

Chapter 9

Fourth Industrial Revolution: Towards University Teaching Based on Values

Alicia Guerra Guerra
University of Extremadura, Spain

Lyda Sánchez de Gómez
University of Extremadura, Spain

ABSTRACT

We are at the beginning of the fourth industrial revolution. The authors understand that university education should embrace the keys to this scenario and do so immediately. Considering this fact, new university teaching should be supported by technological immersion, but also by a culture of proactivity and training in values. The third of these pillars achieves an unimaginable relevance in regards to this emerging industrial revolution, which aims to become the revolution of values. Within this context, the university must move into the practice of ethical values and offer training based on soft skills. Moreover, there is a path that links ethics with soft skills based on the synergy between the two. From this idea, the central objectives of this work are to propose a university model for educational innovation based on values that also includes the tools for its implementation. The chapter ends with a practical case for implementing the model at the fablab that the University of Extremadura has available for its students majoring in Information Technology Engineering.

INTRODUCTION

It is indisputable that we are entering what is called the Fourth Industrial Revolution (4IR), the revolution of interconnection, artificial intelligence, talent, but also of ethics (Porter & Heppelmann, 2014, 2015).

At the Davos Forum (WEF, 2016) it was argued that this 4IR would be a *revolution of values*, while at the same time reflecting on how we can put economic growth at the service of people: Can technology be used for social change? This rebirth of civic principles is already evident and is being consolidated in the form of organizational trends (APD, 2016): exemplary governance, the intensification of relations

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between organization and stakeholders, and the subsequent changes in education and the way of learning. In short, *the person in the center of the organization*.

On the other hand, another distinguishing feature of this 4IR is the depth and accelerating rate of change of the labor market so that we anticipate that (a) as early as 2020 a third of current professional skills will not be classified as essential, at the same time as (b) those skills called, in the broadest sense, social skills or soft skills (persuasion, collaboration, emotional intelligence, etc.) will become critical in organizations.

Thus, commitment and project management have currently become the most valued skills for companies (EP & CE, 2015, 2016), though they may not be for long, given the fact that the most in-demand employee skills have changed since 2015 compared to those requested for 2020, with these changes mainly being towards a soft skills profile in this order: the solving of complex problems, critical thinking, creativity, people management and coordination with others (MG, 2016).

A critical issue is a convergence that is observed between the consolidated tendency of organizations towards governance based on ethics, which translates into them having an ethical culture, and the most in-demand profiles for professionals characterized by this type of soft skills. This is so that relevant moral principles and values are converted into soft skills such as those requested by current and future organizations (critical thinking, people management, commitment, initiative/proactivity, change management, responsible behavior, communication, and shared decisions, among others); at the same time, this protects fundamental skills of this kind from ups and downs as the cultures of organizations continue revolving around ethics. In conclusion, from this ethical alignment, soft skills require the convenience of implanting in official teaching a new training scheme that allows this synergy between both fields to be exploited. There would be a direction in this change in education and learning that represented a settled trend.

More specifically, there is no doubt that this scenario suggests setting up a new educational framework in universities very soon, which can face these pre-eminent features of new organizations with guarantees. Leaders must design and put into practice the further education of future generations as quickly as possible (Hirshman, 2016) in order to prepare them for this changed and changing labor market, but it is the teaching institutions that should make first and foremost for this revolution of skills and ethical values in their future graduates (Human Age Institute, 2016).

But how can these institutions deal with the transformation? We are facing a complex and gradual structural change which should be characterized by the habit of practicing ethics and professional skills based on examples, initiative, and creativity, in a climate of trust and shared experience (Human Age Institute, 2014). All this goes to demonstrate attitudes of proactivity in the university and its students.

The general objective of this work is to identify the guidelines and tools needed for the implementation of an innovative university education Model or Program based on values and, therefore, in developing a good part of the soft skills required by new and continuously changing organizations. Finally, we wish to specify the fundamentals of this Model in a case of university teaching innovation applied to a specific context.

For all this, the ethical dimension will be used as the Model's envelope—hence, the name of Values Training Model—while the training virtues in soft skills would represent its internal elements: as a whole, civic values and professional skills would form an educational system, that is, a set of interrelated units because they pursue a shared teaching objective, adapting to a more updated and desirable university education.

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