

Main Lines of Research in the Field of Higher Education in Peru: Toward a Concerted Prioritization of a Research Agenda

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Abstract

As part of the efforts to prioritize lines of research in the field of higher education in Peru, the project Improvement of Higher Education Quality (PROCALIDAD) convened management specialists and members of academia to create working groups. After the presentation of a characterization of the general problem in this field, a subsequent debate concluded in the preparation of a joint proposal for a research agenda, which prioritized certain lines such as (a) the need for articulation between basic and higher education for the generation of competencies in the applicants; (b) the need to emphasize the teaching professional career aimed at improving the quality of educational institutions; (c) the need to seek alternative financing mechanisms involving the private sector; (d) the need for greater clarity in existing regulations and standards, and (e) the need to foster the connection between higher education, business, and government, in order to achieve a higher level of competitiveness and development. These guidelines will allow to expand the discussion and generate a series of public policies conducive to strengthening research in higher education institutions and promoting more relevant research for the country in the medium and long term.

Keywords:

stakeholder analysis, governance, community participation, university/college, higher education, research

Ejes y líneas de investigación en el ámbito de la educación superior en el Perú: hacia una priorización concertada de una agenda de investigación

Resumen

Como parte de los esfuerzos de priorización de líneas de investigación en el ámbito de la educación superior en el Perú, el Proyecto Mejoramiento de la Calidad de la Educación Superior (Procalidad) convocó a especialistas en gestión y a miembros de la academia para la conformación de mesas de trabajo. En ellas, tras la presentación de una caracterización de la problemática general en este campo, se generó un debate que culminó en la elaboración de una propuesta conjunta de agenda de investigación, que priorizó determinadas líneas. Entre las que los participantes destacaron se incluye (a) la necesidad de articulación entre la educación básica y la superior para la generación de competencias en los postulantes, (b) la necesidad de poner énfasis en la carrera docente orientada a la mejora de la calidad de las instituciones educativas, (c) la necesidad de la búsqueda de mecanismos alternativos de financiamiento que involucren al sector privado, (d) la necesidad de una mayor claridad en la regulación y normatividad existentes, y (e) la necesidad de un impulso mayor al vínculo entre la educación superior, las empresas y el Estado, en aras de lograr un nivel más alto de competitividad y desarrollo. Estos lineamientos constituyen una pauta que permitirá expandir la discusión y generar una serie de políticas públicas conducentes a fortalecer la investigación en las instituciones de educación superior y promover investigaciones más pertinentes para el país en el mediano y largo plazo.

Palabras clave:

Análisis de decisores políticos, Gobernanza, reuniones participativas, universidad, educación superior, investigación

Principais eixos de pesquisa no âmbito da educação superior no Peru: Em direção a uma priorização concertada

Resumo

Como parte dos esforços de priorização de linhas de pesquisa no âmbito da investigação da educação superior no Peru, o Projeto Melhoramento da Qualidade da Educação Superior (PROCALIDAD) convocou a especialistas em gestão e a membros da academia para a conformação de mesas de trabalho. Em elas, após a apresentação de uma caracterização da problemática geral neste campo, surgiu um debate que culminou com a elaboração de uma proposta conjunta de agenda de investigação, que priorizou determinadas linhas como (a) a necessidade de articulação entre a educação básica e a superior para uma geração de competências nos candidatos, (b) a necessidade de pôr ênfase na carreira docente orientada à melhora da qualidade das instituições educativas, (c) a necessidade da busca de mecanismos alternativos de financiamento que envolvam o setor privado, (d) a necessidade de uma maior clareza na regulação e normatividade existentes, e (e) a necessidade de um impulso maior ao vínculo entre a educação superior, as empresas e o Estado, com o intuito de alcançar um nível mais alto de competitividade e desenvolvimento. Estes lineamentos constituem uma pauta que permitirá expandir a discussão e gerar uma série de políticas públicas que fortaleçam a pesquisa nas instituições de educação superior e promovam investigações mais pertinentes para o país no médio e longo prazo.

Palavras chaves:

análise de partes interessadas, governança, participação comunitária, universidade, educação superior, pesquisa

Introduction

The public and private sectors' interest in higher education as a key issue on the political agenda has been increasing in recent years, including, for example, the debate about the approval of the law establishing the moratorium on the creation of public and private universities for a period of five years (Peru, Congress of the Republic, 2012), and the approval of the University Law (Peru, Congress of the Republic, 2014) and the Law of Institutes and Schools of Higher Education (Peru, Congress of the Republic, 2016). This interest revealed an asymmetry of information and a scarcity of quality evidence for decision-making at different levels (Montes, 2015).

Information is a key aspect of the reform; thus, it has received special impetus as part of one of the pillars of the University Higher Education Quality Assurance Policy and has been materialized in the University Higher Education Information System (SIES). The objective of SIES is to prioritize, collect, process, and spread information for decision-making at different levels of higher education (Peru, Presidency of the Republic, 2015). In Peru, there are pending steps to formally initiate the implementation of SIES, which will provide

timely and quality information as a useful input for the design, implementation, and evaluation of effective and efficient evidence-based public policies (Juntti, Russel, & Turnpenny, 2009; Slavin, 2002), and thus contribute to a comprehensive improvement of the quality of the educational service and, consequently, of the country's socioeconomic development (Jongbloed, Enders, & Salerno, 2008).

Along with the implementation of SIES, the government, institutions, and the private sector have generated the first databases, working documents, preliminary analyses and studies on higher education, which is an important and valuable effort to establish research priorities in the higher education field. However, these initiatives do not necessarily respond to a consensual agenda, but rather to specific requirements of the entities that make up the higher education system (Peru, Ministry of Education, 2018; Procalidad, 2018).

Previous experiences in Latin America, especially in the health sector (Caballero et al., 2010), have worked on research agendas with the aim of guiding and coordinating the efforts of the different actors for the generation of evidence. It should be noted that in the health sector even specific lines have been prioritized, such as tuber-

culosis (Yagui Moscoso, Jave, Curisinche Rojas, Gutiérrez, & Romaní Romaní, 2013), child malnutrition (Yagui et al., 2012), or human resources in the health field (Curisinche et al., 2011). These actions have used processes with a participatory, plural and decentralized approach, which made it possible to promote and obtain proposals that contain the perspectives of different key actors.

Within the framework of the Higher Education Reform, identifying and prioritizing the axes and lines of research ends up being a strategic task, especially in a context such as the Peruvian one in which we still have comparatively lower levels of funding, scarcity of specialized human resources, and limited scientific production (Cabezas Sánchez, 2006; Scimago Lab, 2018). It should be noted that the prioritization of research agendas is a valuable effort that requires the support of key aspects, such as political support and funding to make the proposed products tangible (Garro, Mormontoy, & Yagui, 2010; Yagui et al., 2010), and thus increase the final benefits for students, based on solid evidence from rigorous scientific research in the field of higher education (Shavelson & Towne, 2002).

In this context, and within the framework of the functions of Procalidad, a space for debate was generated between higher education managers and researchers to systematically determine, based on their experience and perspectives, a "Higher Education Research Agenda", with the purpose of identifying the axes and priority lines of research for the generation of evidence related to higher education, from which inputs can be obtained for the design, implementation, and evaluation of informed and effective public policies.

Method

This article is based on the systematization of the results of a group meeting of decision-makers, research management experts, and researchers from various institutions, who were invited to discuss the lines of research they considered to be priorities during a workshop.

Participants

For the process of prioritization of the axes and

lines of research, the participants were selected considering their career path, either in decision making, research management, or research itself. Government agencies and public and private initiatives related to higher education were identified, as well as higher education institutions representative of both the public and private sectors.

Once the selection process was completed, potential participants were formally summoned to a workshop to discuss research priorities in higher education, attaching the corresponding agenda. The workshop was held on April 12, 2018, from 8:10 a.m. to 12:30 p.m.

Table 1 shows the list of the institutions convened, the participants, and the number of persons from each institution who participated in the event. The institutions invited included, besides of representatives from diverse public and private sectors, those from both public management and economic development and innovation areas, thus ensuring diverse points of view and enriching the discussion and prioritization. The presence of representative authorities, such as the superintendent of Sunedu and the directors and ex-directors of Minedu and Produce is highlighted.

Data Collection Technique or Instruments

A data collection sheet was designed for each working group, which contained the main problems identified in the General Process of Higher Education, as detailed in Figure 1. This sheet was designed so that each participant and working group could establish a ranking of priorities according to the scores recorded in each axis and line of research. In this way, the research team in charge systematized the scores recorded by each working table and established a final ranking that made it possible to systematize and establish the axes and lines of research presented in this document.

Procedure

At the beginning of the workshop, a member of the Procalidad team presented a perspective of the context of higher education in order to have a general overview and thus focus the process of prioritization and reflection. The problems identified as part of the presentation of the higher education context have been organized into (i) origin,

Table 1
List of institutions for the process of prioritization of research axes

Type of Institution	Name of Institution	Description	Participants (No.)
Public bodies	National Superintendence of Higher University Education (Sunedu)	Entity in charge of supervising the quality of the university educational service (Peru, Congress of the Republic, 2014).	1
	National Council for Science, Technology and Innovation (Concytec)	Institution whose purpose is to promote science, technology, and technological innovation (Peru, Congress of the Republic, 2004).	1
	Ministry of Education (Minedu)	An institution whose functions include directing the design, implementation, and supervision of the quality assurance policy for higher university and technical education (Peru, Ministry of Education, 2015).	3
	National Education Council (CNE)	A body whose purpose is to participate in the formulation, coordination, monitoring, and evaluation of the National Education Project, education policies and plans, and intersectoral policies (Peru, Ministry of Education, 2002).	1
	National Program for Innovation in Fisheries and Aquaculture (PNIPA)	Project aimed at improving the performance of the innovation system and value chains in fisheries and aquaculture in Peru (Peru, Ministry of Production, 2017).	3
Research Center Consultants	Universidad del Pacífico Research Center (CIUP)	An organization that brings together professors-researchers from various fields to apply innovative research methods, so they conduct high-quality multidisciplinary research (University of the Pacific Research Center (CIUP), 2018).	1
	Development Analysis Group (GRADE)	A private research center whose mission is to develop applied research to stimulate and enrich the debate, design and implementation of public policies (GRADE, 2018).	1
	En Acción	Consultant with experience in the design and management of policies and initiatives that achieve relevant and sustainable results in scenarios of inequality, and social and cultural diversity, in the public and private spheres (EN ACCIÓN, 2018).	1
	British Council	UK international organization for cultural relations and educational opportunities (British Council Peru, 2018).	1

Type of Institution	Name of Institution	Description	Participants (No.)
Academia	Universidad Nacional Tecnológica de Lima Sur (UNTELS)	University of public management that began operations in 2007.	1
	CITE Aquaculture of Universidad Peruana Cayetano Heredia (UPCH)	Innovation center whose purpose is to contribute to the improvement of productivity and competitiveness of companies, associations, and organizations in the aquaculture and fisheries sector (CITE Aquaculture UPCH, 2018).	1
	Universidad Científica del Sur	Private corporate university that began operations in 1998.	1
	Research Center for Integral and Sustainable Development (CIDIS)-UPCH	Its objective is to promote scientific research on the marine biodiversity of the country's northern coast, among other areas, and to contribute to the generation of innovative and sustainable initiatives (UPCH - CIDIS, 2018).	1
	Pontificia Universidad Católica del Perú	Private associative university that began operations in 1917.	1
	Universidad Nacional Agraria La Molina	University of public management that began operations in 1960.	1
	Universidad Nacional de Ingeniería	University of public management that began operations in 1955.	1

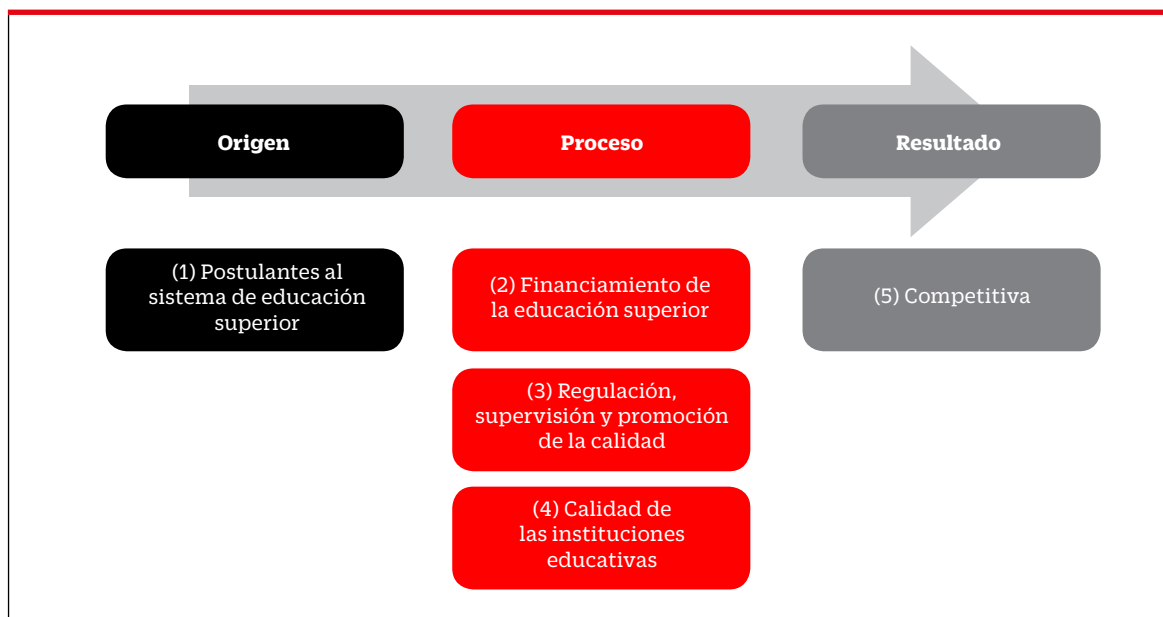


Figure 1. Proposal for a General Process of Higher Education and the main lines of research. Source (Huayanay-Espinoza et al., 2018)

(ii) process, and (iii) outcome (de Miguel, 1994; Scheerens, 1992). The first point includes what is related to the initial conditions presented by students who wish to enter higher education, highlighting the scarce articulation of the Basic Regular Education (EBR) model with the necessary competencies of higher education, the absence of vocational orientation mechanisms, and the inadequate admission processes characterized by precarious admission indices. The processes refer to the necessary activities that should allow for an adequate educational service, such as proper funding, planning of activities, use of resources originated from taxes, availability of information, a correct regulatory and quality assurance framework, improvement of professors' competencies, validity of curricular programs, production of research studies, and updating of administrative systems. Finally, the results are those achievements that should be accomplished with higher education, such as the performance of universities and the competitiveness of the country. It should be noted that the analysis attempted to address both higher university and technical education, yet the results have a university bias due to the current availability of information.

Discussion groups were then formed, and participants were divided into groups that included decision-makers, research managers, and researchers in each. Later, each group was given an individual sheet and a group sheet, in which they had to identify the different prioritized topics in the form of axes and lines of research. Both sheets included the general axes identified from the model of processes of the higher education system. For each of these axes, up to four lines of research were established in the individual file, based on the individual experience of the manager or academic. The prioritization level was from 1 to 4, where 1 corresponds to the highest priority. In the case of the group sheet, it had up to five priority research lines, in case more priority lines were identified.

Information Analysis

The members of the research team (CHE, GFC, and RSO) then consolidated the results. The consolidation was carried out for each axis, arranging each research line according to the score awarded in

each table. In case a research line was repeated in more than one table, the prioritization was made considering the highest score. In this way, prioritized lines of research were obtained for each axis, and a final list of problems identified at the level of the higher education system, as well as the prioritized lines, was drawn up.

Results

Thematic Axes and Prioritized Lines of Research

The presentation of each thematic axis made it possible to highlight problems in higher education, which are detailed below in order to contextualize the prioritization carried out by each working group.

Applicants to the Higher Education System

Currently, there is little articulation of the EBR educational model with the necessary competencies to initiate the formative process in higher education. In this regard, it was identified that less than 15% of second grade secondary students have managed to develop the skills expected for their grade (*specifically in reading and mathematics*), which does not ensure that students will complete secondary school with the appropriate competencies (Peru, Ministry of Education, 2017b). In addition, 75% of students attend preparatory academies to apply to the university, once again confirming the need for further quality of training at previous training periods for increasing the prospects of access to higher education. This preparation also represents economic costs and more study time to enter a public university, compared to private universities (Peru, Ministry of Education & Procalidad, 2017).

On the other hand, the absence of institutional and specialized vocational guidance mechanisms is evident, since 77% of students receive assistance from their families to select their preferences for post-secondary education (Innovations for Poverty Action [IPA], 2016). Furthermore, only 19% of students choose their major taking into account some aspects related to vocational orientation (affinity with the curriculum and preference for

the type of work they would do), which shows a precarious process for career choice (Innovations for Poverty Action [IPA], 2016).

Finally, inadequate admission processes were identified. In order to contextualize this problem, it is necessary to recognize that the increase of applicants between 2000 and 2010 was 167,000 young people (47%) and has not gone along with improvements in the general admission index (ISG). In this sense, an ISG of 53% has been reported, highlighting the deterioration in private universities (80%) in contrast to public universities (21%) (Sunedu, 2018).

Financing of Higher Education

Peru invests 14% of the total education expenditure in higher education, while countries in the region such as Chile, Mexico and Colombia invest more than 21% (World Bank, 2018). Likewise, the tools developed by the Minedu for universities, such as the Budget Program 0066 and management mechanisms, are still insufficient to achieve concrete impact on improving the quality of higher education, despite improvements in the implementation of universities.

Besides, between 2013 and 2016, public universities allocated around 60% of their budget to the common actions of the Budget Program. Also, universities at the national level only allocated around 0.1% to 0.3% of their budget to the curriculum development, which could strengthen the articulation with the productive sector (Peru, Ministry of Economy and Finance, 2018b). Finally, the execution of the resources originated from taxes in the universities was less than 50% in the last six years. The increase in execution was mainly due to a reduction in the budget programming of these resources (Peru, Ministry of Economy and Finance, 2018b).

Regulation, Supervision and Promotion of Quality

Peru's higher education system is characterized by a wide heterogeneity of higher education institutions, with more than 143 universities and approximately 900 institutes. This complex system has also shown a deficient regulation and articulation of the quality assurance processes between the Minedu, Sineace, and Sunedu. In the

last five years, despite academic events and workshops, there still have been insufficient spaces for institutional articulation in order to coordinate licensing, quality promotion, and accreditation actions.

Moreover, until 2018, although the Integrated Information System is one of the four key pillars in the Higher Education Quality Assurance System, it has not yet been implemented and articulated. The absence of an integrated information system generates deficiencies in the information available to implement improvements in the processes of regulation, supervision, and promotion of quality in the higher education system of Peru.

More than 50% of public and private university professors in Peru only have a bachelor's degree (Peru, Ministry of Education & Procalidad, 2017). On the other hand, about 44% of public university professors are over 59 years old, while only 16% of private university professors are in this age range; as for the institutes, 10% of higher technological education teachers do not have pedagogical studies, nor have they completed their studies (Peru, Ministry of Education, 2017a).

In general, the educational model and curricular programs are not updated or linked to the needs of the market. This generates some high indicators of informality; for instance, informality in Peru reached 72% in 2016. University education differs considerably from this figure (25%), but it also differs greatly from technological higher education (45%) (National Institute of Statistics and Informatics, 2017). The fall in underemployment has shown an even trend among university and institute graduates, but, in general, the gap remains.

On the other hand, the Peruvian university system is still characterized by a low production of research and internationalization actions. In the 2011-2015 period, only UNMSM and UPCH were able to produce more than 1000 publications. On the other hand, public higher education institutions have very little cooperation with foreign higher education institutions.

Finally, universities have improved budget execution in recent years and there is a positive trend, but there is still a deficit in administrative capacities. Universities have computer offices, but there is a large gap in the automation of uni-

versity processes: almost 30% do not have a virtual admission system, according to Minedu.

Result (Competitiveness and Development)

In general, Peruvian universities are in very low positions in all international rankings. Even in the registry of Latin American universities, the best Peruvian university ranks 25th, while the best Chilean university ranks 1st (Newman, 2018). The aspects in which Peruvian universities are most deficient are the preparation of their faculty (professors with PhD) and the number of publications they generate.

Improving the quality of higher education contributes to the generation of competitive professional competencies; however, the global competitiveness index shows a standstill in the evolution of the indicator in recent years. Thus, among other outcome indicators, the higher education response has not yet achieved a performance that can be recognized as positive.

As a result of the activities mentioned in the methodological part, the groups prepared their prioritization lists according to the thematic axes shown in Table 2, which are divided into the corresponding lines of research.

Discussion

The participation of different actors, with experience in various sectors directly or indirectly related to higher education, allowed the process of thematic prioritization, specially the lines of research, to include a broader perspective of the main aspects that should be considered in order to establish a research agenda in higher education.

The results of the identification and prioritization of the main thematic axes and lines of research in topics related to higher education require an additional analysis that considers a context such as the Peruvian one, with limitations in aspects of financing (World Bank, 2018), specialized human resources, and scientific production (Huyanay-Espinoza et al., 2018).

A topic highlighted by the participants was the need to investigate the different aspects of coordination between higher education and regular

basic education (Peru, Ministry of Education, 2017b), with emphasis on the relation between the potentialities and vocational interests of students (Innovations for Poverty Action [IPA], 2016), the description of the real magnitude of the gaps in access to higher education, and the advantages and limitations of existing modalities of admission. It is necessary to systematically investigate the educational capacities and expectations with which secondary school students graduate, along with their vocational orientation needs, as well as the characteristics of the educational demand, and the possibilities of universities and institutes of higher education to satisfy this demand with the minimum quality required. Determining if a standardized entrance exam is the only advisable modality, or if there are alternatives that consider different professional expectations and contexts in relation to the applicants, is another aspect that requires rigorous investigation, considering the regional experiences applied, for example, in Chile, with the University Selection Test (Contreras, Corbalán, & Pacheco, 2007).

Regarding the need to evaluate the quality of institutions, the focus is on defining the status of professors' careers, in order to know whether they have the necessary competencies for quality teaching, and whether there are adequate institutional incentives to promote research (Peru, Ministry of Education & Procalidad, 2017). Besides, participants mentioned the need to research curricular innovation efforts in universities and institutes, and the need to improve administrative, academic and research management systems.

With regard to financing, participants highlighted the importance of investigating alternative mechanisms that include the participation of the private sector, whose role must be in line with the country's expectations of development and modernization, and with those of improving efficiency in administrative management. Likewise, the benefits of the tax exemption to which this type of organizations is subject should also be analyzed. In public institutions, it is suggested that emphasis be placed on the possibilities of improving budget administration and optimizing financing schemes, which is in line with proper organization at all institutional levels.

Table 2*Axes and lines of research prioritized in the working groups*

AXIS	SUB-AXIS
1. Competences of applicants to the higher education system	<ol style="list-style-type: none"> 1. Articulation of general competencies between basic and higher education (differentiating university and technical education). 2. Identification of potentialities and vocational orientation of basic education students. 3. Description of the modalities of admission to higher education institutions. 4. Identification of gaps: gender, income, and language.
5. Quality of educational institutions	<ol style="list-style-type: none"> 1. Description of the teaching career and the necessary competencies. 2. Incentives for quality and promotion of R&D for public and private institutions; variables and ranking to measure quality (promotion of meritocracy). 3. Curricular innovation, educational quality, training and evaluation of professors and equipment of higher education institutions (institutes and universities). 4. Management and information systems for decision-making. 5. Administrative and academic & research management systems; competency-based assessment systems.
6. Funding for quality improvement	<ol style="list-style-type: none"> 1. Alternative mechanisms for financing the quality of high-performing institutions (private funding and specific mechanisms). 2. Modernization of administrative management for the use of resources and mechanisms for prioritizing expenditures and investment. 3. Promotion of inter-university cooperation (networks) to raise and implement funds. 4. Evaluation of scholarship programs with public and private funds. 5. Relevance of tax incentives.
6. Regulation, supervision, and promotion of quality	<ol style="list-style-type: none"> 1. Lack of information for proper monitoring and promotion. 2. Clear regulations and procedures for research and the promotion of innovation in public universities, including the law on the researcher's career (postdoctoral contracts in public universities). 3. Regulation of higher education and unification of the quality assurance model. 4. Design of organizational models and institutionalization of management, including capacity building for the management of higher education (graduate and postgraduate programs).
5. Competitiveness and development	<ol style="list-style-type: none"> 1. Prospective evaluation of market demands that facilitate dialogue and partnerships between companies and higher education institutions, including linking these institutions with the productive potential of the territory. 2. Linkage and collaboration between the academia-business sector and government, with the participation of civil society. 3. Relevance of basic and applied research to the country's development. 4. Approach to the development of general competencies in higher education.

On the other hand, participants discussed the relevance of investigating the usefulness of the use of inter-institutional higher education networks for cooperation that will allow for more cost-effective acquisitions, the effect of scholarship programs on benefited students, and tax incentives on access to higher education and on the quality of available education.

Participants considered that the efficient availability of information that will allow an optimal

regulatory supervision and a greater clarity on the regulations and procedures for the promotion of innovation and research is a crucial aspect that should be incorporated in the suggested research agenda. To date, there is no robust national system capable of supporting policy and management in making better-informed decisions (Montes, 2015), with information asymmetries in the selection of majors and institutions by students in higher education. This reveals the urgent need to consolida-

te the implementation of the recently established University Higher Education Information System (SIES), in which the Ministry of Education should play an active management role (Flores, 2018). SIES is being implemented progressively in the university system; however, this progress is still very slow among institutes, and currently there is no reliable information on important issues such as financing or administrative personnel, which means that there is not enough evidence on the magnitude that they face.

On the other hand, participants also highlighted the importance of incorporating the evaluation of market demands in relation to the linkage of academic entities with the private sector in the research agenda, considering the productive potentialities of each region and the main economic impacts of improvement in the quality of higher education at the local, regional and national levels. It was stressed that this does not question the importance of the role of the public sector in proposing and implementing national and regional development agendas, but rather highlights

that this effort needs to be better articulated with the different actors, including the private sector.

Conclusion

We consider this prioritization effort to be the first step in establishing the importance of generating efficient and effective policies in the public agenda, so they are supported by solid technical evidence, based on rigorous research and relevant to our national and regional context. This effort should be articulated and complemented with the different institutions that constitute the higher education system, which should be translated in the institutional prioritization of jointly agreed lines of research, obtaining appropriate funding, and considering criteria of relevance and meritocracy. Finally, it is important to incorporate a substantial improvement of the quality of the higher education service as a key component of the strategic objectives.

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