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**FROM AUGMENTED REALITY TO SOCIAL REALITY**  
**THROUGH LEARNING AND KNOWLEDGE TECHNOLOGIES**

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*Abstract*

This paper focuses on describing a pedagogical experience carried out on a Multimedia and ICT subject belonging to a Migrations social awareness project which is being carried out at SAFA University Center. Given the fact that many students knew not so much about social topics, specially the international ones, with this experience authors have tried to show the importance of teaching the use of technology in a social context, as a way to better understand the real causes of migration phenomena. The main focus of the experience had to do with making students aware of how technology can help in creating social awareness and how it can help teachers to creating resources, which being technologically fashionable and useful can also contribute to create a social and fairer conscience in society. At the end, authors conclude that in the university it is possible to deal with social problems at the same time that student fulfil their academic purposes.

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**Keywords:** Augmented reality, ICT, migrations, social justice, technology.



## **1. Introduction**

In the 21st century panorama, technology is seen as an element distant from the feelings of human beings. People tend to believe that ICTs (Information and Communication Technologies), regarded as cold and distant. Traditionally, the world of technologies has been separated from that of the humanities. In fact, our tradition in education has been to show that science has one way and humanities follow another philosophy. Even now this is a general presupposition we have to cope with. The specialisation to which society bring us at university and during studies in general make its contribution to this belief. By contrast, we have set out to demonstrate that it is possible to establish a bridge between the world of technology and people's real needs. In this sense, we should bear in mind that technology has to benefit the neediest people in the world. ICTs should aid us not just towards a sophisticated world, but also to build a better and fairer one.

## **2. Problem Statement**

Given the fact technological development is unstoppable and that it is often isolated from the real needs of poor people, our aim is to establish bridges that could lead to a better and fairer world by using ICTs with teachers in order to learn how it can serve us in the future to be more aware of the experiences of migrants and questions of migration.

### **2.1. Technology in the labour market as a factor of inequality**

Identifying the relationship between technology and inequality is not easy. We can't generalise as if we could have totally clear the issue, but researchers have shown (Soto, 2018) that is a link between unemployment and the rise of mechanization and the high use of technology in the modern production process. Overall, inequality is significantly affected as the industrial sector has progressively required fewer workers. As technologies continue to advance, this is likely to continue. As a consequence, employment is more concentrated in the service sector, where employment opportunities are still available. This strongly suggests to us that organisation of work is related to technology, and as consequence to an increase of unemployment and the growth of poverty.

### **2.2. What is happening with the democratisation of technology?**

Technology is continually evolving. New tools, mobile apps and all kinds of software arrive every day. This advances at an incredible speed. Internet phenomena has made this process possible because there are platforms upon which global products can be created or used from everywhere. This is an opportunity for some people both as producers and consumers, but we have to note that globalisation is not the same thing as universalisation. While there is new technology continually emerging, we at the same time can find many people are excluded from this process because they have no easy access to these tools.

Area (2004), Castells (1998), Rojas (2007), Tedesco (1998) or Tezanos (2001) suggest reasons behind the process of technological exclusion. We can find many of them. In this article we just want to introduce the main of them: first, we can comment how difficult can be for someone to make a complete involving in technologies if he or she don't have the required skills to use or produced them. This reason,

even now, is something that make a huge separation between what is possible for a community and what not. Added to that, we could say that be trending in technology need to have not just the skills but also the time to learn new things that require time and specialisation. This is something that is away from deprived communities, young people and the low skilled collectives of poor people or countries. Other reason, linked with the previous one is that many times the very access to internet is not an easy matter. People in developed countries trends to think that there is normal to have access to an internet provider and the needed resources to use internet, but in fact this is something subject to availability, what is, even nowadays, simply nonexistent.

These factors make us clear that technology itself don't bring us real globalisation (at least of wealth) and much less a fair distribution of that. This is a matter about which we have to work and be involved. As Cabero (2003) sais, we have to be aware of what is happening and throw myths out about the justice that technology can bring us regardless human action.

### **2.3. What can we do for migrants by using ICT in education?**

Teachers in charge of teaching "Multimedia in pre-primary and primary education" arise that question. What could we do from that technological and instrumental contents to increase some kind of awareness on the issue new of Syrian refugees? During our reflections we carried out an awareness campaign thanks to the NGO Entreculturas; this NGO brought to the center a photo exhibition where students could learn about the consequences and problems of current migration movements and how people were suffering because of the war as they moved to safe or at least safer places.

At the same time, and parallel to this humanistic study, they were taken through a thinking process consisting in designing the subject content and methodology (see later chapter). After thought, teachers decided to work on Augmented Reality. This is a field in ICT which is gradually opening new possibilities in education never before seen (Prensky, 2011) this was something interesting for the teachers, but the main question present in this part of the article needed to be answered: what can we do for migrants by using ICT in education? We tried to going into the deep sense of ICT and we found something interesting: ICTs in education are not the aim itself, but the tool toward learning. They provide resources needed to educate. In this case, teachers found in 3D technology an effective tool to learn something: what was happening with Syrians. ICTs were used as a tool for inclusion, something increasingly important in education to join the world of ICT and the world of school and humanities (Cabero & Marín, 2010).

### **2.4. Going beyond ICT instrumentalization**

Nowadays it is assumed technology is necessary to bring development to countries as if it was something related. But this relationship is not clear at all. It comes from the "modernization theories" which argue for something that may be possible in economic terms but not in the educative field (Torres, 2010). Real development in countries has to be linked with the good distribution of technological resources and with the learning of skills that make it possible to use these in a properly educative way. In this context, educational institutions should make the commitment to provide technology for everyone, not just give the gadgets, but the real skills to make use of them. The point is not technology, but the educative uses that can be made of it.

Authors as Galindo (2013) and Mejía (2006) suggest, educative objectives in ICTs should be oriented around this challenge to:

- Diminish the differences in access deriving from social injustice.
- Work on the competences a global citizen will need to be success in this changing global world.
- Promote the formation of critical citizens.
- Foster the use of critical reasoning to correct situations of injustice using ICT as a powerful tool in this.
- Use in general the skills acquired by new citizens to make not a more technological society, but a more human one.

### **3. Research Questions**

This research attempts to work on questions related to the problem statement. More precisely, we believe that this paper can be useful in three main lines of research:

- -Make our students aware of the migrants' situations.
- -Establish a direct link between concrete ICT tools and their usefulness to show what is happening in the migration field.
- -Be able to relate poverty, education and migration and how the level of one of them can affect to the others through ICTs.

### **4. Purpose of the Study**

The primary concern of this research is to:

1. Examine the impact of ICT in terms of building up some kind of awareness around the topic of justice and social equality on undergraduates.
2. Check the impact of augmented reality as a technological resource to improve students social conscience.
3. Demonstrate that ICT resources are just mere means but not an end, increasing the awareness about social characteristics of temporary migrants through ICT tools.

### **5. Research Methods**

This study is part of a larger project on “University for social transformation” on the issue of pedagogical and educational implications of migrations in a specific local context. In this sense, we cannot present meaningful data input and analysis since it contributes to the final results of a wider longitudinal research. In fact, we are analysing if all those educational proposals included in the project will have some kind of impact in a general scale.

As we have mentioned before, this practice belongs to a wider project in which some subjects of Education degrees at SAFA University centre have developed an action-research approach. More precisely, this educational experience has been carried out in a ICT-based subject in which students

needed to learn all the different approaches and resources related to the introduction of technology on kindergarten and primary education.

To do so, we have followed a methodology based on the building of knowledge through the different phases of learning. We started locating all the phases that this project could have within the own learning that the students would develop themselves. In this sense, we divided the practice in four different stages, namely, an initial motivation, which we call awareness, a second one, in which we manage and transform the information called elaboration, the third in which we create a multimedia product, called elaboration, and a last one in which we carry out an evaluation of the whole process that we call metacognition. This methodology is called “CAIT”, in Spanish, because it correspond to the acronym formed by the following keywords: constructivo (constructive); autorregulado (self-regulated), interactivo (interactive) and tecnológico (technological).

To carry out this experience, teachers first asked students to investigate on the internet and media about press news related to migrations and refugees; actually, a lot of significance was given to the case of Syrian refugees.

After analysing critically the news, students had to elaborate a digital wallchart about the different news they have found beforehand. To do so, they needed to use an ICT tool called Glogster (glogster.com). However, the task did not only have to do with creating something technologically adequate; actually, those wallcharts should serve as a trigger for creating some consciousness on anybody watching those posters.

When the wallcharts were finished, students started to create a video in which they explained the meaning of their own wallchart and they also tried to sensitize the rest of people who watched it.

Once students were quite familiar to those social problems related to migrations, they had to work in cooperative groups so as to elaborate a written tale in which they tried to create some conscience about migrations.

First of all, they wrote their tales creating three different scenarios in each one. Each scenario had to coincide with one of these moments (beginning, conflict and end), after that they had to record every scene according to one of those parts.

Once the tales were finished, students prepared a trezzo, decoration and clothing to record the different scenes of their tales. They edited their videos and used chroma to create some special backgrounds that represented migrations scenarios.

Finally, after having recorded the videos and edited them, students used Aurasma software to connect different pictures printed in paper representing migrations to the above-mentioned videos. This software permits students to create Augmented Reality experiences so that when anybody scans a picture, this one “comes to life” and a video emerges from it.

After having created all these resources, students organised a special event at the centre where primary students came and scanned the different markers and watched the videos about migrations. Once they had seen the videos, there was a space devoted to reflection in groups about what they had watched and how they felt about those social problems.

## 6. Findings

After the experience we found a prospect future. The purpose of that experience was precisely to know if it is possible to find a way to explore in order to relate ICT and awareness in migrations. The way in which we found the answer at first (it will be the aim of further researches) was the assessment at the end of the experience in Multimedia and ICT subject, particularly, seeing what the assessment items in which student were reached the highest levels. In our assessment we call them “learning indicators”.

We saw that the task required obtained the highest average marks in students (9,58 points), so we could say that the experience was so useful to work on these “learning indicators” linked with the task:

- R1. CFB 6: To carry out practice exercises on promoting both individual and group development.
- R7. CFB13: To raise critical analysis on multimedia languages and understand the implications on students.
- R5. CFB 13: To explore possibilities of technologies as a tool of exchange of information and human experience from social agents.
- R9. CFB 21: To design educative materials with partners to engage pre-teaching school students into multidisciplinary educative experiences.

## 7. Conclusions

At first, we could see that our students are more aware of the migrant’s situations. This is something that allowed us to:

- Establish a direct link between concrete ICT tools and their usefulness to show what is happening in the migration field.
- Be able to relate poverty, education and migration and how the level of one of them can affect to the others.

3D was seen as an interesting tool that showed us that there is much more to research about it. As final conclusion, after this ICT experience, we know that ICT has something to say, a role to play in the original questions raised on the general research: what do we want to transform? what do we need to investigate? and over all what do we need to know?, as the first step for further awareness and actions to involve our students.

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