As a basic element instigator of reflection on learning in virtual worlds one can pose the question: “Why are virtual worlds growing in importance and may these solutions represent a strategy to improve learning quality?”

Starting a reflection on these issues, it is worth analyzing some perceived shortcomings in the educational scenario. A general finding is that one thing missing in education nowadays is the capacity to prepare individuals able to find solutions for faced problems using all the knowledge and technology available today. Even in countries where the use of technology permeates society more intensely, there are concerns of education authorities in preparing the future citizens of the 21st century for the use of computer applications in everyday life, finding and using information necessary to support the most varied decision making processes. The ultimate goal is to enable problem solving situations as they are introduced using the available resources. This involves formulating hypotheses on the basis of the obtained information and experience courses of action that may or may not lead to desired results. This pattern of behavior can and should be encouraged throughout formal education, but unfortunately has been used instead as a more directive approach by educators and a more passive role on the part of students.

When searching for conditions for this more investigative educational approach, based on experimentation, there is a perceived gap recognized in schools and even in universities regarding the lack of laboratories, especially for science learning. This situation severely limits the ability to use a non-directive in place of an overly theoretical approach since the possibility of experimentation is not possible due to lack of conditions. Reason derives from insufficient equipment, materials, and even space for conducting an experiment, even with no specialized features. In some cases, experiments cannot be performed because the risks for students, for the environment, or even in terms of cost of resources. Thus, although there is consensus that the experimental activity is essential to the teaching and learning of science, it seems that in the school environment, this is one of the activities that has little chance of being done. Considering the constructivist learning proposal as the development of knowledge being a result of interaction with the environment, this gap becomes more critical because it implies smaller conditions and opportunities for students to participate in an active learning process.

When analyzing the availability of the computer lab in schools, the situation is slightly more favorable once a good percentage of the schools have some computer infrastructure and Internet access.

On the other hand, it is also widely known that the student population in the country currently has enough level of information literacy. Given the state of the resource availability of computing in schools and the level of information literacy of students, one can see that it has opened a window of opportunity to alleviate the situation of using information technology and communication. Current use of computers by students is mostly dedicated to conducting research, carrying out school homework,
answering lessons and exercises proposed by the teacher, play educational games, prepare presentations for colleagues, learning to use the computer and the Internet, and interacting with the teacher. But there is growing realization and demonstration that there is a fairly wide range of new strategies for the use of computers in education, and the virtual world is one alternative, offering a new learning space that starts to become viable.

Technological development and the rapid increase in computer processing power has led to the possibility of deployment of virtual reality based on desktop computers or other devices accessible to students, in school or home. The availability of a high speed Internet connection further increases the use of virtual reality technology enabling user collaboration in an immersive virtual environment. Although virtual environments based on desktop computers failed to provide a totally immersive experience as in more complex environments involving caves and specific hardware for visualization, the quality and realism achieved with the graphical resources available in desktop computing is sufficient to increase student motivation in the educational use of these resources.

The potential of virtual world technologies to improve the quality of teaching and learning has been increasingly recognized by researchers of education. In recent years, there has been a growing number of studies examining the impact of virtual worlds on student learning and achievement in different areas, and the adoption of immersive virtual environments in education grows as a result of these factors. Consequently, the work done by researchers like Eliane Schlemmer and Luciana Backer is especially relevant because they discuss aspects of immersion, telepresence, and interactivity as an educational resource. Their research and the experimentation developed bring new benefits to using virtual worlds as an educational resource and will certainly help to speed up the assimilation of this new technology strategy as an educational resource with qualitative and quantitative benefits in terms of increased learning quality.

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