Cátedras UNESCO / Redes UNITWIN – Plantilla para Informe de Políticas
Para la III Conferencia Mundial de Educación Superior (WHEC 2021)
<u>Tipo: Individual</u> □ | Colectivo □
TÍTULO Education, Science and Technology

Autor(es) Vicari, Rosa Maria, PhD, Federal University of Rio Grande do Sul - Brazil; 20/2/2021

Resumen

Education is now mixed with science and technology. A disciplinary training seems to have no more space, especially for multi-disciplinary areas. Learning is only good when we know how to explore it. In this way, this text discusses some ideas about new challenges universities, undergraduate courses, and society.

Introduction

Current educational models are aimed at training students in hard skills associated with a development model that favors training for the use of actual techniques, technologies and strategies. This generates a fatal cycle that leads us to maintain dependence: technological, economic and social. To break this circle, it is necessary to re-guide the objectives of the learning processes at all levels, creating and strengthening competencies (skills such as empathy, resilience, courage or responsibility) that are adapted to the new technological and social reality and that focus on training persons who can promote an alternative model of development that leads our country to a true and sustainable development.

Learning scenarios do not allow the skills required for the 5.0 society to be achieved, since they have been designed to respond to an educational model composed by Isolated disciplines or based on the interdisciplinarity, reality and needs of the society of the last century. Disruptive and participatory scenarios favor the problem - knowledge - solution flow from all academic activity.

A Possible Model for Education

The question is: How to achieve the competencies and abilities that allow the university computing courses to be an engine for the students requiring a better education?

With an education for the XXI century, strengthening the learning capacity and the development of competences: 1) develop an ability to do things knowingly; 2) development of personalized learning programs; 3) acceptance of the idea that everyone should attain and obtain full higher education; 4) explicit education of general intellectual skills; 5) development of personal skills; 6) relationship development; development of collaboration skills, and 7) develop work skills in mixed teams of humans and machines.

To achieve this objective, it is necessary to develop a comprehensive education, that is, a process where the human being thinks in all its dimensions: cognitive, ethical, physical, social, and affective. It is about thinking, about an education that enables the integral formation of the human being, in all its aspects. Despite all the technology, human beings remain human. Therefore, comprehensive education must be guided by human needs. Social relationships, for example, may have changed shape over the past century, since they have largely become mediated by technology to the detriment of face-to-face contact. Physical education may also have migrated from outdoor social activities, to personalized activities within gyms. Affectivity can manifest itself more through 'emotions' than through actual hugs, but all these aspects are still present in human beings. Changes with technology are the way that interaction occurs.

Behaviors are affected by emotions

People who experience a comprehensive training have more balance in all aspects of human life and, therefore, are more prepared to contribute not only to the economic development of their country, but to its harmonious development.

Some strategies allow the university and the community to promote the characteristics of an integral human being. In our opinion it is based on the trans and interdisciplinary (instead of isolated disciplines), ie. interactions among disciplines are requested because that expands our

capability to upon diversity. The brain loves changes and sociality because that improves the quantity of new connections.

The work strategy should have a priority, regardless the teaching and learning strategy adopted (by projects, flipped classes, *fablabs to support experimentation*, etc.). The evolution of science, techniques and technology is at the frontiers of those disciplines. Learning is more personalized every day because technology allows it to be adapted to each individual however; creative work, research and the generation of knowledge take place in a collaborative way.

Curiosity → Imagination → Creativity

Curiosity is a learning factor, and with surprise it favors memory. Intuitions and conjectures are also needed to push creativity! First, we generate ideas and afterwards we develop and transform them into something more.

Today, the exemplary case is fake news. You have to be critical. Examine the contents, analyze their correction, discover the false and the error, and correct. We must look at the source.

Strategies allow the university community to identify and change, with social sensitivity, and along the space-time context where it operates.

Concerning the social aspects, the university is linked to a set of diversified products, functions and tasks, which aim to contribute to the social-economic development, providing the indispensable scientific and technological support.

Confrontations, arguments, and controversies

The university has in its hands essential elements for development, which are specified in teaching, research and extensions. And the productive sector demands from the universities prepared human resources and technology, which enables it to face a globalized and highly competitive environment. In addition, universities play an important role to boost of local economies, since that they generate employment and income. They are, therefore, a factor of growth and development for the (smart) cities and regions where they are installed.

To achieve the integration among the university courses and society new scenarios can originate from situations such as: there are research, teaching and extension projects whose results are used for actions that interconnect them. For example, a project that aims to meet a demand that arises in an extension can generate another connected research project that will result in better teaching.

Strategies that allow students to appropriate the competencies

Today, space and time are twisted together and we are forced to pay more attention to what is around us: the future is our aim. Then, think critically, meditate and be prepared to argue constantly.

The project-based and challenge-based activities, including problem solving, experimentation, stimulating learning through experience, interdisciplinary teaching that requires teamwork, articulation, critical and innovative thinking are one way to achieve theses competences. In these projects, the students "get their hands dirty", depending on the problems posed or coming from them.

The role of the educator has changed and will change more and more. He is now a reference of knowledge, of excellence, a reflective person who conducts important debates, because the question may be more important than the answer. It awakens skills and desires in students

that sometimes go unnoticed. It is in the classroom where we understand the logic of relationships and the activities proposed so far, imposing the group work harder.

Student, work, study, and think, and must be prepared to listen the teacher´s exposition before hand (by reading the slides). So, posing open questions to the teacher aids to expand their knowledge and abuse of critical thinking.

> **Activities can reinforce logical reasoning, use new ways of working, such as distance learning and that is why digital culture is developed, keep your data safe, respect the privacy Anexo 1**
>
> **Anexo 2**