Creativity and Computational Design: A Love Story

Miguel Navarro Noguera
WARKS, European Brand for Education, Instructional Design and Game Design, Barcelona.

miquel@warks.es

Abstract. Ever since, creativity has been attached to certain people and actions more or less minority among our society: every single artistic expression, handmade and unique objects, design masterpieces or even we find it in the liturgy. We can notice some kind of creativity through some sparkling attitudes among the youngest children, we clearly identify creativity in every single object that we refer to as design piece. Here is when creativity is clearly associated to formal beauty or uniqueness. Nowadays, creativity has become more kind of a, sometimes determinant and always significant, part of the Technological Process in which creativity brings out some kind of improvement, pragmatism and optimization in any way and obtaining different and better results: innovation. The very first technicians during the ancient greek history time were artists and artisans. Thank to the iteration of their -creative- creations a pattern did emerge and turned into a methodology. Our aim is to keep having in mind this eternal connection and never letting go the creative part within any technological process. Is it possible to walk back across the technological path so we can get to identify and capture that single moment -space vs. time- where creativity can be parameterized?

Keywords: Creativity, Digital Education, Instructional Design , Technology, Learning Innovation.

1 Introduction

In my opinion, as far as we can train and learn creativity, we should be able to get closer to a formula where we could manage creativity as one more of the included parameters, as balanced and determinant as others. As in many of our learning experiences ain't no time neither space for approaching to creativity as an item to work with, we might perform creativity as one more step or phase to reach a determinate solution. The aim would be not to be pushed to invest extra time in creativity learning and training when taking part in any learning experiences but getting to be creative enough managing creativity from a more computational view and less artistic or subjective. What was first, creativity or technique? Art or Method? During the ancient Greece, the best artisans became the first technicians. It was through the iteration of the creative process and its permanent reformulation through

wondering, combined with several brand new needs, that made blooming the Technological Process.

2 Discussion

Nevertheless, during centuries, the creative component has always been set aside to a strictly more theoretical level, placing it off the production process itself, promoting a permanent perspective where creativity is perceived with some sensation of incompatibility with functionality and pragmatism, even perceiving design as a synonym of formal beauty, singularity and extravagance where the creative part lays exclusively on its shape never on its function. At this time we promote exactly the opposite process: creativity not as a pretext to get to a more fine or stylish target of people but as a high value resource and a door to the development of the individual soft skills. As far as these soft skills appear as key-aspects in our society where the singularity -individual, personal, emotional- and the ability of transfering and dynamizing disruptive ideas pragmatically connected creating efficient networks that lead to success, understanding success as the achievement of the aims through a higher level of singularity, ergonomy and pragmatism.

The creative process could seem easy and simple to those people who live naturally their interactivity with craft-arts or among an artistic environment. Formal creativity is important but neither determinant nor representative of our goals in relation to development of competences attached to a deeper creativity: the lateral thinking.

Our aim is to train and to detonate this creative thinking, a creative perspective filter, beyond traditional artistic and creative objects and creations

-painting, photo, sculpture-, having left behind some kind of more hybrid artistic expressions highly common during what we name digital gestation era -videoart, interactive installations-, living and embracing the present time where digital creation is been completely democratized -memes, gifs, *worldmemes*-. Creativity makes its own path organically as a consequence of our higher technical control over the tools which facilitate creativity, with a more or less artistic value, creations in the end. But this creativity seems to freeze at the right moment when it drops out its entertainment or social- networks interaction context, becoming part of the technological process for creating any product or solution.

It is just in that precise zone right between pragmatism and disruption where very interesting proposals seem to appear, thank to the perception that creativity comes out from every single participant, taking creativity to a more democratic level in which every single person gets the feeling that there is always space for any of their - crazy- contributions although they come from different or even rare origins. Based on a need for divulgation, transmission and connection through creativity, so that creativity is by its nature singularity; and accepting singularity is accepting differences, therefore working with singularity means integration of different.

Another totem value we find within our learning experiences is getting to enjoy being at the goPro area, not only as a tangent training where all participants will find in their very next professional future, whether academic or non-academic, but also as a part of an environment in which an osmotical transference between professional and academical, not only by imitating experiences based on practical cases but also making the experiences themself being part of the real economy ecosystem. For that we design and trace a non-linear but polygonal model: the teacher-student model vs.our instructor- participant-productor model. The productor presence is determinant for a highly level of motivation and encouragement, as it is always a real character (company, brand, person, etc.) inside the Learning Experience ecosystem. This triangle structure is the basis for a more significant participation and helps stablishing a higher level of authenticity.

If there is something that connects our way of training and promoting creativity it is through computational thinking. Both of them depend on the combination and sequence of different elements among themselves and also regarding to their context. Although is kind of obvious that computing ain't eminently creative, we can say that creativity within computational thinking can even be determinant in case we aim to obtain extremely singular and multi-sided pragmatical solutions. Nobody would deny any representative high rate of creativity within an improvised piano short piece, being the music and also the instrument both highly computational language tools. In this case, creativity appears as an absolute ingredient as far as the goal with the improvisation is enjoying an harmonious and pleasant music piece or fragment.

Nevertheless, if the improvised fragment or music piece depends on some conditioning established parameters -rithm, tone, tempo- which help the creation, an improvised music fragment through piano, walking in the direction of a specific need to be met -a music fragment to be used as a lullaby- the absolut spectrum of creativity might be less wide, but at the same time it does not mean that the ratio of creativity shall be lower. In this case, where we want to improvise a piano music fragment as a lullaby, we would avoid from the formula some aspects that would not match with the lullaby function indeed -histrionic notes, eolical chords tones-. What could appear as a limitation for creativity at first sight -limitation, avoiding- can clearly be the very determinant stimulator and detonator to obtain results much more in harmony with the original assignment or need in origin. These handycaps or boundaries established surrounding the creative process help all creations to have a pragmatical homogeneity and at the same time to ease the music improvisation and composition aspects, so all results reach a noteworthy level of pragmatism -function and singularity-form-.

Today more than ever, we stimulate using new technologies in each of the learning experiences we design and implement, not only as designers and instructors but as participants, also by reclaiming traditional technologies as those which after centuries of iteration and after decades of reformulation still offer us maximized results beyond pencil and paper an all its variations. We name ours an Involutive Innovation, a kind of back to minimalism in a more significant and transversal way, so much through

formal aspects -graphic design, composition, geometry- as in more technical ones -file weight, file extension universal as pdf, mp3, mp4- for a more efficient data and information flow and management.

3 Conclusions

None of our Learning Experiences would exist without Creativity nor Technology, but also wouldn't without other aspects also connected to technologies as Composition, or . These are concepts which remind us to plastic expression, physics or , but also we find them within the learning process or the teaching-learning dynamics. Thank to all these singularities we identify and notice as common places among computation and creation, our intention is to keep combining and blending them all giving to Disruption some place and time to emerge as result of different crazy combinations which can keep leading us to fresh new formulas. By using these formulas and by keeping them alive by iteration, we expect to obtain singular and unique results which we expect in the future could be monitored and classified, so the formula that led its development has any kind of creative value.

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