

Understanding the Limitations of Research

Comprendiendo las limitaciones de la investigación

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Summary

This work is an argumentative essay, or, in the terms of Montero and León (2005), it is a theoretical study. Its objective is to critically propose an evaluation of the state in which psychological research is in Peru, and from this analysis, raise the potential reasons for the problematic situation and reflect on these aspects, in order to finally propose ideas for solving the problems detected. For its purpose and the kind of discourse that is managed in it, this could be useful for students or work teams that wish to conduct deeper, empirical (quantitative or qualitative) or non-empirical research, about the topic of psychological research in Peru.

Keywords: Psychological Research in Peru; Peruvian Investment in Research; University and Research.

Resumen

Este trabajo es un ensayo argumentativo, en los términos de Montero y León (2005) es un estudio teórico, su objetivo es plantear críticamente una evaluación del estado en el cual se encuentra la investigación psicológica en el Perú, y, a partir de ese análisis plantear los potenciales motivos de la situación problemática y reflexionar sobre dichos aspectos, para plantear finalmente ideas de solución a los problemas detectados. Por sus propósitos y por el discurso que se maneja en el mismo, podría ser útil para estudiantes o equipos de trabajo que deseen realizar investigaciones más profundas, empíricas (cuantitativas o cualitativas) o no empíricas, acerca de la investigación psicológica en el Perú.

Palabras clave: Investigación psicológica en el Perú; Inversión peruana en investigación; Universidad e investigación.

Introduction

The present work is the result of several presentations in academic events in which the author participated to treat the topic of psychological research in Peru, especially in the II International Congress of Psychological Evaluation: Perspectives and challenges of Educational Psychology, organized by the School of Psychology of the University San Ignacio de Loyola which was carried out in November, 2018. In this event the author presented the topic under the title University Law (Law 30220 - July 2014): Analysis and answers to demands in reference to research. This work could be classified as an argumentative essay or a form of theoretical study (Montero & León, 2005), whose objective is to reflect on the situation of psychological research in Peru, to critically raise the potential causes of the problem and to briefly develop some ideas for solutions. It could be useful for those who want to develop empirical studies or revisions on this subject.

If asked, what is the state of development of psychological research in Peru? A majority of researchers will surely respond with a critical vision and will agree that despite isolated efforts by some notable psychologists who deserve recognition for their work, as mentioned by Alarcón (2006); Arias (2011, 2012, 2014); Caycho (2012, 2013a, 2013b); León (1993a, 1993b); Zanoló (2014), among others; after more than 60 years of training psychologists, which began in 1955 with the creation of the Psychology Section at the Universidad Nacional Mayor de San Marcos [UNMSM] and in 1963 with the creation of the Academic Department of Psychology at the UNMSM (Alarcón, 1980, 2000, 2012; Jauregui, 2002); basic and applied psychological research have developed as it might have been expected. In order to understand this problem, it has been stated the need to analyze the context in which psychology and research psychologists develop, taking into account some aspects that could later serve to develop more rigorous and punctual research. It is proposed to analyze: the role of the state around scientific research, some characteristics of a type of culture that does not investigate, the role of the university and of the National Superintendence of Higher Education at the University level [SUNEDU], the situation of scientific publications and some approaches and opinions to reverse the situation.

The Peruvian State and Scientific Research

What is the role of the State as an entity that should underpin scientific research? A first aspect to review is the investment it makes to encourage scientific and technological development. The political discourse allows us to find that in almost all the government plans presented by candidates to govern the country (of those who came and did not come to power) there has been the idea of supporting scientific and technological development with a view to achieving the desired national development, but if we review the annual budgets of all the governments, we will find that investment in research has not been precisely the most adequate to achieve that declared purpose before reaching the government, even worse if we verify the execution of the budget.

Consistent with World Bank data (2017) on investment in research in the world, Andina (2019), the Peruvian news agency revealed that according to an official of the Inter-American Development Bank (IDB), in 2019, Peruvian investment in research reached 0.12% of gross domestic product (GDP). A fact that the Integrated System of Financial Administration of the State (SIAF), contradicts since years ago stating that in reality only a little more than half of the budgeted (0.08% of GDP) is spent. It is also possible that a large part of this expenditure is related to the administration of the institutions in charge and little to encouraging and improving scientific research and technological development.

Comparing Peruvian investment with what is done by other countries in the world and even the Latin American countries, it is observed that Peru invests very little and is lagging behind in the region. Colombia invests with 0.25%, Chile with 0.38%, Mexico with 0.54% and a larger economy such as Brazil with 1.24%. If you want to develop and achieve a growing economy, investment in research should be above 0.7%. This explains why neighboring countries, without being in the most ideal conditions, are ahead of us in scientific production. Rebossio (2013a), journalist and researcher on these topics for the newspaper *El País* in Argentina, points out that little investment in scientific development correlates positively with the number of scientists that each country has, with the number of patents registered by each country and with the exports they make of technology, etc. In all these indicators our country lags behind the world and even Latin America.

This lack of investment, which by the way is not new (Bermúdez, 2013), causes numerous problems that do not allow the development of research; among those problems, the leaving of talents, the lack of institutions in charge of doing research, lack of qualified personnel, very few scientific publications in the different areas of human knowledge, etc. Dr. Orjeda, former president of CONCYTEC stated in 2017, that the Peruvian governments had science, research and technological innovation in a state of complete abandonment, and, that Peru needed to invest around S/. 4,000 million soles (around \$1,250 million American dollars) to attract, at least, 17,000 doctors that were needed at that time to establish a scientific development policy according to the times of economic growth (Taipe, 2016).

Culture and research

A second aspect raised for the analysis is that culturally, Peru, since its colonial origins, is a society that is little concerned with the development of scientific knowledge from empirical research. The model of university that was set up in Peru is the model of the classic Spanish university, an institution concerned with letters and not with research leading to scientific or technological development, a fact that seems to be common to most Latin American countries and that in the case of Peru has not been overcome. So far SUNEDU observes that a large part of the universities, because of their lack of vocation to research and the absence of teaching staff dedicated to this activity, always declared it as one of its most important goals. In Peru the enhancement of knowledge and academic production are scarce. Universities prioritize the training of professionals while the training of researchers is neglected. Alarcón (2012) states that psychologists, in a third world society like Peru, live in a situation of alienation and cultural dependence, maintains "We live among ideological products and materials, values and

instruments, not produced by us, that very often do not articulate with our human and social reality...". (p. 41).

Neither Peru nor Latin America have participated in the great scientific discoveries and scientific revolutions, in the manner in which the industrial revolution was born in Europe or the technological revolution that came from North America. Neither at present there is participation in the new revolution called the *society of knowledge* nor in the technological revolution that is now happening (Rivera, 2011); this can be taken as a synonym of backwardness and at the same time of dependence that has been growing more strongly in the last decades and that can be sharpened even more.

Research is not used as a means to solve the country's problems, whatever kind they may be. In education, reforms are carried out, new methodologies and strategies are applied to work and learn, but without acknowledging the reality. The same happens in any other sector of country's life. Very modern devices are being bought that later are not used fully, or buildings, roads, irrigation systems, bridges, etc. are constructed, without taking into account the conditions of the nature that later destroys them. Peru is dependent in terms of scientific knowledge and technology. Rebosio (2013b) states that investment in research correlates inversely with the amount of resources spent on the purchase of technology and machinery, the lower investment in research and innovation (GDP) corresponds to higher spending on purchases of machinery and technology in general.

University and research

A third point of analysis is the role of the university and research in the country's development. It is a sensitive issue that unfortunately cannot be positively evaluated either. The Peruvian university as a whole does not have much to show as contributions to the development of scientific and technological knowledge; evidently there are isolated facts of contributions of some scientists in different areas of science and psychology in particular, as indicated by Alarcón (2006), Arias (2011, 2012, 2014), Caycho (2012, 2013a, 2013b), Leon (1993a, 1993b) and Zanoló (2014), to refer to the contributions of Blumenfeld, Alarcón, Gonzáles Moreyra, Pollit, among the most recognized, who tried -from their own perspectives- to construct a scientific psychology to understand the Peruvian man; a work that finally did not prosper, as it has happened in Colombia and Mexico, to cite only two well-known cases. Unfortunately, the work of this group of psychologists was frustrated by the lack of resources, because it did not have the necessary echo at the time or because when they stopped producing research, they did not have a team that continues with the effort of systematic, institutional, joint, team work that works with a long-term plan. Some refer to this situation as a distancing and isolation of the university from the needs of society (Alarcón, 2000; Salas, 2000), to the point that it could be taken for granted that in Peru, the university and society live with their backs to the wall and it can even be said that they do not have a common vision of the path and the actions that must be taken to achieve the country's development.

With the new university law (Law 30220, July 2014) and with the control action that SUNEDU has been exerting, research is becoming an important part of the evaluation that this organization carries out on the different university institutions; As a consequence, all university institutions are concerned about presenting research and publication indicators, which has made some of them form their own research institutes and develop incentive policies for teacher publications. They are considering research professors who by law have special treatment and promote the publication of articles in indexed journals; other universities have a policy of encouraging those who, teachers or not, decide to publish with institutional membership.

At the moment there is an increase of young researchers in some universities, the publications of these have also grown notably, there is more interest in improving the quality of the few existing and indexed journals. But, few universities have clear lines of research, few are

the researchers who develop their research work and production around a topic and specialize in it.

If one takes into account the number of universities that form psychologists (more than 40) and possibly a few thousand psychologists who teach at the university, the number of psychologists certified by CONCYTEC is very low (about 80 psychologist researchers). This allows us to affirm that there are possibly institutions in which there is no research teaching psychologist who has the experience of publishing in indexed journals and is certified by CONCYTEC. This brings another very difficult problem to handle, how many of the professors who are in charge of research subjects in different universities, have research experience and publications in indexed journals?

A related issue that is not being observed in its real dimension is the quality of psychological research in university institutions. Most of them do not transcendence and are not necessarily related to the issues and problems that the country needs (Alarcón, 2012), but it is necessary to restate that neither the state nor the company are able to take initiatives to coordinate with the university lines of research in which they are interested. State and business expect the university to produce science and technology, but without making any investment and that, unfortunately, is not possible.

Finally, another problematic aspect is that the new university law requires the presentation and support of research that is carried out to obtain academic degrees. It is required to opt for the school diploma, then for the bachelor degree, followed by the masters and finally, the doctorate. There are no clearly indicated differences for the work of each of the levels, so that each university is proposing its own rules and demands, many of which are debatable and could in the near future generate more problems in the graduation and degree process.

The state of the art of scientific publications

At present, scientific information is made known through journals, which are inserted in databases, catalogues and indexes that group and classify them in order to make them more visible to researchers, to make them useful for scientific development and also to evaluate the impact of scientific publications. Some of these databases such as Web of Science (WOS) or Scopus have great prestige in the academic and scientific world, and are difficult to access for Latin American publications that have little scientific production and within this, Peru is quite behind (Medina, 2014, 2015), far from Brazil, Argentina, Chile, Colombia and Mexico, which, as has already been said, are the countries that invest more in research in the region.

The Scimago Journal Rank (SJR) portal measures the impact of scientific journals and establishes the quality of their publications based on the citation count obtained (Scopus information). In the ranking of scientific production by countries in 2018 (www.scimagojr.com/), the country with the most scientific production is the USA that produced 683,003 documents, followed by China with 599,386. Brazil ranks 14th with 81,742 documents, followed by Mexico (28th), Argentina (44), Colombia (47), Ecuador (62) and Peru (70th) with 3,369 documents. This has a positive correlation with what each country invests in research and also with what it sells in technology and patents. Then it doesn't make much sense to keep wondering why the U.S. and China are the world's greatest powers or why Brazil is the first power in Central and South America.

According to Scimago's 2018 report, there are 24,701 magazines in Scopus or WOS (SJR www.scimagojr.com/), of the 100 best rated magazines, 94 belong to the U.S. or the United Kingdom, five are Dutch and one of German, despite the great Chinese production, still their research does not reach the best ratings in the Scimago Ranking. The Latin American journals are 832 (3.37% of the total) most of them are Brazilian and there are only seven Peruvian journals (0.84% of the Latin American total), one of psychology that belongs to the Pontifical Catholic University of Peru (PUCP).

SciELO is a virtual library created in Latin America, where you can find more Peruvian journals, but only three are psychology journals, namely the Psychology Journal, of the Pontifical Catholic University of Perú; Liberabit, of the San Martín de Porres University and Purposes and Representations, of the San Ignacio de Loyola University.

In the Regional Online Information System for Scientific Journals of Latin America, the Caribbean, Spain and Portugal (LATINDEX), 23 Peruvian psychology journals are counted. Approximately half belong to schools or faculties of psychology, which indicates that there is around two thirds of university institutions that train psychologists and do not have a scientific journal in which their teachers can publish, a fact evidently contradictory with the demand that they themselves pose to their teachers. These figures are also clear demonstrations of what is being sustained, the critical situation of research, Peruvian scientific productivity and scientific journals.

The problem of most Peruvian scientific journals is the sustainability and quality of their production. Many journals are created with enthusiasm, publish some issues and stop doing so because they do not have sustainability. Some managers of scientific journals do not worry about achieving indexations, so their management does not take into account the recommendations of the bases and indexes in which they must be incorporated if they want to enter and have a presence in such globalized world. Perhaps this is one of the main problems of national journals and their low visibility; few journals have well constituted teams of academics who understand well this world of scientific publications (Romero-Torres, Acosta-Moreno & Tejada-Gómez, 2013). Many Peruvian journals are not found in open databases or indexes, not even in those of Latin America itself (Clase, Latindex, Lilacs, Redalyc, etc.), so it is almost impossible to know about them, this is a critical problem that should be addressed from Concytec -as COLCIENCIAS does in Colombia- in the shortest term.

The facts that have been dealt with characterize the reality of research in Peru and bring with them a series of problems and deficiencies that directly influence the lack of scientific and technological production, not only in psychology, but in all disciplines. The necessary condition to reverse this situation is that there is greater public and/or private investment in research, hence, then some actions can be taken to reverse this situation.

1. **More qualified research psychologists need to be trained.** In April 2016 CONCYTEC made public a first list of 200 qualified researchers, this fact, plus the pressure from SUNEDU to the universities to achieve greater commitment to research have notably increased this list, but it is still insufficient for the necessities that the country needs to satisfy, more researchers are required and more public and private investment is required too.

At this moment, the list of psychologists recognized as researchers by CONCYTEC is close to 80, this number is insufficient, even if only the teaching posts in the more than 40 university institutions that train psychologists had to be filled.

An important aspect is the economic aspect, the payment of researchers and dedication to the activity of research, have to improve. Ideally, research should be professionalized, with more decent incomes and with more time to develop the research. Currently, the salaries of teachers are very varied and depend on the institutions (especially in private universities), and the amount of hours that researchers dedicate to other tasks is a very high demand, which distracts or disrupts scientific production.

2. **Create institutes and centers for research into psychological phenomena.** Peru is a multicultural country, with dozens of languages, diverse climatic and geographical conditions and customs. All of this affects the behavior of Peruvians and nothing systematic has been done to investigate this reality. We do not know the psychology of Peruvians, whether they are adults, adolescents or children; men or women; from the coast, the mountains or the jungle. There is no clear idea of how children learn in each region of the country, what motivates them,

or how they perceive reality, their values and lifestyles. This can be explained by the lack of state institutions dedicated to research that are sustainable.

Alarcón (2012) sustains that in order to get out of the cultural, theoretical, scientific and instrumental dependence in which Peruvian psychology finds itself, it is necessary to use research in an active and at the same time patient manner, "...a psychological research linked to the problems required by social change and the development of our peoples" (p.41).

3. Define the lines of research and orient them to understand and solve social problems. Few university institutions have defined their lines of research; these have arisen more from the thematic preferences of researchers and teachers; and, they are not necessarily related to the characteristics of the context in which university institutions operate. Psychological research does not respond to the needs of what is needed to know in order to solve the problems the country's problems. For example, there is no idea how to teach or motivate children to learn language or mathematics, in spite of the fact that the grades in PISA, the Peruvian schoolchildren take the last places in comparison with other countries, and this has not changed since the first measurement made approximately 30 years ago; nor is there any clear idea as to why the Peruvian population has so much tolerance for violence or corruption, to cite only two facts.

It is convenient to relate psychological research with national or regional needs. State agencies such as ministries, regulatory agencies, and public and private companies have to create the conditions to determine what the main psychological problems they face and investigate before developing preventive interventions or programs are. On the other hand, this would allow the development of basic and applied research lines, with clear and sustainable objectives, with work teams aimed at solving problems; e.g., how can school learning of mathematics and language be improved?, or how can honest children be formed who reject corruption and deception?; or how can human values such as equal rights, respect and tolerance be taught to children?

4. To strengthen the publication of the research that is developed. One of the decisions that should be taken in all universities and research centers is that the research that is carried out, by teachers and researchers or by students, undergraduate or graduate, always be published in journals or full text in the institutional repositories; this would avoid repeating the same topic of study in many institutions and also avoid plagiarism.

It is evidently important that Peruvian researchers are encouraged to publish in Scopus journals. This is a desire that for the Peruvian researcher becomes very laborious and difficult. Since there is only one psychology journal in this database in Peru, the possibilities of publishing in journals from this database is limited to seeking possibilities abroad. In many of these publications there is a long process of revision and acceptance of manuscripts.

On the other hand, efforts have to be made to improve the quality of journals, to professionalize editors and reviewers and aspire to have more journals in the shortest time and with better indexations. Evidently, an organization like CONCYTEC is required to act as a standard-bearer in this work.

5. Train psychologists to develop research and to face the challenge of publishing. Many of the professionals who develop professional and teaching activities do not have a good methodological training and have not done research in their academic training (Merino-Soto & Salas-Blas, 2016), so that they have problems at various points in the research process: at the time of planning a research project and specifying the study problem, when information is sought and theory is structured, in the methodological and statistical design, and, logically, when the report and article are made. Each institution has to develop training programs for its teachers, and surely the quality of what is produced will improve step by step. According to Merino and Salas (2016), the lack of methodological management and ignorance of how research is carried out are two of the main problems of teachers who do not research.

Conclusions

The lack of scientific culture in Peruvian society, which involves national, regional and local government managers and all kinds of public and private institutions; the political class as well as academics in universities; determines that in Peru no research is developed to know their problems and from there propose solutions for their needs. Possibly this same cultural factor also has to do with the distribution of the budget, which neglects research. This also means that national development is not related to research. The country, in the last 20 years, has experienced sustained economic growth, but investment in research has not grown as it should, despite the fact that there is evidence in the world of countries that have made leaps to economic, scientific and technological development on the basis of sustained investment in research.

The lack of institutions that develop research of the national reality is evident, this makes it impossible to take adequate decisions to solve the most pressing problems. This is notorious in the field of psychology; there are no lines of research linked to national development (e.g. in education, health, in the field of work or security), but rather more dependence is generated when objects of study are researched that could be irrelevant for the Peruvian environment, with theories coming from abroad and instruments that come from other realities.

Universities also have no research tradition, Dr. Orjeda (Taípe, 2016), asked if Peruvian universities carry out research, replies that the fingers of one hand would be left over if wanting to count them. The steps that are being taken through SUNEDU's action must be made more consistent in the demand that universities have to conduct research.

Likewise, it is not enough to encourage academics to carry out research by proposing incentive policies; to this must be added the need to develop journals with good visibility and indexation. A policy for the development of scientific publications in all disciplines must be generated.

In psychology, the training of professionals must be encouraged to develop research and to apply the resulting knowledge in the solution of the different problems in which they have the capacity and competence to solve them. To encourage the construction and validation of instruments to study the different urgent problems as it was proposed by González Moreyra, or, to propose studies to make a psychology of the Peruvian as Alarcón once proposed, or to study the development of children, especially Andean as Pollit proposed, are good examples of the need to understand that psychology is not an empty discipline, without content or social commitment.

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