns out to be behind everything”.

A second image chosen by another student shows Alan Greenspan, former Chairman of the Federal Reserve, apparently displaying regret and a change of mind with regards to his policy of advocating market deregulation (see Tett, 2013), with the assertion “WTF did I do?!” appearing at the bottom of the image. This again represents a solution, or the beginning of a solution to be precise, in that a fundamental actor on the international political economy stage was capable, after more than a decade of promoting what turned out to be a severely criticized policy displaying overconfidence in the correct functioning of the markets, of undergoing a fundamental change in perspective, with positive repercussions for the US and the global economy. Indeed, Greenspan remarked, while being interrogated by the House Committee on Oversight and Government Reform, that “Those of us who have looked to the self-interest of lending institutions to protect shareholders’ equity, myself included, are in a state of shocked disbelief” (Andrews, 2008). Furthermore, in so far as these solutions are unexpected, they are an illustration of Cropley and Cropley (2008)’s idea that creativity is associated with the generation of diverse and unexpected responses through the establishment of innovative links using available information.

The sample of works shown above, as well as the students’ reflections upon these chosen works, indicate that the exercise encouraged them to think creatively [in the sense that, using works of art not originally intended as teaching tools, the students engaged in imaginative and unconventional reflections on the subject of political economy](#). This can also be seen in the focus group analysis that follows.

2.3. Data collection

The focus group discussion lasted approximately one hour and was recorded. It took place nine months after the completion of the course, well after the students had been assessed and after the relationship between them and the tutor had come to a complete end across all subjects. Of the twelve students enrolled, eight attended the focus group, with all eight displaying a very cooperative and open attitude. In general, they showed a high degree of involvement in the project and valued very positively its innovative quality. The focus group was moderated by the tutor using a series of open questions based on the literature review.

[The focus group discussion was accompanied by a brief questionnaire to gauge the students’ overall impressions of the activity. The questionnaire was filled in by twelve students, at the end of the course and in an anonymous fashion. The content of the questionnaire was similar to that of the focus group and was specifically designed to find out whether different aspects of the students’ creativity had had been stimulated by the use of contemporary art. The focus group data was transcribed and thematically classified using descriptors related to creativity such as motivation, curiosity, originality, emotions, values, critical thinking, personally relevant learning, etc.](#)

3. Results

[We now present the results of the focus group, starting with the students’ perception of the activity in overall terms. We then consider the cognitive effects and affective effects described in the literature review. Following this, we discuss two aspects of the student’s learning experience which emerged from the activity and which do not fall neatly into either the cognitive or affective categories, but still clearly display creativity, namely holistic and transformative learning. Finally,](#)

we consider the questionnaire results and assess the extent to which they are consistent with the focus group results.

One of the key motivations for using contemporary art in international political economy classes was to explore its suitability as tool to promote creativity. The students' opinions were very much in agreement with this hypothesis. PCA's overall evaluation was fairly typical of the sample (all quotes below are translated from Spanish):

"The proposed activity is a creative paradigm, that is to say, it demands that [you] relate this with that and there is no single answer [...]. That forces you to think creatively about how you can create your own answer. Nobody could create the same answer as you did, and this, which is an obstacle, is at the same time an opportunity [...]. Everyone had to develop their own idea [...]. It promoted observation. You had to wrack your brain. It promoted imagination".

With regards to cognitive effects, many students commented on the efficacy of the activity in inducing students to make creative connections which they would not normally make:

"I made links between topics which I thought I would never make [...]. It encourages us to relate concepts that we have already acquired with the subject that we are studying". (MGR)

"It forces you to look for relationships, connections; you see one thing and then you say *look, I can relate this with another thing*". (MJL)

Another creative dimension highlighted by the students was that the activity allowed for the construction of personally relevant knowledge. *Whilst this form of learning is not explicitly identified in the literature on creativity, it is closely related to self-learning, a cognitive effect.* It can be encouraged by means of various educational practices, but with contemporary art, which requires viewers to develop their personal interpretation of the material exhibited, it was virtually bound to take place:

"Art is very subjective, it depends a lot on the eye of the beholder, on the experiences one has. [...] Linking art with economics offers infinite possibilities and what to do is up to us". (MGR)

"With regards to knowledge, [in the course of the activity] each student builds their own curriculum. I think this is great, everyone must discover their own interests and concerns". (PCA)

This diversity of particular maps of knowledge about the same topic offers, on the one hand, the advantage of presenting a more plural vision of the discipline to students, as MGR noted:

"It gives you different perspectives when it comes to understanding the subject, and that allows everybody to have different visions of an aspect [or topic] that we have seen in class".

On the other hand, this diversity opens a space for the construction of an approach to economics that is more interdisciplinary, as PCA confirms:

"There wasn't just multidisciplinary, but interdisciplinarity, that is to say, not just economics and art, but economics with art".

The literature on creativity reviewed earlier stresses the importance of affective factors in promoting creativity (Amabile and Kramer, 2011). During the experiment, it was apparent that students felt emotionally involved in the works of art which they and their peers presented, as reflected in ACA's remark:

"We recall works because of the emotions they evoke. I often recall the work with the weapon [i.e. PCA's work], you remember better, because it deals with emotional issues. You don't

remember everything that a presenter says, but you remember what [he/she] makes you feel”.

Having fun, an indicator of emotional engagement, played an essential role in enabling students to be creative, though some students began to experience it only once they had made some progress with the project:

“It was different. Since we were used to getting everything from books, it was stressful at the beginning, but then it was entertaining”. (MGA)

“In this manner, economics becomes more accessible; [... economics] for some is not just difficult, but also far removed from people, and in this way [i.e. the way of the experiment] it comes down to earth and you can see it in a more relaxed way, more palatable, closer. You go from looking at economics as something boring to something fun”. (VGH)

The stimulation of the imagination, an essential element of the creative process and another indicator of emotional engagement, was considered important by the students. RSA remarked:

“[The activity] awakens a curiosity about the subject that until that moment [you had not [felt], and which remains awake for the remainder of the course, even once the activity is concluded. This stimulates your imagination when it comes to relate different concepts, even well beyond those of economics and art. It stimulates a different form of thinking and of relating concepts”.

An interesting issue is the perception of creative skills that students hold about themselves, [which is closely linked to their self-esteem, and is identified in the literature as an affective dimension](#). When students presented their work in the classroom, some admitted that, prior to taking part in the activity, they had considerable doubts about their creative potential. However, through performing the activity, these students realized that their level of creativity could improve, or that they had underestimated their level of creativity. For instance, MGA stated:

“I am more creative than I thought I was”.

Assertions such as the one above were consistent with the authors' view that creativity is not something reserved for a fortunate few, but that it is something that can be enjoyed by all and that can be enhanced through teaching.

About half the students reported that exercising their creativity required significant effort. In VGH's words,

“It wasn't easy because you have to change the way you think to do this kind of work [...] because we're used to something more specific”.

One might assume that requiring students to perform an activity that involves more work or effort than normal can act as a disincentive and induce students to disengage. However, even though students thought that the exercise implied more work, their motivation proved to be strong:

“I think that what is proposed with this experiment is very important [...] because it is a way to change the thinking that should have started with younger people. It is fundamental to change the way of thinking [...] It would be a more fun education, equally responsible, but more motivating. It encourages people to look for solutions. And it is true that the educational system at the undergraduate level doesn't require you to think much”. (VGH)

A number of comments made by students suggest that they experienced holistic learning, this being a form of learning which encompasses both the cognitive and affective aspects of learning (see Rogers and Freiberg, 1994). With regards to affective learning, we have already remarked on the important role of the emotions in the students' experience during the exercise, in sharp contrast with mainstream economics education. With regards to cognitive skills, a considerable number of

students were pleased to experience a new-found interconnectedness between 'folders' holding different blocks of knowledge in their minds; this was precisely PCA's experience:

"Folders [in the mind] which we kept closed [...] now are linked by a thread and this is of fundamental importance because learning understood as air-tight folders does not work".

In addition, the focus group indicated that students had experienced transformative learning, which Cranton defines as follows: "broadly, transformative learning occurs when people critically examine their habitual expectations, revise them, and act on the revised point of view" (Cranton 2006: 19), Many of the works of art chosen by students were highly provocative, even disturbing, and could therefore put the students in a 'disorientating dilemma', a situation of creative tension requiring resolution, as transformative learning requires. Indeed, the power of contemporary art to promote transformative learning is recognized in the literature, usually through the use of shocking images or other material, as in Knight (2006)'s work on challenging racist attitudes.

During the course of the activity, students critically examined and revised their points of view. According to VGH, for example, working with art was refreshing and felt like "opening windows" in so far as it enabled her to see that values and ethics are key to understanding the economy. There was a consensus among the students that the works of art induced them to reconsider their system of values, particularly when confronted with the material chosen by one's peers:

"Yes, there was a questioning of values". (PCA)

"I'm not talking about changing them [one's values], but at least reframing them, giving you a perspective that you did not have before". (MGR)

"In your work [...] perhaps you look for something which does not contradict your values. However, the works of your peers can succeed in doing so [...]". (ACA)

Finally, the results of the questionnaire were closely aligned with those found in the focus group. The questionnaire indicated that the evaluation of the activity by the majority of students was positive, with 10 out of 12 students considering the activity useful in general terms. Importantly, given the focus of the activity on creativity, the average response to the question "Do you think the use of art develops creativity in students?" was 4.4, where 4 indicated agreement and 5 indicated strong agreement. The in-class presentations and the debates that followed were found to be useful as a way of promoting creativity (8 students), self-learning (9 students), critical analysis (10 students) and comprehension of concepts (10 students). The majority of students stated that the exercise promoted reflection through linking content material (8 students), and that the exercise improved their ability to reflect on world economy phenomena (10 students). Most students (11) found their peers' work to be enriching.

4. Discussion and Conclusions

The activity that we performed in class using contemporary art to teach political economy turned out to be successful in a number of ways.

Firstly, it challenged students to be more creative, and succeeded in doing so, as reflected in the students' work and as the students themselves reported in the focus group. All the major cognitive and affective effects described in the literature on art and creativity were identified; perhaps the most significant cognitive effect which we observed was the student's ability to establish innovative connections and associations, whilst the most significant affective effect was their increased interest in learning. In addition, the students benefited from personally relevant learning, made possible by the fact that, as part of the activity, they were asked to choose works of art which "spoke" to them. In the process, the activity enhanced the students' ability to think holistically, with students experiencing the integration of their different faculties, and it prompted a degree of

transformative learning, with all students reporting that the works of art made them question their values and/or points of view.

Secondly, most of the contemporary art chosen by students pointed to present-day problems in political economy, and some of the works suggested individual or partial solutions to these problems. For example, the work depicting Greenspan's well-known change of mind away from highly libertarian free market economics represents a striking correction of an attitude that has been criticized for having played an important role in the financial crisis of the last recession, as indicated by the governor of the Bank of England Mark Carney (Carney, 2014). It is a paradigmatic change of perspective as envisaged in transformative learning theory. Fundamental changes in attitude, if they spread across society through the championing of leading figures such as Greenspan, may result in an improvement of the economic system as a whole. Works by the students such as the one just described display creativity both in the selection and use of the artistic material, and in the process leading to the useful suggestion of a solution to a real-life problem. Furthermore, by virtue of the fact that these solutions are useful, they are also creative in Stein (1953)'s sense of the term.

The activity posed significant challenges for the students which took much effort and dedication to overcome. The implementation of such unusual activities can be problematic due to the lack of experience and the discomfort that using art can generate in rationalist disciplines such as economics on the part of both students and tutors. One student (MGA) stated that "[...] we had never been asked to do something like this before, in the beginning it was stressful". The remarks of another student (ACA) illustrate the risks perceived by the students of abandoning orthodox teaching approaches:

"Some students may reject the assignment considering it not be orthodox. Orthodoxy has a great advantage and it's that we all know what to hold on to. When someone leaves that place, two things can happen: *Great! Or Get me back to normality!*"

Furthermore, some students found the freedom to answer as they felt most appropriate worrisome: "I did not have enough courage to risk", said PCA; however, not all students felt this way, for example MGA stated: "All of the students' works were fine, they could not be wrong, because it was so subjective that there was no possibility of getting it wrong".

An alternative approach to the one taken in this paper would be to identify a number of threshold concepts which make up the core of the economics discipline (e.g. comparative advantage, terms of trade, etc.), and to assess to what extent the use of contemporary art can assist the learning of these concepts by students. Instead, the approach we followed was to allow students full freedom to select material which spoke to them. In so doing, we felt that we maximized the opportunity for creative thinking. This sense of freedom was one of the aspects of the activity which students valued the most, in spite of being a source of worry for many of them as they embarked upon ways of learning which they had not experienced before.

We believe that the successful outcome of our activity has positive implications for the use of contemporary art in economics education at both at undergraduate and postgraduate levels in economics, as well as across disciplines other than economics and in the social sciences in particular. This is because the approach we suggest is based on the principle that students choose for themselves what is interesting and relevant to them (Girardi, 2013), which is applicable at different ages in higher education and across subjects. The idea is not for contemporary art to replace the existing syllabus, but to complement it with material of the students' choice that is stimulating to them and which "speaks" to them. In addition, the activity that we performed is not technically complex and does not require advanced knowledge of contemporary art, neither by the students nor by the tutor.

Indeed, it would be interesting to explore if, upon repeating the activity in other social sciences, students were to pick works of art which, in addition to pointing to the problems of our age, offered solutions, or elements of solutions, to these problems, as was the case with our activity in political

economy. Finally, it would be fascinating and potentially very useful to compare and combine the solutions obtained by students performing the activity in different disciplines; not only would this be a very creative exercise in itself, it could potentially represent a small but significant step towards solving the “overall puzzle” of addressing the urgent challenges that humanity is currently confronted with, as we discussed at the beginning of this paper.

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