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Editorial

Knowledge management and intellectual capital for research in universities

Gestión del conocimiento y capital intelectual para la investigación en las universidades

Jorge Luis López Sánchez[1,a]

[1] Universidad de Huánuco, Huánuco, Perú.
[a] Doctor in Business Management.

One of the priorities of universities is to promote intellectual creation and knowledge production, with the aim of contributing to the solution of various problems that arise in society, in strategic sectors such as health, education, justice, politics, production, economics, finance, technology, among others; therefore, it is necessary for there to be a close relationship between universities and society.

For Barreno Salinas et al. (2018), this is a shared responsibility between universities and society, thus reaffirming the basic principles of training students for their entry into the labor market. In this regard, the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2021) has published the report of the international commission on the future of education, entitled: Reimagining our futures together: a new social contract for education, which calls for research and innovation, promoting the right to lifelong education, including different types of data and forms of knowledge, such as horizontal learning and knowledge exchange across borders, as well as the contributions of teachers to students.

Law No. 30220, Peru's University Law 30220 (2014), establishes in Article 6 that one of the purposes of universities is to conduct and promote scientific, technological, and humanistic research, as well as intellectual and artistic creation. Likewise, Article 48 considers research to be an essential and mandatory function of the university, where teachers, students, and graduates participate in research activities. Diaz-Leon (2023) argues that in the university setting, it is essential to consider not only the student but also the teacher, with the latter bearing the main responsibility for scientific production.

Now, how can we measure scientific research output in universities? Guerrero Rojas (2021) states that the quality of Peruvian university education is measured based on two requirements: the "level" and "volume" of research work carried out during the training stage, both by students and teachers.

It is not just a matter of conducting research to comply with legal requirements so that students can graduate by defending a thesis and teachers can publish their scientific articles in indexed journals, but also of promoting high-quality, intensive research that has an impact on society. In Peru, not all universities meet these goals; in fact, academic quality is well below international standards. We can corroborate this data by reviewing the Times Higher Education World University Rankings (2024), which includes 1,904 universities in 108 countries and regions. The performance indicators are grouped into five areas and their weighting percentages were: teaching, with 29.5% (the learning environment); research environment, with 29.0% (volume, income, and reputation); research quality, with 30.0% (citation impact, research strength, research excellence, and research influence); international outlook, with

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7.5% (staff, students, and research); and industry, with 4.0% (income and patents).

In our view, promoting scientific production in universities involves several aspects, such as having specialized laboratories equipped with the necessary equipment, trained teachers with research experience, allocation of an exclusive budget, agreements with other universities or institutions, specialized libraries, access to databases related to scientific research, among others. All of this can be summed up in one word, "knowledge," and as such, it must be managed according to the particular potential and needs of each university.

In this sense, knowledge management is understood as an organization's ability to create new knowledge, disseminate it throughout the organization, and express it in products, services, and systems through two spirals of epistemological and ontological content, which refer to the interaction of tacit and explicit, individual and social knowledge, of a dynamic and continuous nature, which develop in a permanent cycle containing four phases: socialization, externalization, combination, and internalization (Nonaka & Takeuchi 1999). It is also important to note De Jager's (1999) definition as the need to accelerate the flow of valuable information from individuals to the organization and back to individuals so that they can use it to create value for customers.

Likewise, the concept of "intellectual capital" must be internalized within the culture of universities, such as tangible and intangible intellectual resources, non-physical assets of an intellectual nature, such as knowledge, information, intellectual property, and experiences, which can be used to generate value and wealth. This is complex to understand and share effectively; however, those who identify and exploit it succeed (Stewart, as cited in González Díaz et al., 2023).

For the analysis of the components of "intellectual capital," there is a consensus among several authors belonging to the Intellectus model of intellectual capital measurement and management (Bueno et al., 2011), as it is easy to understand, since it groups all the intangible assets of the institution and their ability to contribute to the stated objective into three blocks: human capital, structural capital, and relational capital.

Human capital refers mainly to people, since knowledge resides in them. Therefore, the human capital present in universities encompasses the body of knowledge and skills mastered by their members (faculty, students, graduates, and administrative staff). This knowledge, and much of the skills, are acquired through processes of education (formal and informal), communication, socialization, retraining, and updating of the knowledge associated with the activity performed (Bueno et al., 2011).

Structural capital, on the other hand, refers to the infrastructure that incorporates, trains, and sustains human capital. It is also the organizational capacity, which includes the physical systems used to transmit and store intellectual material (Edvinsson and Malone, 1999). In universities, structural capital is related to bibliographic resources, rules, manuals, and internal regulations, electronic databases, intranet, internet, organizational culture, and institutional values. Therefore, the organization's directors and managers must pay special attention to the development of structural capital as a means of capitalizing on and projecting into the future the intelligence, talent, and work of all its members, as the entity's value proposition (Bueno et al., 2011).

Relational capital, on the other hand, refers to the value of the set of relationships that the institution maintains with different social agents (Bueno et al., 2011). Consequently, this relational capital is directly linked to the ability of universities to integrate into their socioeconomic environment and develop networks of contacts. Understood in this way, relational capital is made up of stakeholders or groups interested in scientific research that benefits them in some way.

All in all, research is learned by researching, which means that if you want to learn how to research, you have to practice, because constant practice becomes experience, and this experience, which can be individual or group-based, can be transmitted through research courses in the curriculum, research reports, conferences, congresses, research institutes, indexed journals, etc. Furthermore, if a researcher uses previous research as a source, the result of the new work must be better, thus creating a spiral of knowledge that will gradually raise its level and quality.

In conclusion, universities must implement a culture oriented toward scientific research that conveys to their members the importance and value of this activity for intellectual creation and knowledge production, so that this knowledge can later be transmitted to society and thus contribute to solving the problems it faces. In this effort, units or departments responsible for designing annual scientific research policies, plans, and programs, as well as for their control and enforcement, should be included within the organization of universities.

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Conflict of interest statement
The author declare no conflicts of interest.

Correspondence
Jorge Luis López Sánchez
jorge.lopez@udh.edu.pe