People and Technology Today: Some Educational Implications

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The present article approaches some of the educational implications borne by humanity with technological progress. We begin by pointing out significant data that classify what is considered relevant. Then, confronting the future is discussed by analyzing the attitudes necessary to promote the goals. Confronted with these challenges, three possible focuses are suggested in accordance to the novel realities issued from science and technology: The first is the revitalization of humanism; The second is, the society of knowledge calls for both “radicalism and responsibility”, which is also a response to our own decisions, without avoiding their consequences nor discharging them in others; The third is, understanding the true and full significance of solidarity. Finally, some approaches and educational suggestions are highlighted allowing parents, professors and students the greatest opportunity for profiting from the limitless resources that science and technology provide us for personal growth.

Keywords: education, ethics, technology, solidarity, person

Introduction

Nowadays, the proliferation of the world’s images through satellite and digital television, high definition technologies, internet, video games, etc., has converted these media into a new educational arena, joining the more traditional areas of influence of family, school and community.

This is an area in which educational activity has been developing in an informal way, that is, through actions that are not systematically regulated to the extent to which it is promoted by educational institutions (Coombs, 1968). Besides these arenas, to which reference has been made, there are other places of education that are also of the informal kind, such as the family (Bernal, Altarejos, & Rodríguez, 2008), or that seen during moments of leisure within social and community relations. Pedagogy aims to provide progressively greater formalization in these fields, yet it is not exclusively within the proper development of pedagogy where solutions to these new needs of actions can be found; one should look to those who are responsible for these social changes and to those who create those necessities, as well as those who are the consumers: the people.

To be precise, it should be emphasized that behind science and technology is the person who is the main protagonist of the changes that he causes (Rodríguez, Bernal, & Rumayor, 2009, pp. 4-6) and which science and technology provides. To be able to take advantage of these changes for personal growth is the challenge we face today with these new types of media.
Some Significant Data

The data of audiovisual consumption are extremely significant. According to the CAC (Consell Audiovisual de Catalunya) (Audiovisual Council of Catalunya, 2009), children spend more hours per year on watching television than they do in school. Of the total 30 hours per week that Spanish children spend with different audiovisual media, the television is the most popular, with total consumption reaching approximately 19 hours per week. It is followed by video game machines (especially in boys) with almost five hours a week, which should be added approximately another five hours that children spend playing other computer games (Atkins, 2003).

Moreover, in recent years, we have seen a significant increase in the amount of audiovisual equipments in homes, probably due to the individual use of televisions—Almost 50% of which are found in children’s bedrooms and to the use of the video consoles by 65% of children. One of the main causes for this increase of televisions in households, appears to be a result of the conflicts that are created with the adult family members who also want to see their own programs on television (especially if there are grandparents, who are one of the most devoted groups of viewers). The data do not differ significantly from other European countries. Britain, for example, exceeds even our figures from Spain.

From a pedagogical standpoint, this information is important because it means that underage viewers are watching television more autonomously and freely, with limited family control or supervision and therefore, with the added inability to help them discern content on their own, especially children after the age of 11 and within lower-income families, are often more interestingly equipped with televisions. It seems that the television is used more as a “momentary nanny” than an educational tool. Undoubtedly, that makes it a tool of self-education different from the rest.

But paradoxically, the younger the child is, the more gregarious his/her behavior is when it comes to watching television and he/she prefers to watch it with someone else. This is probably the reason for which the audiences’ data indicate that many viewers between the age of 4 and 12 watch television between 21 and 24 hours and prefer programs of adult content that are broadcasted during that time period and outside the protected viewing zone (CAC, 2009).

If the data are significant, then the information is not less significant—Which shows video games are already the main market for audiovisual entertainment in Spain. Video games are a popular form of entertainment with increased market share and now represent a billion Euros business worldwide (Kerr, 2006). In 2004, its benefits (790 million Euros) exceeded the cinema industry (691 €), DVD movies (570 €) or recorded music (463 €). In the same period, more than 1.7 million game consoles were sold in Spain. Their technical qualities are increasing exponentially, and that gave birth to a new generation of consoles in 2006. However, after analyzing some of the best-selling games, an inevitable question arises: Do parents know what their children are playing?.

In order to get a better understanding of the situation, a bit of background information is needed. In Spain, there are more than eight million video game players, almost seven million of who are under 35 years of age, of those, just over three million are under the age of 18. The greatest video game purchaser is male and between 18 and 35 years old with the number of games existing per family at about 17. In general, the motivational reasons that teens pursue this type of entertainment, according to Sanchez-Carbonell, Castellana, and Beranuy (2007) are:
(1) Allowing them to live an adventure in first person, implementing strategies in a virtual environment without real life consequences;

(2) Increasing social standing for many people and is associated with values such as technologies and computers;

(3) Playing with the computer, video console or mobile phone is easy, accessible and affordable, and that can be done in groups or alone;

(4) Through game playing, they look to increase psychological assets highly valued in this age group, such as self-esteem, self-confidence and the ability to excel in something specific;

(5) This activity is emotionally reinforcing because it is intense and fast;

(6) Being able to lead to a moment of crisis or isolation.

Up to this point, we have presented cold facts from real life surroundings. Let us see what can be done through education and what means we have at our disposal to carry out a genuine educational job (Olson et al., 2007).

Facing the Future

More than 26 centuries ago, the ancient Philosopher Heraclites advised, “If you don’t wait (hope) then what you did not expect (hope for), will never occur”. This appears to be a very difficult lesson to learn. Perhaps it is due to the fact that hope in the unexpected is not very safe. This idea, which is security, is found in things of the past, which have been realized or known, and for this reason, secure. If a modern man suffers from what dominates society now, which is the “incurable need for security”, and from which a sense of stressful insecurity is born every time, and inevitable obstacles to an action or wish are found—It is completely understandable, according to clear diagnosis of Pieper (1973), to irrationally wish to take refuge in the past. Retro-progressivism does not do more than repeat the repeated: It reiterates preterite formulas and analysis, and only offers the same old proposals; however, it changes a bit depending on the needs of society. In this manner, it leads itself to the greatest possible danger, which is the risk of making violence of reality by disfiguring and denaturalizing it. On the one hand, ideas from the past are useless for the present, a principal dimension of which is its direction towards the future. On the other hand, which is probably the worst is that the past is also full of doubt and uncertainty, due to unfulfilled possibilities or lost opportunities; and no one can say with assurance that the best was always done. One can say sentimentally and with a sort of warm nostalgia that “Any time in the past was better”, but the only statement that can be made honestly and objectively is that “Any time in the past was before”.

One cannot face the future with mere preterite outlines because no one really knows if they were the best in their times, or at least as something potential for the future. If it is done this way, a sense of perception of the present will be altered, thus, thwarting the dynamics of social reality and blinding the vigilant view of the future. Future comes inevitably, at 60 seconds a minute and at 60 minutes an hour, as said by Lewis (1986). The dangers will be fulfilled. The radical openness to the future is eminently realized as hope for the unexpected, and the key is to know how to spot and take advantage of the opportunities that pass before our eyes. The opportunities do not necessarily come once in a life time, as is said often, they come many times during one’s life, but this is irrelevant if one’s sight remains unclear or blurry and thus, consequently, many opportunities will never be noticed.

For educational action to occur, it is suggested to review those opportunities which are offered to the humanity by science and technology. One will attempt to suggest possible innovative approaches to confront
the future in view of the “realities of today” or “new realities”, an expression used by Drucker (1993). These opportunities can be viewed as risks or dangers, and without a doubt they encompass a wide margin of uncertainty; but also by accepting this inherent insecurity, they can be taken as a challenge.

**Revitalizing Humanism**

The first suggestion is to humanize scientism, an end or a goal full of meanings and for which the development of globalization is calling. It is necessary to transcend the scientistic view in order to arrive at a more convincing science, a name much more appropriate. This requires relegating the value of efficiency to its proper place, promoting the value of justice and dismissing the prevailing mentality of efficiency, because no dimension of life can over-power and tyrannize others to such an extent. Here arises the great question of civil society; that a society which does not trust its existence to the technical decisions of “experts”, but rather puts faith in the revitalization of communities of primary citizens and in an active presence within the public sphere, according to the analysis made by Llano (1991). A new humanism awakens which is not exclusively resolved to the re-vindication of the humanity within education, much less if, as often happens, this focuses on humanity culminates in a simple increase of teaching hours within the humanity curriculum. The real humanism that is being advocated has a great impact on the education of the sciences, especially on formalism and positivism, ideas which often dominantly characterize them. It requires a rethinking of decisions for the academic curriculum that are in agreement with this from its formative dimension, rather than its scientistic dimension, that is, taking as an election and communication criterion of the educational potentialities of letters and science, before the raging topicality of knowledge and its informational appearance only. This implies, in the letters, the preponderance of the classics; in science, increased attention to the principles rather than the processes.

**Knowledge vs. Information**

The humanization of the “knowledge society”, the name that usually describes a social configuration made favorable by the new information technologies, is dependent upon following the guidelines. It is commonly recognized that these technologies triggered globalization, or at least, the cause of its increasing acceleration. Precisely because of its name and its obvious purpose: They represent risk and challenge, providing flexible and rich information to nourish human actions.

The well-known verses “Choirs of the Rock” (Elliot, 1978) puts the questions addressed here into perspectives:

1. Where is the wisdom we have lost in knowledge?
2. Where is the knowledge we have lost in information?

But it happens that knowledge is more than just information, and together they do not grow alike. It is false to believe that with more information there is greater knowledge, yet when this is believed, we will fall into the great educational error denounced years ago by Maritain (1969, p. 17). Confusing the means with the ends leads to the existential confusion of modern man which is distressingly greater than the man of the past, as is noted by Scheler (2000). When facing with real issues, uncertainty and perplexity are frequent reactions, to the extent that is possible to speak of a tendency to perceive reality in a relativistic sense. In this regard, the historian Johnson (1983) stated it accurately when he said, “Marx, Freud and Einstein convey us the same message: The world is not what it seems”, although they were very different personalities, and from various areas of science after all.
Information is a means, and as such, should be looked after and improved, but keeping in mind its absolute end, the knowledge. From it, the first thing is not only that one sees a large amount of information useless, but usually paralyzes the knowledge and thus prevents it from being conclusive, interferes with choices and polarizes decisions. Likewise, within education, knowledge is another means, without a doubt the means per excellence, but a means nevertheless, with the ultimate educational goal: the formed person, again according to the words of Peter Drucker. Regarding the formation, the knowledge society calls for radicalness and responsibility rather than a critical sense: word of ambiguous meaning. Go to the root of things, without staying on the surface of appearances or being satisfied with the statement of “it is said”, and also be responsible for your own decisions, without trying to avoid its consequences or passing them on to others. These are two valuable guidelines for education, always available, but more acutely seen within the knowledge society in the use of these new information technologies.

**Technological Progress**

The strength and growth of science and technology have given them a leading role between the social, family and labor relations. Nowadays, it is impossible to think of an area not influenced by science and technology. The divine command to dominate the Earth has perhaps never had such an effective impact as it does today. The modern mind has brought about a change between man and his surroundings. Up to this point, man’s mind is concerned with contemplative issues revolving around man and his/her world. The Humanism of the Renaissance, in which man was the center of all intellectual interests, gave way to the triumph of scientific method, the growth of empirical sciences, the transformation of the world, as Marx (2004) concurred in his famous thesis about Feuerbach. The passage from the predominance of empirical method to the height of technology is nothing more than a logical consequence within this derived process of change from contemplation into action. Method helps us explain the laws behind the evolution of the world; technology on the other hand, allows us to transform them. The capacity to transform is more important than the direction that this transformation is taking. The progress seen in technology underlines humanity’s enormous intellectual capacity. Yet it is still nothing more than a technique, which must be considered as a means. As such, progress can be used well or poorly since it is not up to the progress to determine the ultimate ends. It is here where we see shades of doubt appearing around this technological progress, often seen only as an ideal paradise. Considering that man is incapable of preventing all consequences of his actions, there always exists the possibility that unintended secondary effects may appear. Not being able to foresee them does not mean that man is not responsible for them. An entirely different thing occurs with those effects that were foreseen and obvious but were not noticed or disregarded.

**Ethics and Technology**

Many of the ethical questions which arise from an analysis of the technological progress that the world is seeing, are enclosed within one of the following two situations: unintended secondary effects for which a solution needs to be found and, foresee effects not considered yet occurring as a result of omission. Some of the questions which have recently been considered and are relevant to our area of discussion are for example: How can privacy be protected within the web and simultaneously retain the possibility of storing and
commercializing private information? How will the diffusion of content within the web affect the protection of intellectual property? To what measure does the use of this technology contribute to addictive behavior? (Anderson & Dill, 2000).

It does not appear that technological progress can respond to these questions by itself and as a result, technology can only give us answers to questions of “how” things are done but not the answers to “why” or for “what purpose” they are done. Interestingly enough, what has caused these effects to appear has been a consequence of allowing technology freedom of action which has closed the possibility of finding answers to all the questions, reducing any moral responsibility to a mere factual possibility, with the absolute end of this action being efficiency. To understand that something is technically possible, and then it becomes de facto, morally acceptable, which implies rejecting any ethical debate supporting a study of ethics in technology and thus creates ethics without any morals. Before producing efficiently, it is helpful to understand the meaning behind it before resolving the “how” it is necessary to handle the issue of “for what reason”. “The real challenge that awaits us then, is not technology in itself, but in understanding for what reason it is used” (Drucker, 1993, p. 193). In the area of education, the sense of objectives and the purpose of education should be the determining factors, especially from grade school up to the academia. This obvious premise implies particular references which are not usually used in the evaluation of the possibilities of new technologies, for example, a basic criterion of usefulness and efficiency is not in the modernization of the media, but their abilities to work adequately within pedagogy and the different curriculum (N. Bitner & J. Bitner, 2002). In this manner, the teacher is given greater freedom to teach and teaching, as a result, becoming a job of orienting and exposing (Repáraz, 2000). Reflecting on this fact one can discover an element of the sense that education contributes as a criterion in the development and the use of new technologies: the individualization of the teaching-learning process. The greatest performance that one can expect, and which should be promoted actively, is that “the new technologies allow teachers to base the teaching processes on each student’s capabilities, skills, abilities and including even their personal needs, given their practically limitless abilities to manage the information” (Repáraz, 2000, p. 18). Through the adequate use of the new technologies, one can only expect that teachers “will increasingly have more time to identify each individual’s strengths and weaknesses, concentrate on them and guide students to get their own results” (Drucker, 1993, p. 201). They will have, we hope, time to “teach”.

Speed has its risks and perhaps the speed at which technological advances leave a mark on our vital world cannot be sustainable for a long time. As the saying goes, “Dress me slowly, I am in a hurry”. In an interesting article about a world being dominated by machines, Joy (2000) asked whether or not it is necessary to put limits on the development of certain technologies and reexamine what we are doing in the light of our responsibilities and our values. Perhaps it is in this area where it is necessary to continue reflecting.

**The Education of Solidarity**

The question raised by Joy (2000) is one of the key solutions which are needed to meet the undoubted challenges of science and technology: the right and full sense of the meaning of solidarity. Man is a social animal, without a doubt. This is one of the indisputable premises, not only for the human sciences, but also for the same social practices. The educational activity is the decisive factor in this statement, which not only is a theoretical postulate, but also and above all, operates as an essential standard of all social praxis, and thus, establishes as a leading educational principle. Otherwise, the result is a more individualistic society, with its
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Corollaries of relativism, permissiveness and minimum compliance under state abdication of social responsibilities that correspond to comply, first, with civil society. The promulgation and promotion of the ideal of solidarity and it is slowly but effective implementation is a task for which education has unbeatable resources. It is an updating modulation of its essential mission: to contribute and provide adequate help to humanize humans.

Solidarity is not taught by communicating ideas or promoting values. It is taught by encouraging the giving of oneself through actions of solidarity. In other words:

Education in solidarity, understood in its fullness, does not consist of simply doing actions of solidarity as an action in itself, as lofty and generous as they are, but in shaping all social action, every act of relations within a community, referring to the giving of oneself and in receiving: such as to give acceptingly and to accept generously. Otherwise, to educate in and for solidarity will be an almost impossible task for one would have to be looking for opportunities for giving only, which would break the continuity of everyday life, skew the diversity of actions and situations that they are composed of and, furthermore this would also sap all positive energy needed to give, including the reserves of something to give. (Altarejos, Rodriguez, & Fontrodona, 2007, p. 191)

All these elements challenge the players within the field of education, educators and learners alike, to ponder an ethical consideration of the fundamental and preferential actions of their efforts. Despite the understandable urgencies of today’s social demands and the consequent rush and haste in pedagogical proposals to deal with them, even more urgent is the necessity to respond calmly to the goals, reflect on the genuine educational sense and pay attention to its deep content, not being swayed by a pressing activism.

This pedagogical orientation is not new, which finds in Dewey (2002) who is the most distinguishing precursor. However, the Deweyan principle of “learn by doing” must be conveniently nuanced so as not to decline into blind activism. The distinction between action and activity is settled (Rodríguez, Bernal & Rumayor, 2009, p. 6). The immanent action has to base on the transitive and outside activity of the learner; the main priority is to work, and then do. Tasks can be done without involving an active desire of will or a full performance of intelligence, things can be done without having reason to act or perform; this is blind activism.

Aristotle said that beautiful things are “those that one does neglecting one’s own interest” (Rhetoric, 1336b, p. 30). Facing with beauty, the value of utility is clouded, for “beauty is for itself preferable” (Rhetoric, 1364b, p. 25); according to Aquinas “what catches us for its own value and attracts us for its own dignity” (In X Ethicorum, lect. IX). It is all about taking care of and wisely using the present so that the future does not devastate the present. To sum up, what is important is to gain time, which can only be done lucidly and sensibly by outlining the goals and distinguishing them from the means, an ethical task for, “morality is the way to go through existence without allowing time to debilitate” (Spaemann, 2006, p. 22).

Educational Criteria

Three possible approaches have been suggested in line with the new realities that science and technology present us: The first is to revive humanism. Secondly, the knowledge society appeals to radicalness and responsibility, and it is also a response to our own decisions, without avoiding its consequences or passing them on to others. Thirdly, the correct and full sense of solidarity is explained.

It can be concluded that highlighting some educational criteria and suggestions will enable parents, teachers and students to get the most out of the means towards personal growth that science and technology offer us. They are not intended to be an exhaustive relationship but rather an orientation as to where the task of
education should be developed (Turiel, 2002).

Among the educational criteria, the authors have highlighted four aspects that should be considered:

(1) Knowledge of used means: Most parents and teachers are worried about many activities which their children and their students participate in can affect their physical and mental development as well as their academic achievement. For example, with whom they hang out, what they drink, if they smoke or not, what kind of movies they watch, the books they read, and so on. Therefore, it is only a common sense that they should also care about the content or the message of technological tools they use (Costa et al., 2010). Accessing that information is key to educating children and students about the content and purpose of those tools. In this sense, the best way to relate to an audiovisual message, to understand and interpret it, is to approach it by dominating its characteristics;

(2) Time and moment control: One of the questions most frequently asked by parents and teachers is how much time is it recommended that children play with these technological games and tools which are at their disposal. The answer seems obvious because one cannot speak of an optimum amount of time since it is determined by many diverse factors. In principle, no one would think negatively if their children were to spend a portion of their weekend reading or doing sports. However, if the children were to do nothing else all day, or spent a disproportionate amount of time doing that, it would also logically raise concern. Similar criteria can be applied to the technological means at their disposal.

Playing time is as important as it is the moment that one begins to play: The use of such technological toys or tools should never replace other activities such as study, work, time with family and friends or other leisure activities (sports, reading, movies, etc.). It is a good idea to come to an agreement or understanding with the children regarding the amount of time for playing, making the rules clear and the consequences of failing to follow the guidelines clearly too (Rudduck et al., 2000);

(3) Promoting leisure time: Educationally speaking, it is always best to offer opportunities than prohibit them. It is a greater sacrifice for parents and teachers, who deny themselves many times, but it is certainly much more efficient.

The uncontrolled use of technological games and tools is often the result of an inadequate family environment which does not place enough emphasis on education and where there is a tremendous amount of free time that is ill used. A family environment which offers different types of leisure activities will favor these games being placed in their proper contexts (Tarkovsky, 2003);

(4) Identifying risk situations: It is important to pay special attention to unusual changes in behaviors or moods (Dishion, Nelson, & Bullock, 2004) which may be the result of an exaggerated use of these technological means:

(a) Compulsive use can be understood as taking every opportunity to use and play with these tools;
(b) Lying about the actual time spent using the technology;
(c) To spend time on thinking about using technology or to become anxious or worried when one cannot play;
(d) Sharp and unexpected drop in school performance;
(e) Strange changes in character and behavior, mood swings which are difficult to explain, and a neglect of other activities and friends.
Educational Suggestions

There is no doubt that the reality of this problem in itself is rich and complex. Along with the educational criteria to be suggested, a study of the resources available to put them into practice will be made:

(1) Initially, parents and teachers would have to question the life security: Fear of failure has now become the major inhibitor. The best service that education can provide is undoubtedly to form the personality, as the primacy of means over the ends leads to the inevitable reliance by the experts, in whom we delegate the decision-making (Lasswell & Deleon, 2009);

(2) In order to form the personality, it is important to instill the value of self-control which must be based on a formal component of virtue which constitutes all intellectual and moral education. An affective and aesthetic education, on the other hand, is based on the material components of virtue. An emotional education that advocates for the affective normality in these life-stages such as childhood and adolescence, are crucial in shaping the personality, an aspect for which parents are particularly responsible. And an aesthetic education in which beauty, for its congregant strengths, attracts everyone, whatever their cultural backgrounds is. The lack of aesthetic education in our time explains in part the disintegration of society: a person incapable of being moved by the beauty is covered by a thick shell which is impermeable to all social action (Rodríguez et al., 2010);

(3) The value of moderation would be highlighted: The use of consumer goods must be organized according to the real needs of living well (Overby & Lee, 2006);

(4) And finally, the moral education of teachers should be improved. Ethics communicates and gives meaning to all that we have at hand. The teachers should not lose sight of fact that those who are being educated are people and that is precisely what gives sense to science and technology (Liston & Zeichner, 1987).

Conclusions

An analysis of these matters is made in reference to a wide spectrum of educational activities. None of them is entirely new. However, although its actual relevance is scant, they are being recuperated or rehabilitated as a consequence of global dynamics. To put it simply, it is about the knowing and understanding of the current state of education in order to be able to focus on the future rich in opportunities. Only knowing where one is, can one decide where to go. This is what is necessary to be able to address the educational challenges we are faced with as a result of the new realities, solutions for which the three possible approaches are suggested: In the first place, revitalize humanism. In the second place, the knowledge society calls for radicalism and responsibility, and also the ability to respond to their own decisions, without avoiding their consequences or passing them on to others. Thirdly, they should understand the true and full significance of the word “solidarity”.

It seems obvious that science and technology in themselves are incapable of finding solutions to the proposals mentioned. It could not be by any other way. But if it helps to cultivate moral virtue with prudence being the first moral virtue, not as the first to be acquired but influential as an intellectual habit former and as one which affects a person’s life and perfects one’s practical reason. According to this, some dimensions of the knowledge of prudence have something to do with the past and the present, but most of all, with the future because it adds order to the conducts which should be followed.
References


