

# Knowledge as the common at Universidad Politécnica Salesiana

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## Knowledge society

All societies, one way or another, have been knowledge societies, although it was Peter Drucker who used the term for the first time (1969). Defining this concept is not easy, but its importance lies in the fact that knowledge has become a tool for promoting well-being and economic growth by improving quality of life and creating new social structures along with innovation, development and research (Mateo, 2006).

Nowadays, knowledge society integrates two concepts: information society and knowledge economy. The first is derived from the

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emergence of Information and Communication Technologies (ICT); while the second refers to the management of knowledge produced by a society, but in terms of economic growth.

In fact, considering only economic growth, imposed by the market on the production of knowledge, as a paradigm of development causes “science to be in danger, and, therefore, it becomes dangerous” (Bourdieu, 2003). Especially in applied sciences such as biotechnology, technology in military research, genetics, and others, where the products and services that are created are highly profitable.

Currently, many universities devote most of their work to the production of knowledge in research centers which are under controlled by large industrial firms that seek to sustain their commercial performance through patents. This is not convenient for the university because researchers and research groups may be subject to demands for profit. Thus, the problem does not lie in profit, but in subjecting it to ethics and holistic intelligence of human beings.

The challenge of a university of knowledge society lies in building a responsible autonomy, based on its own production of knowledge, on the articulation of a critical and reflective academic community, against the common interests we have as a society; enhancing the dynamics between tacit knowledge and explicit knowledge so that their work is not limited to the transmission of knowledge, but rather becomes the core where critical reason is produced, the understanding of knowledge and their social validation.

For this reason, the university must be able to respond to social demands, to pose new problems and to question itself. Research is not only conditioned to the instrumental reason (resolution of problems and demands of the business sector or the government); it is also the result of critical reason (ability to interrogate). Therefore, in the university it is important to maintain the dynamic relationship

of conflictive but fruitful dialogue between critical reason and instrumental reason.

It should be noted that the production of knowledge creates paradoxes that lead the Academic Community to a number of determinations. This diversity enriches the university and society, placing it in an unsuspected and unprecedented world, where the search for the truth can be recreated, that is, all that contributes to the improvement of the human BEING and the answers it can find for its ontological discovery more than the epistemological.

The university is not limited to the development of competences or the mastery of scientific know-how. Understanding science is accompanied by reflexive, critical capacities and autonomy of judgment construction. Therefore, there is no opposition on what competency-based training postulates, but we must be aware that this is not the aim of the university's activity because the university cannot work based on analytical plans and fragments of knowledge. It is in the light of the truth where unity and meaning are given to knowledge through reflection and synthesis, from a transdisciplinary logic of science.

The university is destined to be an institution that combines critical reason with instrumental reason, while research is the transforming axis in the understanding-production of knowledge. The feedback of the scientific agendas of undergraduate programs drives the university community to create, criticize and transmit knowledge to promote social development. This implies the formation of a culture of innovation, understood as a set of assumptions, values and behaviors that allow carrying out innovations without resistance.

Research is what differentiates university education from any other, since it contributes to the development of intelligence and logical thinking by comparing knowledge, organizing it, explaining it, thinking about it and not simply learning it. Therefore, teaching

is not limited to transmitting knowledge, it develops the ability to understand and explain things. When students are capable of explaining something, they simultaneously develop critical reason, being able to question other ideas and elaborate judgment on it.

The culture of innovation combines key elements for social innovation, promoting a change of the logic of education, the conception of ethics, the structure of a society with a market, the formation of values. It promotes awareness and the development of critical reason, fosters responsible citizenship, always based on trust, discarding doubt about another.

Currently, another great challenge of the university is to be useful in the face of social demands, mainly imposed by governments and the business sector, without becoming instruments of political decision makers, state logic or market forces. University academic and research agendas must always maintain an autonomy to guarantee the scientific nature of their production, the enrichment of knowledge, the constant scientific relationship and a positive link with society.

In this regard, a well-understood knowledge society is one that can innovate and grow from the knowledge it produces; that it can self-govern itself to guarantee its rights, focusing its efforts towards the satisfaction of its needs and enhancing its capabilities. Therefore, the university must contribute to this society, understanding that the classroom is the city and the environment, and that classmates are citizens.

### **Knowledge production and formation of citizenship from a salesian perspective**

The university must be considered from the formation of an individual responsible for his/her dignity and the path to the transcendence of his/her BEING, fostering an environment where intelligence is nourished and training to develop willingness is also pro-

moted. The strength that comes from the search for the truth has nothing to do with the simple acquisition of professional skills. It is about going beyond, towards a liberating vision of the individual that, as Pope Francis says: “At the center of this ambitious project... there is trust in man, not so much as a citizen or economic individual, but in a man as a person endowed with transcendent dignity” (2014).

A university that is focused on people aims to create a community that is a producer and a product of social innovation; a new culture where people can construct meanings and interweave relationships with new ethics; an environment according to our time and current demands, characterized by the promotion of values; a place where people can develop their life projects. This centrality can be read from the dynamics of knowledge production and the dynamics of citizen education.

### *Dynamics of knowledge production*

Research adds dynamics to university management and marks its style and model. It is capable of combining the efficiency imposed by the environment with the suggested freedom. For this reason, the relationship between research and ethics is a focal point where there is a combination of: the transformation of the world from science and its logic of rationality and efficiency, with the logic of critical behavior of the researcher, faithful to the truth in the production of knowledge.

We envisage an academic community that commits to values of reciprocity and co-responsibility to overcome difficulties and limitations, where the search for truth is a dimension that permeates and is present in all areas of the university. A scientific community is built to the extent that the people who are part of it provide knowledge and efforts from every responsibility and task to favor the common good called university.

An academic community that conducts research becomes aware and recognizes that incidence and dialogical pertinence of research results with society guarantees its nature and reason of being, and it is above university rankings and other systems that measure quality or excellence. However, this does not mean that indicators should not be used since they are necessary to manage the university and are a comparative mechanism with other universities in the world.

### *Dynamics of educating citizens*

University education is understood around the students' life project. This project is socially responsible of making students BECOME the most involved, capable of putting forward questions and problems along with critical solutions based on ideas and knowledge.

Students' education in the university transcends the acquisition of competences and the transfer of knowledge, it seeks to achieve a mastery of the know-how of science, giving way to the growth of critical and reflective capabilities which provide a basis for scientific development and give a democratic sense of autonomy in building knowledge.

For society (people), in the university students not only learn and replicate knowledge, they discover the dynamics of how knowledge is produced by conducting research of the reasons, circumstances, epistemological resources and the establishment of all the connections that endow it with sense.

Research develops people's critical and creative capacity to establish distance with knowledge, giving rise to the formation of moral judgment which is the basis of free citizenship. The search for the truth plays a vital role in the construction of students' personality and development of skills.

A university for people must combine its work with life. It seeks the truth of life, living decidedly, projecting itself in multiple

ways, without giving up its ability to manage itself in a dynamic, diverse, collective and multiple way by leaving its comfort zone and tending towards new things. A university with an identity of service for people entails a responsible autonomy.

### *Salesian perspective*

Currently, the search for economic success has made modern man think in himself and poverty is increasingly evident not only in material terms. Selfishness causes deeper poverty: loneliness or desolation. However, prevention from responsibility demands us to believe in people, in their potential and their ability to free themselves from what oppresses them. Human beings are not naturally bad, it is not about being more selfish than before, it is that market society makes selfishness necessary for survival.

Nowadays, it is common to hear that in order to be successful it is necessary to compete with each other, since the logic of the market leads people to sell themselves as expensive as possible and to buy others as cheaply as possible. This results in ethics that govern social relations based on a win-lose situation instead of a win-win situation. Therefore, the selfishness isolation of individuals results in a di-society where ruptures of relationships are violent and in turn generate more violence.

In this regard, the system faces a global crisis and education has adjusted towards the transmission of information and not to the understanding of the knowledge being taught. Education prepares people for exams and not to think for themselves. An exam does not measure the ability to understand but the ability to repeat. Therefore, education must also be concerned about emotional aspects and consciousness, which give life meaning.

From Don Bosco's experience, the Oratory and the Preventive System, rather than being structures or institutions, are ways of life, ways of relating with each other, of responding to life, they are deep attitudes of each person, they are fundamental choices of life, "it is the perspective that compromises all the criteria, the style, the resources and training content" (Peraza, 2011, p. 4).

However, prevention from responsibility faces a greater challenge than a hundred years ago. People in this time have double individualism; they not only face selfishness of society that seeks to impose its individual self over a group's well-being, but market society has formed a new type of selfishness that seeks to impose "myself over others", making alterity secondary and even affecting coexistence.

If we consider the context in which UPS operates today, probably like Don Bosco in his time, it is responding to the need of young people with a new way of conducting an Oratory. An Oratory understood as a way of life, of relating with others, of responding to life. This system of encounters of personal interests that become commons, of academic and pedagogical reciprocity is called University-Ecosystem. Undoubtedly the most important legacy of Don Bosco is to have an educational relationship that creates fraternity, filiation, one that inspires and arouses family.

From this perspective, the objective is to promote personal, professional, socioeconomic, local and regional development, carried out in a framework where leadership is shared. This is how Salesian accompaniment for education is built, with a Preventive System from responsibility.

In this regard, the Oratory led to an educational model, which is why UPS seeks to privilege meeting places for Teaching-Research. These places constitute a meeting place in a new dimension of the University Oratory in the search for truth and the sense of what su-

rounds us, this is what the academic community that researches or scientific community is based on.

Teaching, research and community engagement represent an opportunity for the university to contribute meaning and relevance to society so that people can recover their identity built from recognition and mutual identification, where in everyday life we are able to explore love as the most basic form of recognition and that diversity is not a reality that must be “tolerated” or something we should break free from, but a source of enrichment.

This indivisible relationship of Teaching-Research leads to the transcendence of developing competencies, which are often protective or for assistance and move to the promotion of people’s skills to act and function in their life; in the latter lies Don Bosco’s preventive system. The legacy and approach of our founder on the Preventive System is based on the confidence in our potential to be good so that we can create a life project that does not go astray or even if it does, so we can return to it.

Therefore, the university must act in real life and use elements such as innate and learnt talent, as well as collaboration as a guarantee of a culture of multidisciplinary innovation that enables the fulfillment of objectives.

### **Creation of a common good called knowledge**

The digital age in knowledge society has promoted the incorporation of various technological tools that facilitate the dissemination and expansion of information and knowledge. Additionally, its access is a right recognized worldwide (Pablos Pons, 2010) and a tendency that addresses it from the perspective of common goods, as a shared resource, has emerged (Ostrom & Hess, 2016).

Nonaka-Takeuchi defines knowledge as a “real justified belief” (1995) that creates from information and acquires significance through meaning and interpretation (Kriwet, 1997). Unlike information that is descriptive, knowledge is reflexive and can be explicit or tacit. If knowledge is a belief, it must somehow be intelligible; and if it is created through the significance that is given to information, then it is original news that modifies the beliefs of the recipient.

For instance, knowledge is produced after discovering original news generated by information caused by hearing the following phrase: “Did you know that a straw has only one hole?” The habit of observing the hole from both ends created a belief of a double-hole in the mind of someone who received the information. After receiving the information signal, the original news causes that belief to be questioned before moving on to another justified belief which can be assumed as being true.

The previous example shows a field of knowledge of something that was possibly known, but something of which there was no awareness; as if that knowledge were in the Universe, but it is not known about until it is discovered and goes beyond what was previously known (Anderson, 2014). That is, we know more than what is said, later the authors will present the differences between tacit and explicit knowledge, confirming not only the definition of knowledge of Nonaka-Takeuchi, but the original news is what generates that initial spark that gives rise to the production of knowledge.

The original news does not occur only with respect to something that happened in the past, but also with new things that are generated regarding the intelligible (Hausman, 1996). Peirce (1998) defines *abduction* as the process by which the recipient, through his own logic which is unique, builds his own hypothesis to explain what he has perceived as original news. This process begins simply by receiving the signal of some data that entails original news that needs

explanation. In search of this explanation, the person generates, classifies, selects and connects information to give a new belief meaning, all this from the surprise caused by some news.

Simon (1977) states that the production of knowledge has an empirical component related to psychological and sociological processes, and a formal component that, in turn, is related to the definition and logical nature of the knowledge produced and that therefore is related to the rationalization of knowledge.

The new knowledge-belief is not included in what is already known, it emerges as an illumination, as intuition. While it is true that an intuition is fallible, the truth is that conjectures and hypotheses were not in the mind of the receiver before. The explicit and tacit knowledge suggested by Nonaka-Takeuchi (1995) implies a spiral model of knowledge production based on the interaction between tacit and explicit knowledge.

It has four phases that enable the understanding of the possible knowledge management processes:

- **Internationalization:** is an individual process of assimilation of tacit and explicit knowledge, it is a continuous process of “learning to learn by doing” and an integrated process to the systemic structure of the knowledge of the organization or if necessary it can also restructure tacit knowledge.
- **Socialization:** its basis is the transfer of tacit knowledge, which according to agents is personal, it starts from the individual experience involving intangibles such as beliefs, values and perspectives, depends on the context and the field of meanings that are shared and created through specific interactions (Ichijo & Nonaka, 2007).
- **Outsourcing:** involves transforming tacit knowledge to an explicit one, so that it can be transferred, disseminated and, the-

refo, can be made explicit in languages such as grammatical statements, mathematical models, and others.

- Combination: it is the result of creating structures or systematically integrating individual explicit knowledge to the organization, that is, it is a social process based on the communication of knowledge.

To understand the relationship between organization and knowledge, based on the spiral model, it is important to consider that: (i) the proposed coding of knowledge implies tacit and explicit knowledge; (ii) the epistemological dimension describes the transformations in the continuous transformation of tacit-explicit knowledge and vice versa; (iii) the ontological dimension details the transformation of knowledge from individual knowledge to group knowledge and, finally, to organizational.

Ostrom and Hess (2016) state that knowledge is the understanding of received information that is obtained through experience or study. Its dual nature, as merchandise and social force, makes it a complex resource and although considering it as a common good is a relatively new subject, it has allowed us to understand it better in the digital age.

As mentioned above, thanks to technological development information is distributed throughout the world and, therefore, knowledge has gained strength as a resource. However, it can be a double-edged sword and since it is of common nature, there are many conflicting interests. On the one hand, companies promote patents and copyrights, on the other hand, groups of scientists, researchers and people work in favor of free access to information.

UPS is at a balance point since common good is not synonym of open access. On the one hand, patents and publications are a relevant indicator for the national and local context, and on the other, it must have digital repositories and the promotion of free access.

The collective work carried out within the University-Ecosystem (research groups, educational innovation groups, entrepreneurship groups, etc.) allows us to understand what a common good is, because they all join efforts to reach a goal.

Therefore, every moment of the university's institutional life is an opportunity to innovate and undertake new proposals to creatively manage, in the style of Don Bosco, a public good such as higher education (Herrán, Sánchez, Zhingre, Solórzano, & Parra, 2016). Community engagement is essential at UPS so it can fulfil its goal of being recognized as a university that conducts research, contributes to society and promotes innovative projects to solve environmental, technical or social inclusion problems.

For this reason, it is necessary to create institutional strategies to strengthen the connection of university-industry-society. Thus, community engagement can become an effective instrument to promote the university by establishing an interaction of mutual knowledge with several sectors, so that the perception of its image can be in accordance with its reality (Alcántar & Arcos, 2004).

Good management of knowledge as a common good lies in having clear rules, generating an environment with the right conditions for the development of its members and enhancing their capabilities. Now the question is how to manage knowledge that is produced in this environment.

### **Knowledge as a common good at UPS**

The university must recover the sense of *management, production and application of knowledge*.

The production of knowledge must be considered as the first heritage for both the academic community and society. What hap-

pens after knowledge is produced? How to understand ownership on the production of knowledge?

From a general perspective, *knowledge management* has been limited to issues of intellectual property rights related to trade. The university has lost the capacity to develop social and economic innovation systems, internally and externally. For this reason, the university should focus its efforts on educating citizens that are able to produce knowledge, capable of developing a moral judgment that distinguishes critical distance from knowledge that is taught and explained.

Thus, in 2015 in its book titled “Rethinking education: Towards a global common good?” the United Nations Educational, Scientific and Cultural Organization (UNESCO) published a chapter specially dedicated to the analysis of new ways of relating among human groups worldwide. In the last few years new forms of cultural and artistic expression have emerged, which are the result of acculturation driven by the increase of connectivity and cultural exchange in the whole world.

There is a particular relationship between the diversity of societies, both in the north and the south of the planet, this particular cultural diversity is the greatest source of creativity and wealth. Therefore, there will be diverse and alternative ways of solving problems inherent to this new digital era, we must examine alternatives to the dominant model of management, production and application of knowledge, it is necessary to recognize alternative knowledge systems.

Thus, it is of common interest to have a more humanistic management, production and application of knowledge, always related to the interest of people, to achieve a full and holistic development in diverse, changing and uncertain contexts.

The type of society we aspire must consider cultural, social, economic, ethical and civic factors, but we must go beyond the strictly

utilitarian vision of knowledge as a means to only achieve economic well-being of a society, the approach of human capital that characterizes to a large extent the international discourse of development.

Understanding that ethical issues are fundamental in the process of management, production and application of the predominant knowledge, can be considered a speech contrary to the current discourse of dominant development. That way people and current societies can have a meaningful and dignified life, according to the alternative of Amartya Sen's concept of development (2001).

The entire world education system, especially universities, must think of new ways of managing, producing and applying knowledge, although it is true that the aim of formal educational processes is to have learning methods to acquire, interpret and understand knowledge in a traditional way, that mainly responds to particular interests and minimally to common or public interests.

Knowledge is the common heritage of humanity and, therefore, should be considered a global common good. If knowledge is considered merely a public good, its access will often be limited. The current trend towards the privatization of production, reproduction and dissemination of knowledge is a matter of serious concern. Knowledge is gradually being privatized by law, and more specifically by the Intellectual Property Rights regime, which dominates the production of knowledge. The progressive privatization of production and reproduction of knowledge is evident in the work of universities, research centers, consulting firms and publishers.

In the current context, it is essential to foster a more relevant and more explicit role of civil society in the management, production and application of knowledge.

This new discussion, driven by a fundamental concern for sustainable human and social development, highlights the trends,

tensions and contradictions that are observed in global social transformation, as well as the new horizons open to knowledge. The importance of considering alternative approaches to human wellbeing and the diversity of world views and knowledge systems, as well as the need to sustain them, is emphasized.

Currently, the challenge is to structure knowledge and define it as a shared resource, taking into account particular contexts and realities where it is generated. The challenge is even greater, considering the economic, legal, technological, political, social and psychological fields which make up this global common good.

Now that new technologies are advancing at a very fast pace, new information technologies have redefined knowledge communities. As these are interrelated or connected, the traditional world of users and information providers has been transformed, from a unidirectional process to a multidirectional process, leaving many of the existing norms, rules and laws obsolete, and causing unpredictable results, which are increasingly reconstituted and organized with different logics, leaving previously disseminated information obsolete and with a very brief useful life.

It is an institutional responsibility, especially for universities, to respond to this new logic and design new university institutions that favor management, production and use of knowledge as a common good. Therefore, collective action, successful self-management behaviors, trust and reciprocity and the design and permanent evolution of correct standards is required.

Ostrom and Hess (2007) point out that commons usually involve sharing resources among multiple users. Successful management of commons requires an active community and evolving norms that are understood and applied correctly (Dietz, Ostrom and Stern, 2003).

The university as a whole represents an active non-profit private community, which can vary its rules and structure with the aim of protecting or promoting the management, production and application of knowledge as a common good.

In the context of analyzing the common good of knowledge, Hess and Ostrom (2007) suggested a theoretical framework that has been used by many multidisciplinary academic researchers in recent decades for the diagnosis and study of certain common goods or resources, called Institutional Analysis and Development (IAD), which is used to investigate the area in which people repeatedly interact with each other, within the framework of laws or regulations which guide the selection of strategies and behaviors that offer alternatives different from the practices that are still in force and which do not produce effective solutions in current contexts, where new technologies advance at a fast pace and restructure the management, production and application of knowledge very quickly and rethink new knowledge communities interconnected through the web.

Therefore, it is imperative to think, design and implement new institutions that favor the management, production and application of knowledge, in our case, think about new ways of organizing the university by requiring collective actions and self-managed behaviors of quality, efficiency and excellence that will lead to successful results; as well as environments of trust and reciprocity but above all the design and / or permanent evolution of new convenient standards.

We have learned that successfully managing common goods requires an active community and evolving norms that are understood and applied correctly (Dietz, Ostrom & Stern, 2003).

In the IAD framework, three broad groups of variables are proposed as underlying basic factors that condition both the insti-

tutional design and the interaction models that take place in the respective fields of action.

The first group, regarding the characteristics of the resource, which explains the characteristics of the physical and material world of the community that produces and uses a resource, in this case management, production and use of knowledge; and the current procedures that determine the decisions of the participants.

The elements that make up this first group are:

*Biophysical-technical characteristics:* The physical properties of a resource always play a fundamental role in the configuration of the respective community and the physical nature and available technology determine the limitations and possibilities of a particular common good. These characteristics include elements such as size, the situation, the borders, the capacity and the abundance of the resource. Most of the typical characteristics of a common good such as knowledge as it is currently conceived, has emerged as a result of new technologies.

*Characteristics of the community:* Made up especially by users, those who use knowledge at any time and place, suppliers that can be large and diverse groups that offer general or particular knowledge, and regulators that are voluntary and self-governed groups that initiate the acquisition of knowledge.

*Rules in force:* These are shared regulatory frameworks that establish what an agent in a given position should, should not or cannot do in a particular situation, and are backed up by at least a minimum sanctioning capacity in case of non-compliance (Crawford and Ostrom, 2005). These norms can be generated from three spheres or scales: operational, collective option and constitutional.

The second group, regarding the field of action, which is made up by participants who make decisions within a situation mediated by

physical, community and institutional characteristics, and which will result in different patterns of interactions and results (Ostrom, 2005).

The elements that make up this second group are:

*Situations of action:* It is the way people cooperate or not with each other under different circumstances. The analysis requires identifying the specific participants and the roles they play in a specific situation. It examines the actions taken, potential actions or future actions and how they affect the results.

*Agents:* Represented by the participating community (faculty and researchers).

The third group, regarding the interaction patterns, the results and the evaluation criteria. Each one will be briefly explained below:

The interaction patterns are closely linked to situations of action, which can be very conflictive, especially if there is a significant change in knowledge management.

The results of the planning processes in search of a final and common goal, usually have two types of behaviors, good results and poor results.

The evaluation criteria make it possible to assess the obtained results as well as the ones obtained as a group, which would generate certain actions or alternative institutional rules. The evaluation criteria can be applied both to results and to the interactions between the participants that produce results.

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