VIRTUAL TEACHING IN THE MODERN EDUCATIONAL SETTING

LAURA-IONELA IONICĂ[G]

Abstract: *Cutting-edge technologies have quickly gained momentum in the field of virtual teaching. The teacher's role in the educational act is not only supported by the students' engagement, but also by innovative learning tools. Online environments stand for new challenges to be applied to blended and traditional environments as well. Implementing virtual tools and managing them appropriately is a step forward well-rooted and efficient instruction.*

The present work aims to explore both the extent to which such virtual tools can be best utilized to deeply involve students in their learning and the impact of technologies on learners' performance.

Keywords: *virtual teaching, engagement, learning tools.*

The instructional process in a technology-dependent society is highly diversified and brings about unexpected results both in terms of teaching and learning. These two dimensions of education are no longer dealt with in a conventional way, due to the emergence of a wide range of technologies whose role is to facilitate the learning process and to provide students with a broaden horizon of knowledge.

Nowadays, exposure to technology in terms of communication easiness or information dissemination contributes to a better insight into the cognitive side of learning. Although perceived as superficial because of the huge flow of information, students acquire more complex abilities as regards selection or reflection on what they learn. Once they obtain chunks of information, they never stop exploring wider areas, analyzing them more thoroughly and reflecting on different possibilities of interpretation.

Understanding the role of technology in virtual education

Application of a framework for identifying when and why we should use technology in an educational setting is the first step towards a better understanding of technology usefulness. Many people wonder whether virtual teaching should replace traditional teaching or not. In order to make a point favourable to virtual teaching, there should be brought up the following ideas:

a. students are generally community-focused and social. Therefore, they prefer to interact with one another in the form of a continuum. They interact socially, accumulate experience and bring that experience back into the classroom.

On the other hand, they are feedback-driven. They always want to know how to carry out different tasks and receive the right feedback. In support to the idea of feedback, Bellon *et al.*, stated "academic feedback is more strongly and consistently related to achievement than any other teaching behaviour...this relationship is consistent regardless of grade, socioeconomic status, race, or school setting. Feedback can improve a student's confidence, self-awareness and

[*] University of Pitești, lionica1976@yahoo.com

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enthusiasm for learning. Effective feedback during the first year in university can aid the transition to higher education and may support student retention". (Bellon, J.J., Bellon E.C. & Blank, M. A., 1991, *Teaching from a Research Knowledge Base: a Development and Renewal Process,* Hall, New Jersey, USA).

b. despite being deeply social, students are also interested in working and rising individually in order to connect what they are learning with their lives. This type of connectedness, for example, helps students in engineering to relate their theoretical background to the practical side of their prospective qualifications.

c. being endowed with visual skills, learners are great multi-taskers and like getting in contact with all sort of devices and technologies that help them to make progress.

Implementing virtual teaching complies with students' familiarity with technology and comfort they create while activating into a virtual space. Before adopting virtual teaching we, as teachers should take into consideration the learning theory in terms of its social, collaborative, active, constructivist and problem-based aspects.

Learning acts as a social phenomenon that participants take full part in. It is collaborative in nature, since students equally contribute to accomplish their tasks. Heterogeneous groups in terms of ethnicity, social status, personality etc., work successfully because they harmonize one another. While working collaboratively, students become more self-confident and develop a higher level of tolerance for other people's opinions. For instance, a translation course is best dealt with by students, since personal contribution helps to create the most suitable text version. The more the variants, the higher quality the translation act.

Active learning insures that students are fully involved in activities. They are no longer passive recipients of information but highly dynamic and constructive.

Problem-based learning requires students to be thinking holistically about a problem or a concept and not very specifically about a task. Technology is not only a popular term; on the contrary it prevails in today's educational setting and is closely connected to positive outcomes. It helps a teacher collect important data about his students and their response to virtual teaching. Technology also increases collaboration and communication in order to create the suitable learning environment.

When should or shouldn't we use technology?

First of all, technology should be used to provide students with access to a wide range of materials, which otherwise cannot be accessible. Secondly, it improves learning outcomes and gives opportunities for continuous improvement. At this rate, teachers find it easier to explore students' skills, their experience and therefore, improve their teaching methods to comply with their students' needs.

However, there are times when technology shouldn't be used. Unless students are ready to use its tools appropriately, they won't be successful. Sometimes, due to lack of training in using technology or due to technical problems during the teaching process, students are prone to waste valuable time. Since teachers are most interested in maximizing every minute in terms of students' fulfilling or understanding tasks, it is vital for the latter to be at the same level in using technology and be able to face and solve any potential hindrance.

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Distraction from the content and skills in the lesson stands for another drawback in using technology. Students may be so wrapped up in the tools that they simply forget about the real objectives.

In terms of privacy, students may not be fully protected irrespective of all the promises that technologies make. Therefore, teachers should pay much attention to security of information. Under the circumstances, an accurate evaluation of online educational services becomes a requisite prior to implementation. Therefore, legal agreements between the school and the source provider as well as access to free services that do not imperil students' privacy should be used on a large scale.

Watching different tutorials or interactive exercises without students' being obliged to log in may be a sign of security. On the other hand, the written consent of the students' parents is also necessary in order to avoid possible legal repercussions.

Technology in context

Teachers generally ask themselves when and how to use technologies in order to fully benefit from its advantages. Technology is used to present and distribute content. It also helps learners to collaborate. The foreign language class is known to be mostly based on collaborative work and students need to integrate into this format and cooperate with one another in search of the most expected outcomes.

Since technology is present in real-world applications such as communication, robotics, aerospace, medicine etc., it should be used appropriately in each of these contexts. For instance, students in *Machine Construction Technology* should be highly familiar with cutting-edge technology in terms of how to use robots or computerized commands to fix machines. Digitally focused activities have increasingly simplified work and reduced execution time in various fields of activity such as manufacturing, banking, designing etc. Part of car mechanics, for example, is no longer a palpable or hand-made problem, but a computer-based strategy, according to which accurate parameters and values are being established. Only some solid engineering knowledge and practical experience can help learners to identify and correct possible errors that occur during the manufacturing process.

There are times, though, when technology is detrimental to everyday context. A computerized car or plane that signals any board technical problems may become a real burden under different circumstances. On the other hand, any disturbance in the banking system may also create an instant economic disaster with irrecoverable consequences.

Student-teacher communication is another dimension of technology. This is useful for a teacher to find out whether his students understood and developed the concepts they work with. Most of the times, students respond correctly to newly-learnt concepts, without stating their defining features. Take the concept *door*, for example.

If asked to locate or describe a *door*, any learner would do it without any trouble. On the contrary, the concept of *shaft* requires some technical preparation, since more difficult concepts need more accuracy, description of the main features and comparison.

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Teachers realize whether students have understood a concept if the latter identify examples across a wide range of varying features and demonstrate this with examples presented during instruction or while learning the concept.

Types of technology

a. Devices

In order to develop a virtual learning environment, teachers need to use some devices whose role is to increase learning efficiency and decrease time allotted to fulfilling tasks. Desktop computers, content books, laptops are specific devices used during the teaching process. They may be simple in their operational modes, but their usefulness in spreading information in real time is undeniable. Tablets and smart phones, on the other hand, help to operate with texts or to augment reality. Students in engineering make significant use of smart phones, which provide them with online dictionaries or corpuses useful to understand new concepts and apply them contextually. Visualization of a concept like *coil* has double benefits for the learner who thus knows its meaning and usage. In case familiarity with various concepts lacks, visual contact as well as examples provided by the online source are more than suitable to operate with when required by the context.

b. Communication and collaborative tools

In order to avoid isolation in the virtual classroom, teachers give students the opportunity to interfere with their peers by developing discussions or group assignments whose prevalent role is to make them feel part of the academic community. It is no longer independent work, since students interfere with one another and with their teacher. Through collaboration, learners are more engaged in the educational process, because this triggers comparison, reflection, changes in the learning flow etc. Such a virtual environment creates more responsibility and engagement. Students are no longer single entities, but enlarged social networks based on information or expertise sharing.

Both psychological and social dimensions have a lot to gain from peer interactions. Psychologically, students who face difficulties in integrating socially, due to adaptation, family or health problems, find it more convenient to work in a virtual environment. In social terms, learners are more easily assimilated by groups and determined to get involved in certain activities.

Replacement of conventional teaching with the virtual setting will have long-lasting positive outcomes both for information providers and beneficiaries.

c. Assessment tools

Such tools are used to evaluate students' skills and work, the course success, to align and report on outcomes and to provide peer-review. Peer-reviewing is a valuable way for learners to get a deeper understanding of their work. Subtle interpretations, commonly used mistakes, deviation from linguistic norms, are generally tackled with by specialists who, apart from having their limitations, provide learners with an accurate analysis of their work.

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Gathering feedback is another way to establish how students feel about the learning experience. They find out whether they have grown or built new skills or if they have become more reflexive.

Evaluating and implementing technology

Implementing technology in the class triggers learners' engagement and contributes to changing the class dynamics. In a student-focused educational setting, it is necessary to use various tools to comply with the learning process, whether it is the way learners operate with newly-acquired concepts or the completion of assignments.

The major role of technology tools is to turn the learning process into an attractive target or a source of delivering a stimulating and exciting content.

The exploration of a country's geography, for instance, may become a unique experience by displaying topic-related videos or images by means of technology. An ordinary computer may bring the whole universe inside a classroom, and learners can take full advantage of the abundance of information which further provides new life experiences.

Unfortunately, access to information is sometimes limited due to learners' lack of interest or to teachers' incapacity of exposing them to a wide range of multimedia or digital content. Such limitation generally comes to the detriment of students because it prevents them from becoming creative or brings about discomfort in terms of tools' extensive usage. Teachers themselves are sometimes bewildered either because they do not fully understand the technology they make use of or they cannot keep the rhythm with technological advances. This leads to significant gaps between how to implement and how to use new tools in the classroom.

There are four dimensions of using technology: learning effectiveness, functionality and technical requirements, accessibility and provider considerations.

a. In terms of learning effectiveness, the first question that arises is whether the tool itself is appropriate to the goals of learning. It is imperative to explore and develop those technologies that contribute to the efficiency of learning. Do students learn for limited purposes such as improvement of the cognitive side or do they intend to extend their skills beyond the learning community?

How relevant is for a would-be engineer to explore mechanical processes in the absence of solid practice?

Another question to answer is whether skills emphasized by the tool are relevant to the learning outcomes. If we consider *writing*, for example, it might say that blogs are really important for students to practice on their ideas.

Does the tool provide learners with insight into how they understand new concepts? Unless the most appropriate dictionary or glossary is chosen, there is little likelihood for learners to operate and insert the terms contextually.

b. Functionality is closely related to tool availability in the educational setting. Teachers should pay close attention to copyright issues. Copyright includes exploitation rights and can be transferable. Computer programs are known to be protected as literary works and this protection covers the arrangement and selection of materials in databases. Students need to be informed about what is protected by copyright (paintings, sculptures, texts, films, photographs, computer programs etc.)

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c. Accessibility refers to students' possibility to equally access the tool or a relevant equivalent. Does the tool require any special equipment? For example, 3-D printers may not be accessible to everyone. Is the tool stable and reliable or it is a public resource so as to protect students' accounts and data?

Technologies that work discontinuously or cannot be accessed when most required disrupts the teaching process and affects the students' thinking flow. Therefore, technology failures need to be dealt with quickly and efficiently so as to appropriately resume the educational activities.

4. The company providing internet services is another concern to be considered. Is the tool provided by a third-party producer or are these provisions for the tool technically supported? These are questions that both teachers and students deal with constantly. The extent to which they find the right answer depends on many unforeseeable variables.

Conclusions

Technology seems to play a prevalent role in today's educational setting. Technology-related aspects have highlighted a few relevant aspects:

- technology integration triggers students' serious engagement, interaction and active participation in smaller or larger groups;
- adaptation to a virtual space is a key element to diversifying and enhancing the learning process;
- adaptation of technology to students' needs and contexts they operate in is essential in order to avoid discrepancies or gaps in learning;
- familiarity with a wide variety of tools helps students to broaden their knowledge horizon and to build a positive feedback.
- functionality, accessibility and sustainability of tools lead to the improvement of class management both in terms of students' conduct and their contact with diverse and up-to-date materials.

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