The Educational Digital Entities as a Component of the New Hybrid and Learning School Environment: Expectations and Speculations

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Abstract

This work puts under the judgment and speculation of the educational community, the concept of the educational digital entity, that is the digital representation of the teacher or as a virtual figure with human characteristics. With the help of three dimensional graphics and advanced animation techniques, the digital entity will have (?) the possibility to imitate or to substitute the a teacher’s human existence itself mainly in regards to the lecturing of the courses to be taught. Moreover, as part of this work the methodology of the development of a digital entity is determined, its introduction as a pilot in the educational sector is described.

1. Introduction

The emerging Information Society [1], is marked by a reversal of the basic relationship between man and information [2], meaning that in our days the digital information – in the form of products and services – is flowing through to the people looking for it through the screens of their computers, without having to leave their place, gaining precious time, improving the conditions of our everyday life. The area of education is the most important priority of the Information Society, one of the most important mainstays of the new digital age [3].

2. The basic characteristics of the hybrid learning environment

The basic characteristic of the traditional model of education, was the simultaneous presence of teachers and students in the same space (the course room) and at the same time (schedule). The best possible use of the basic services of teleconference and electronic exchange of messages and data [4] in combination with the Internet makes possible the implementation of open and at a distance education [6]. Forming a completely different learning environment, within which the basic relationship between the teacher and the student is reversed. The simultaneous presence of the two mainstays of school education (teacher – student) in the course rooms is not anymore a precondition, since the teaching – lecturing procedures, which are of the highest importance, can take place through a PC [7].

As hybrid environment is meant that learning environment, within which the best possible combination of modern applications of technologies is attempted – which liberate the educational process from its space and time bonds – and of the respective pedagogic reports based upon the traditional school approach of the educational process [8].

3. The educational digital entities

With the term digital entity, we refer to a virtual figure with human characteristics, which tries to imitate or substitute human existence itself in its various manifestations [9]. With the help of three dimensional graphics and advanced animation techniques, digital entities are part of an unknown up to now environment, as part of which the virtual aspect of their component parts flows through to the tangible and intangible elements which make up our everyday life. An educational digital entity, will be in essence the virtual representation of a teacher, and will undertake in the course rooms a part of the teaching of the scheduled courses.

As part of a comprehensive hybrid environment [10], the students will be connected –from the place of their choice through the Internet- with the digital entity at the time they want to. The whole endeavor will be taking place under the supervision of the Ministry of Education and the pedagogical institution, while it is going to be applied as a pilot in pre-selected schools based on geographical, educational and other criteria. The steps for
the realization of the project inductively can be described as following:

1st Step: Working out – development of the form and the characteristics of the Digital Educational Entity. Description: The characteristics of the entity, which must be approaching the average characteristics of the teacher of a course, are defined in detail. Involved Parties: All groups. Result: the form of the entity.

2nd Step: Transformation of the courses to be taught to the digital educational entity. Description: The courses to be taught are divided in sections based on a fixed number of teachings. The major points on which the digital entity must focus are underlined so that they are mentioned in the teachings. Texts are prepared which will comprise the content of the teaching and which will have for the sake of our sample the following form: Text, Text, Text, Text, Text, (the voice of the digital teacher is normal). Text, Text, Text, Text, Text, (the voice of the digital teacher slows down emphasizing the selected text). Text, Text, Text, Text, Text, (The speed of lecturing by the digital teacher increases). Text, Text, Text, Text, Text, (underlined text signifies a question or a query). Involved Parties: The group of authors and educators. The group of psychologists pedagogues has a consulting role. Result: The teachings (lectures) are formatted into electronic form (word processor) based upon the above rules.

3rd Step: Development of voice techniques and text – speech systems. Description: The formatted texts are transformed into voice based on the specifications that have been set. The voice is entered into the text and speech processing system, so that the entity’s face and mouth motions are in harmony with the content of the teachings. Involved Parties: Animation experts group, text and speech processing system experts group. Result: The educational entity acquires a voice.

4th Step: Testing period. Description: The digital entity teaches its first courses with the work parties (groups) as the audience, which make the necessary corrections, modifications and changes. Involved Parties: All groups. Result: The educational entity acquires “existence”.

5th Step: Indicative pilot operation. Description: The educational entity gives its first lecture to selected student classes, who have been selected with such criteria as their performance, geographical distribution etc. After the end of the lecturing the instructors clarify various points, answer possible questions. At the end of the pilot operation period the progress of the children is evaluated, while at the same time they express their views about the new system. A statistical data processing follows in order to draw conclusions, which afterwards are going to be useful. Involved Parties: All groups, selected classes of students. Result: A first package of evaluation data about the educational entity. Depending on the evaluation of the educational entity and the correlation with the other statistical data, the modifications continue until the work party judges that the digital instructor can appear in school classes. The future of the experimental educational entity depends upon the degree of its acceptance by the educational and student community, as well as by the children’s parents.

4. Conclusion

The development of the educational digital entities, is considered by many as a completion of the digital environment of the new form of education, since it ensures pedagogic and tutorial uniformity which will be materialized by work parties, which will consist of teachers, child psychologists, pedagogues etc. However, for some others it is the beginning of an Orwellean scene in the fragile area of learning. Expectations, worries, fears and speculations make up a double-meaning puzzle in the beginnings of the third millennium.

5. References