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VIRTUAL EDUCATION - VIRTUES AND SERVITUDES

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Abstract

The implementation of the new information and communication technologies in education involves rethinking training methods, the techniques of contents configuration, learning strategies, assessment procedures, the relational and attitudinal context, etc. Any technical innovation, 'absorbed' by the educational system, generates transformations, which, from the point of view of their value, may be ambivalent, involving the emergence of new opportunities and acquisitions, which deserve to be taken advantage of, as well as awareness of, and/or responsibility for, the existence of certain precautions, losses or even risks. Based on recent developments, this paper aims at formulating several questions, challenges and solutions, that might lead to diminished deficiencies and increased advantages, through an exploratory, anticipatory and, obviously, preventive approach.

Key words*:* cyber culture, digital textbooks, information and communication technologies, training, virtual education

I. Introductory remarks

The word "virtual" has its origin in the Latin "virtus", which means "power", "force". According to the philosophy of the Middle Ages, the virtual referred to that something which exists as possibility, not as an act. The virtual does not oppose the real or the achievable, but the actuality, "the present" from nowadays. The title of this article is intended to be redundant, bringing new terms with the same etymological origin, respectively "virtue" and "servitude". The Romanian terms "virtute", "virtuţi" (which come from the Latin "virtus", "virtutis") mean righteousness, virtue, bravery; strength, power, vigour, physical strength. The Romanian words "servitute", "servituți" (from the Latin servitus, servitutis) signify a state of dependency, vassalage; slavery,

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servitude, obligation, coercion. Both terms have an axiological connotation, being related to attitudes and character, and behaviour placement. Virtualization as a process means the reversed movement of updating, moving a thing or an activity in the area of the possible, of evolution and possible future whims, lack of accurate determination of space and time.

Virtual reality is a simulation of the world obtained through the manipulation of models, structures or specific connections. The most recent simulation tool seems to be the computer, which is seen as a (well, maximized) simulacrum of functionality and performance of the human brain. The specificity of virtual reality is not the mere reproduction of some real models, but the opening of a fan of potentialities by overcoming the properties of real things. The main feature of the virtual world is *autonomy*, respectively the capacity of this artificial reality to exist on its own, without a concrete rootedness, but who has effects on the reality by revealing, inventing and expanding it.

The virtualization movement (of replacing one thing with another, of moving our actions from the actual to the possible) represents a vector of the evolution of existential structures, from primordial, natural forms towards derived, artificial, sophisticated forms (see Pierre Levi, 1995, p. 17). At an anthropological level, a triple process of virtualization takes place:

- the virtualization of the immediate present through the means of language (what cannot be explained at the level of behaviour is transferred at the level of linguistic expressions),
- the virtualization of physical actions through technical tools (what is not possible to be done by one's body has been taken over by devices or technical inventions),
- the virtualization of violence through the means of the contract (what proved to be destructive and a permanent source of conflict was negotiated and, finally, people agreed on it).

The virtual changes our relationship with the world, things, space and time. Place is no longer defined from a substantial viewpoint, but there are also highlighted new properties such as connectivity, meaning the possibility to establish new connections, to become an active communicator, in reverberation and informational vibration.

As a process, education has always counted on and involved possibility. The finality of formation did not envisage the nowadays individual, but the virtual one, as one has been foreshadowed at a specific moment. Moreover, education has not only been tempted to update (types of behaviour, attitudes, values), but also to intensify future states, directing the individual on a specific path, having specific objectives (see Cucoș, 2006, pp. 21-22).

II. Recent prefigurements

Lately, we have seen that people subscribe for training or for specific educational steps in a virtual environment. The multiplication of lines of open and distance education, the inclusion of cyberculture as a new referential in learning, the involvement of internet as a source and didactic means, the real-time multiplication of connections between the partners in education mediated by the computer, the reference to cyberspace as a privileged environment, the informatization of education in general represent eloquent examples regarding the announced evolution.

The virtual world is a recent cultural reality, induced by nowadays means of communication and information, which maximizes connectivity and interaction between the subjects which support the communication act. As a contemporary techno-social fact, this (r)evolution has direct consequences over education, both in enabled institutions and in informal environments.

Like any technical innovation, the virtual world presents an ambivalence of usage, ethical-praxeological, meaning that it can lead to benefits and new opportunities, but also to precariousness and illnesses regarding the individual or the community. The positive assumption of this reality and the depletion of negative consequences can be regulated through our training or educating process in connection to this reference point. Under all circumstances, the virtual world is not a neuter reality, exterior to school, but it has the tendency of "entering" inside it, overlapping it, modelling, determining and modifying it. As an opportunity and training device, the school itself becomes aware of this anthropological reality, being subject to reform, harmonizing the old and the new, the traditional and the contemporary, the stable and the variable, the individual and the community, the known and the unknown.

It should be underlined the fact that valuable content itself, which becomes a learning reference point, can be better shaped in order to be internalized, for it is known that the environment influences content, modelling, "informing" it, changing something in its substance. The transmitted content receives "adds-on" from the shape of the environment, transmissibility itself becomes a hypostasis or "a part" of the transmitted content. On the one hand, this explains the fact that a message is incessantly built, through impulses which come from the transmission environment, but also from the receiver of the message, the individual who "supplements" the transmitted knowledge with data connected to one's communication experience or to internal reasons which are permanently changing. On the other hand, we should not forget the fact that the traditional culture itself changes its "face", being translated in the new formal body (the digitization of books, libraries, the virtualization of museums, of schools etc.), this reality leading to new representations and availabilities at the level of beneficiaries.

Thus, cyberculture becomes some sort of interface of culture itself and it englobes both the traditional, old, classic culture translated in the new context and the new formulas that the autonomous environment allows for. The new technological environment brings to our attention a new form of literality (one's personal blog, for example, which allows every actant to become a ""writer"), of art (graphic PC design, electronic music etc.) or the intrinsic art of the informatic environment (web design). Anyway, one cannot leave aside this structure, nowadays school curriculum has references to it or there are integrated hypostases in its content. Consequently, cyberspace becomes a reference element and also a possibility to learn new structures of usage and appreciation of the new context. To put it differently, in school, teachers will refer to capitalized knowledge, but there will also be developed the digital abilities meant to use this capitalized universe in a convenient way. In a report of the *Commonwealth of Learning*, coordinated by Glen M. Farrel (2001), the *main* tendencies of virtual education are underlined and briefly presented through the following three features:

1. The distention of the opportunities for virtual education. More and more educational instances which envisage initial training, basic or lifelong learning, form complementary structures, which are adjuvant or which have an independent existence, belonging to the virtual world.
2. The conversion of networks and technologies of information and communication in instances having an educational purpose. From the beginning, these devices have explicitly educational purposes, carefully thought of and managed in order to maximize the formative dimensions. In this respect, an entire industry specialized in tools, programs and digital structures were born.
3. The invention and promotion of new pedagogical tools which offer support or are delivered through the means of educational networks. These tools have a high transferability degree, becoming functional in different cultural environments and converting multiple curriculum content.
4. The forming of a new pedagogical culture which offers support and advice to the people who learn in the context of educational virtual networks or on-line. The procedural and methodological fan having a psychopedagogical nature is re-dimensioned according to the new realities.
5. The development, testing and implementation of new organizational models, oriented towards the management of learning in the context of new technologies. Organizational

structures are renovated or replaced with new instances or institutions focused on the management of knowledge delivered virtually.

6. The assurance of quality control through finding clear formulae of accreditation, of tracking and validating virtual learning paths. Quality is a dimension which cannot be neglected. The rules concerning legislation, deontology, didactics come to axiologically direct new formulae of making education possible.

III. The digitization of the support for learning

The introduction of digital textbooks also raises some pedagogical problems, beyond economic, sociological or educational politics obstacles. A change of learning asks for evaluation also from the perspective of the psychology of learning and of a specific didactic frame, in order to identify both positive consequences and possible obstacles on a medium or short term. This is the reason why we will mainly focus on evaluations of this kind.

The transition from the classic textbook to the digital one is part of a larger movement of digitalization and cultural virtualization. Nowadays cultural support and their transmission environment have not been influenced by the innovative products of information and communication. The old book or the contemporary one, the painting from the exhibition room or the museum, a concert or a theatrical performance can be read/ listened to/ appreciated also through the means of their digital "double" which arrive to us through informatic materials (DVDs, for example), or through internet paths. Almost the entire classical culture has been transposed, from the point of view of its transmissibility, into a digital version also. Obviously, even curricular support has been influenced by this evolution. Our educational system has already had various opportunities for people who have been taught how to use a computer (sequences or lessons facilitated by computer, specialized platforms having stocked information etc.). The idea of introducing learning based on an informatic support is placed on a *horrizont d'attente* which could favour or motivate learning, at least for some age categories.

The digital textbook should not be understood as a double or as a substitute of the printed, real one, but it should be regarded as another product, made on new principles of explaining content, following varied methodological procedures applied to content and based on a philosophy of learning meant to enhance activism, interactivity, progressiveness and creativity. The digital textbook, which is more obvious than the classical one, is not an information depository, but a learning instrument which is also designed to process/provide meaning. The identity of content,

through the topics and subtopics announced by the curriculum, is preserved, but not from a formal-structural point of view, for the digital textbook displays information or suggests activities based on another logic of succession or connectivity. Moreover, it assures the content's integrativity, for it may include or send to supplementary informative sequences – written, auditive, video recorded etc., which may be used by the beneficiary student at a certain moment. Multimedia technologies, especially the interactive ones, can play a special role in the discovery of new knowledge and values, in an agreeable form, according to pupils' needs.

Digital transcoding (cf. Mingasson, 2002, p. 85) supposes supplementary specialized operations – both from a didactic perspective and an informatic one – and it is assured by specialized teams which should involve at least the teacher, the psychologist, the expert in communication, the software developer and, eventually, the designer, because we live in a world in which appearance, forms are capable of potentiating or compromising content. In other words, the digitalization of learning supposes a change of an important hypostasis of the curriculum – the one which is made available to the pupil through the means of the textbook. Well, it is known that a good curriculum, well-thought on the long term, cannot be done in a year or two, but it takes several years of analysis, expertise, testing, evaluation, retraining. Despite all these, we are aware of the fact that nowadays, the time for reflection and reaction needs to be shortened.

Compared to the classic textbook, one should not develop an ideology of alternativity or of total replacement of the traditional format with the new one, but one of complementarity, progressive annexation in the learning space, being additional material to the existent one (books, textbooks, other educational means), representing a new source or opportunity of learning. The sending of the printed textbook to the "cesspit" of history does not seem to us to be neither opportune, nor wise. There are sequences or situations when the interaction with the textbook as an object is needed, either for psychological reasons, didactic, or anthropological (it refers to filling in by hand specific answers, requirements etc., involving calligraphy or "spelling" the first letters, following the word, letter by letter, on the sheet of paper, these are by no means obsolete activities from the perspective of the psychology of learning). Moreover, the introduction of new cultural techniques should be prefaced by impact studies, pilot-research (for dimensioning, evaluating, calibrating and correcting new procedures in connection to concrete, unknown, unpredictable situations), but also supported by collateral strategies without which the digitalization of textbooks cannot function (the existence of a technical support and of specialized human resources in schools, the training of teachers in order to be able to use new technologies, the assurance of access and equality of chances etc.).

Learning through digital textbooks favours the development of metacognitive structures, association and integration abilities, both horizontally and vertically, intra- or interdisciplinary. This means that pupils should already have basic skills of reading, recognition, interpretation of signs etc. which can be acquired through the means of traditional learning materials. On the one hand, at a specific moment, information can be given only partially, for it can be generated plenary by/with the pupil. From this point of view, the question which immediately arises is: from what age (class) would it be appropriate to introduce learning based on informatic support? On the other hand, the ease that pre-school children have when they get attached to their wanted and (almost) omnipresent tablets can be considered one of the arguments which would encourage an early implementation of the digital in our educational system. Despite all these, one should study if learning writing-reading is adequately done through digital textbooks. From an anthropological perspective, it is not necessary, in an individual's development, a phase of "natural" interaction with a real object which is the school book? Mechanic learning only has a literary-sentimental value, it does not represent a necessity which conditions a person's natural development?

The basic rules connected to the psychology of learning underline the fact that the study based on physical format materials is deeper and assures a longer lasting durability of what is incorporated. A series of markers which exist in the body of the sequence to be learnt (or added by the person who is learning) lead to a better retention and to higher processing of ideas. Moreover, the interaction through the means of analysers with the learning support is different in intensity and time, the digital support supposes prudence and restrictions of medical nature. We cannot make predictions regarding future and the way new technologies will look like or how powerful they will be. What is certain today is that in the following two-three decades, the analogic and the digital will coexist. This is the reason why the pen and the touchpad should meet in the same schoolbag/ bag/ backpack for a long time from now on. Giving up on physical support would represent a handicap, just like nowadays, it would be an obvious lack to (also) avoid the development of digital skills.

Maybe the people in charge should not hurry to adopt a "decree" which refers to the sudden and total transition to the digital textbook, without previous information, without evaluating some consequences. A series of studies should be made, as well as a pilot program which would be simultaneous with the creation, development and testing of a "bank" of digital textbooks which can be accessed through a multitude of already existing means. We should not forget the fact that the unification (maybe even the imposition) of similar supports (such as the e-reader, tablet) would lead to the accentuation of some gaps, given the fact that these are still expensive, while

the Romanian system cannot financially support such expenses. Not even the richest countries could afford such luxury.

We are aware of the fact that the new technologies will reform both educational supports and the basic mechanisms of accessing at a psychological level. We ourselves support and are in favour of these changes, also benefitting from them. We will surely face, in the years to come, at an "anthropological hump", from this point of view. This change will be of great importance, but it needs to be welcomed – even caused – by appropriate mental preparation.

IV. Initiation and virtues of the virtualization of education

From the point of view of pupils, the introduction of NTIC creates the premises for:

- personalized and cooperative learning; pupils individually rapport themselves to knowledge, they interact with their equals and with the teacher; in time, when technical structures become more refined, this rapport towards knowledge intensifies;
- distributed learning; what some people grasp becomes a common asset for all as long as what is new is efficiently integrated in the network; even when connections are not instantly created, in real time, each person has the possibility to find out the new cognitive element discovered by somebody else;
- lifelong learning; a computer integrated in a network brings a permanent flux of information, according to the latest evolutive trends in the field of knowledge and sociocultural practices;
- deep, nuanced, heteromorphic understanding, from several directions;
- promotion of their interest; pupils become more motivated to learn knowledge they are truly interested in;
- the strengthening of connections with similar people and with the entire world: the multiplication of connections with equal people in cultural situations at remarkable distances creates the premises of solidarity and agreements at an international level (also see Laferriere, 1999).

The process of virtualization has more components, from subjective and objective aspects, to relational and processual ones. Virtualization involves several instances (cf. Michel, 1999):

a) *involved actors*:

- the educated taken as individuals who can benefit from virtual resources at distance, by regular subscription, temporary or exceptional for different training programs;
- different learning groups, depending on various motivations: thematic groups, common projects, closed or open groups;
- trainers, especially teachers or providers of resources, not necessarily teachers who are formally recognized;
- different groups of resource people, or pedagogical groups, situated beyond the school's perimeter (study engineers, experts etc.);
- tutors, learning colleagues or other contributors who are in charge with the tutorship of stages, projects, specific activities;
- groups and mixed communities (formed from the trained people, teachers, tutors…) permanent or temporary, open or close, formed around specific projects.

b) *specific content, curricula, disciplines*:

- traditional didactic elements virtualized at different levels: lessons, learning units, chains of lessons;
- pedagogical support: case studies, bibliographies as support, reference texts, projects;
- training courses, individualized or conceived for a target public;
- peripheral content, adjacent, complementary or optional for the trainees to relate to.

c) *Procedures and evaluation tools*:

- tools of formative evaluation which assure and stimulate progress in learning (exercises, tests, questionnaires, reflective activities or punctual questions);
- tools for summative evaluation (virtual examinations, essays, portfolios etc.);
- evaluation of knowledge of each student or in groups, forums etc.

d) *resources of logistic and pedagogical support*:

- informatics and office automation resources (PC programs, shareware);
- diverse informative support (CDs, DVDs, flash memory, hard disks);
- research or virtual libraries;
- logistic instruments for projects or practical stages.

e) *procedures of management regarding training*:

- procedures of candidate selection: tests, portfolios;
- methods of enrolment;
- management of tax payment and access to available sources;
- management of evaluations, notifications, certification.

f) *the extra school environment*:

- the dynamics of the virtual campus;
- useful information: scholarships, accommodation, meals, transport;
- possibilities for free time, entertainment etc.

The NTIC principles transposed in education, for example, lead to the rethinking of statuses and roles, leading to the breaking of the old patterns of learning (teacher-pupil), making way not only for a new technical alternative (the computer), but also for other pre-school actors, with well-defined functions (tutors, counsellors, administrators, experts).

V. Limits and virtues of the virtual space of learning

Starting from the existent specialized literature, but also from a reflection on practices in the field, we present below, in a synthetic way, a few troublesome evolutions which should lead to caution and balanced, rational, critical positions in connection to the new forming context.

➢ Anonymization/ the vulgarization of knowledge

The generator of knowledge is no longer identifiable and the guarantee of a sure emitter talking in the name of the truth is gradually disappearing. The new technologies make the position of teacher shift from the status of emitter or central generator of knowledge, translating also to other people some of the teacher's epistemic authority. In education, we cannot totally renounce the teacher's epistemic authority (at least at the level of the first school cycles).

➢ Preforming knowledge

The computer produces a rearrangement and rewriting of the thesaurus of knowledge. The knowledge transmitted through the means of computer is recomposed, filtered, structured according to formal demands, inducing strategies of algorithmic thinking, connected to the "pulse" of the machine. The formal dimension of knowledge will be built according to the cognitive pattern of the tool.

- **Sequencing of knowledge**

Access to knowledge is done, usually, through the rearrangement of some items of information, through segments broken from some ensembles that are not always identified by the receiver. The disintegration of knowledge should be complemented by exercises of signification and integration in larger fields of knowledge.

- **The atrophy of certain skills**

The new systems of connecting and communicating can accelerate the communicational, imaginative or inventive abilities of pupils, but they can also slow them down or stop them if they are not used in a judicious and univocal manner. The tool is better if it makes the receiver pass from the status of user to that of producer.

- **Relational artificialization**

No matter how performant the program might be, it will not generate real objects or phenomena, but their substitution. "The subjectivity" of the computer is counterfeited, cold, abstract, reduced to essence, carefully staged, predetermined by people.

- **Alienation and the reduced connection to reality**

Through the new learning devices, there is encouraged the creation of a fictional evasion space and a counterfactual and dreamlike way of existence. Caught in the trap of the virtual space, the subjects lose the connection with the real world which is much more complex and dynamic, far from being typical and untouched by digital structures.

- **Heterogeneousness, mixture and ambiguity of values**

The virtual learning environment is something else than an isolated and closed space to the world. New actors tend to enter it: scholars, but also idiots, extraordinary people, but also charlatans, cerebral but also some who are insane. This space needs to be controlled from the "above", managed from the point of view of values through legislation (on the point of being created), but also from "below", from the emitters or consumers which manipulate a basic product – information.

- **Generates and amplifies social pathologies**

Virtual environments can fragment the social space, stimulating and materializing pathological actions. The most serious assaults which have taken place in the past years have conquered, as highly "efficient" logistics, the elements of the new technologies of communication and information (mobile phones, internet, television etc.).

Conclusion

Of course, there are many strong and weak points of this training environment and we cannot mention them all in this restrained space. We conclude that school should be focused both on learners and teachers, envisaging the acquisition of technical skills at a high level, but also of attitudes or predispositions based on human values; at the level of training, it should be created a completeness between content and delivery form, between the objectivity of the artefact and the subjectivity of human answer, information and the conscience of its value, between the performance of one's action and the responsibility of one's consequences.

To conclude, we cannot refrain from launching a few challenges and open questions:

- What would be the appropriate balance between direct and virtual interactions in school practices?
- How much one can virtualize from the substance/ hard core of knowledge for different subjects?
- How can one transfer the formative dimension of a subject to the new learning devices?
- Up to what point can we go with the de-subjectivization of the content to be transmitted?
- Does the training system of teachers allow for appropriate preparation meant to assure the integration in the virtual education environment?

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