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Modelo de gestión del conocimiento para mejorar la calidad de investigación científica en universidades del Perú

Kknowledge management model to improve scientific research quality in Peru's universities.

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Resumen

El presente trabajo surgió después del diagnóstico situacional y observación de la calidad de tesis yartículos científicos producidos en Pre y Post Grado en Universidades del país. Se trabajó con muestra representativa de 50 actores universitarios, que respondieron al cuestionario y permitió científicamente constatar la situación problemática. Se propuso un modelo de gestión del conocimiento basado en constructivismo pedagógico, currículo por competencias en universidades del país y en la gestión estratégica. Este modelo se constituye en esfuerzo educacional multidisciplinario, destinado a cambiar actitudes, valores, comportamientos y estructura de investigación científica, adaptada con nuevas coyunturas, tecnologías y desafíos en la Universidad.

Palabras claves: Modelo, gestión, conocimiento, liderazgo, calidad, investigación, científica, epistemología.

Abstract

This research arise after the situational diagnostic and the quality observation of thesis and scientific articles produced in under and post graduate in the country's universities. A representative sample of 50 students was used, who answered to the questionnaire and allowed to verify the problematic situation scientifically. A knowledge management model was proposed based on pedagogical constructivism, competency-based curriculum and strategic management. This model constitute a multidisciplinary educational effort, allocated to change attitudes, values, behaviour and scientific research structure adapted with new situations, technologies and challenges in the universities.

Key words: Model, management, knowledge, leadership, quality, scientific research, epistemology.

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Introduction

The problematic situation of this work is the scarce of scientific research quality in the country's universities; which is related with the critical global socio-economic situation, overwhelmed by globalization, neoliberalism and crisis of values.

Aspects that accelerate the decomposition of social organizations, including universities, in which academic management is altered and therefore the quality of scientific research produced decreases, either in under or post graduate. To this, the politization of university students, paltry selfishness, professional competitive deficiencies, emotional imbalances, budgetary imbalances and scarce of capacities to face academic and organizational weaknesses of the university are added.

Research produced in university environments does not contribute to changes and social transformations. They also does not reflect efficient management of competition: know-how building new knowledge, as it is demonstrated by the heavy and static exploitation of raw materials, increase of dependent economy countries, repeated chain of production that enriches a few masters of management, distribution and commercialization of the products (Sánchez, 2010).

The research proposes a knowledge management model based on pedagogical constructivism and organizational strategic management to improve the quality of scientific research in universities of the country, as the students demonstrate methodological deficiencies, incompetencies in guidance, advice, review and support of the theses.

The proposal of the knowledge management model is based on processing of mental operations by Jean Piaget, meaningful reception learning by David Ausubel, discovery learning by Jerome Bruner, social learning by Albert Bandura, socio-cultural-historical theory by Lev Vigotsky, multiple intelligences by Howard Gardner, as well as contributions of Humberto Maturana, Karl Popper, Khun and Lorenz.

The university actors relate to each other because they are constituent parts of the community, group together, strengthen the academic organization, promote needs of affection and consideration, and relate affective development between teachers and students with needs of association, participation and leadership, which correspond to the authorities of the university. The theoretical and methodological significance of the problem related to the poor quality of scientific research in universities of the country contemplate weaknesses in academic management perceived by university students. Subjective vision that each one possesses, but credible, since it is the people who give meaning to these realities from their particular point of view.

Therefore, the innovative proposal arises: knowledge management model based on pedagogical constructivism, committing all university students to the active, reflective and responsible construction of one of the aims of the university, which is the production of scientific research for the solution of social problems.

The study problem focuses on poor quality of scientific research in Peruvian universities. A knowledge management model is proposed based on pedagogical constructivism in order to improve the quality of scientific research in universities of the country.

The object of study is the analysis of the quality of methodological scientific research processes in universities of the country, to verify its impact with the administrative and academic management of the Peruvian university.

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The general objective is to propose a knowledge management model based on pedagogical constructivism. The theoretical framework deals with constructivist constructs and strategic business management, based on proposals by Koontz (2012) related to vital signs of management: effectiveness, efficiency, effectiveness and productivity.

The methodology used corresponds to approaches: quantitative and qualitative, favouring methods: inductive and deductive in the analysis of existing problems and in the knowledge management proposal. However, the historical tendential method for the establishment of the fundamental regularities suggested by the Competency Curriculum of Peruvian universities, in relation to the construction of knowledge and the production of scientific research, is not ignored.

The techniques used were direct observation that allowed detecting problematic situation at the stage of the situational diagnosis, through direct, attentive, rational and planned perceptions of phenomena related to the research objectives, under natural and habitual conditions, in order to find a logical explanation of the study phenomenon.

The index card technique, used for registration of essential constructs related to study variables based on comprehensive readings and bibliographic searches, allowed to record data of compendiums, novels, journals, newspapers, experiences; using as instruments bibliographic, summary, commentary, etc.

El análisis estadístico, utilizado con ayuda del programa computacional SPSS, con evaluación precisa, real y efectiva en base al cuestionario de calidad de investigaciones científicas en el Perú. Los instrumentos utilizados fueron: Guía de Observación, Cuestionario y Modelo de Gestión del Conocimiento, validado por Juicio de Expertos.

Methods

Tendential-historical method was used to establish essential regulations that the Ministry of Education suggests respecting to knowledge management models.

Systemic-structural method was used to develop the knowledge management model. Dialectical method to specify contradictions between the model proposed and the contribution to the improvement of scientific research in the country's universities.

Results and discussion

Analysis and interpretation of the questionnaire

The scientific research produced by students and professors receive the recognition in the university and manage its register to [1]INDECOPI.

Table 1
Enquiry about recognition for publications made.

Indicators	f	%
Yes	04	8
Not	42	84
Did not answer	04	8
Total	50	100

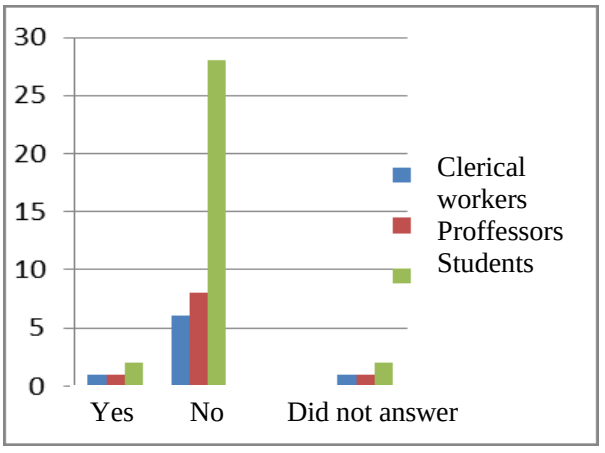

Figure 1. Questionnaire applied to university actors on 15/04/2015

[1] National Institute for the Defence of Free Competition and the Protection of Intellectual Property

Table 1 showed that, 6 clerical workers, 8 professors and 28 students, that is, 84% thought the scientific research produced by students and teachers did not receive recognition within the University, nor did managed its registration to INDECOPI.

The majority percentages showed negative perceptions in the management of knowledge, since the actors interpreted as scientific research produced only those made by students, which served them to graduate and then sent to the library. Did it correctly explain neither the recognition policy nor the intellectual property registries to INDECOPI.

The academic unity registered periodic publications and the results of performed researches.

Table 2
The academic unity register periodic publications and results of performed researches.

Indicators	F	%
Yes	48	96
No		
Did not answer	02	4
Total	50	100

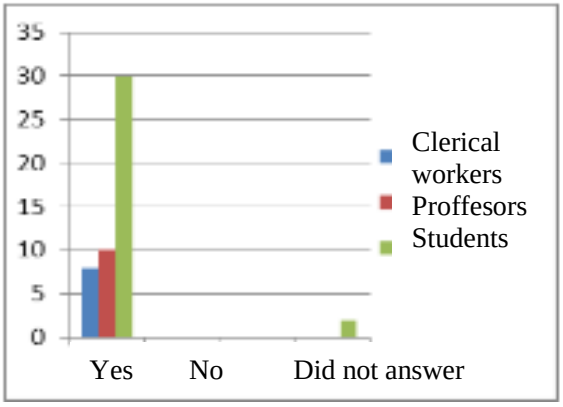

Figure 2. Statistical results of data processing.

Table 2 showed that, 8 clerical workers, 10 professors and 30 students, that is, 96% thought the academic unity do registered periodic publications and the results of performed researches which appear in in offices of pre and under graduate. 4% did not answer this indicator.

The majority percentages showed wrong perceptions in the management of knowledge because they did not identify neither the functions, nor those in charge of the Academic Unit. Besides, insisted on recognizing as scientific investigations, only those carried out by undergraduate and postgraduate students, which served to obtain degrees of Bachelor's, Master's or PhD degrees that were then leaved in the University library.

Table 3
The academic unity show economic sums used in financing and execution of researches.
Execution of researches

Indicators	f	%
Yes	6	12
No	40	80
Did not answer	04	8
Total	50	100

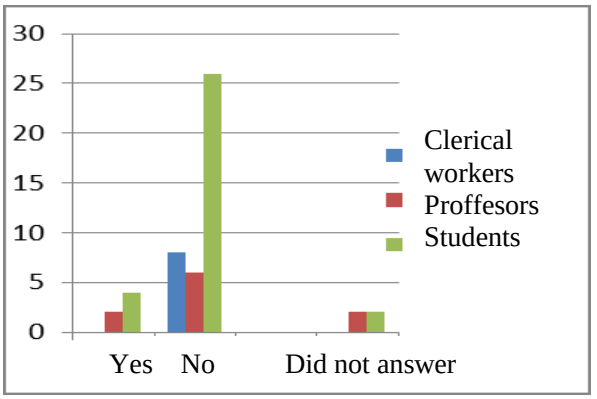

Figure 3. Statistical results

Table 3 showed that, 8 clerical workers, 6 professors and 26 students, that is, 80% thought the academic unity do not show economic sums used in financing and execution of researches.

The majority percentages were negative because the university actors did not know the economic amounts invested in academic events or scientific research production.

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Unfortunate situation since the events always happen and they demand spending and investment in the realization, recovery and profits after the activity. Regarding production, it is inferred that the percentage is non-existing because the university almost never set aside any budget for students or teachers in charge of perform researches.

Table 4
To prove if methods and techniques used in information treatment are proper for scientific research.

Indicators	f	%
Yes	02	4
No	46	92
Did not Answer	02	4
Total 50		100

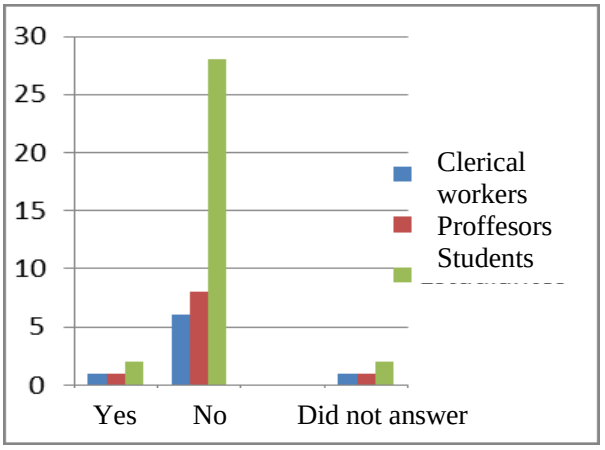

Figure 4. Statistical treatment of results.

Figure 4 showed that, 8 clerical workers, 8 professors and 30 students, that is, 92% stated that the methods and techniques used in information treatment were not proper with the scientific research. That concluding majority percentage is due to the methodology is the weakest point of the researches.

If there are 140 universities in the country, there are no methodologists capable of guiding the research. Investment is required, because while the University of Cambridge set aside
350 million dollars per year for research, our universities do not even invest 1%. It is also true that it is necessary to recruit 10,000 researchers to improve the process in a 20 years' time.

Today, most teachers and doctors work as researchers, but practice shows that they only carried out their theses, graduated and then accepted to work empirically on research.

Discussion

In relation to the specific objective, a questionnaire was applied to 50 university actors: 2 rectors, 4 deans, 6 clerical workers, 30 students and 8 professors from public and private universities in the Lambayeque to identify the development of the scientific research area. The tabulated and graphed results showed negative results and demonstrated scientifically the problematic situation detected empirically in the perceptual perception stage.

The most negative percentages were 96% stated that the publications performed are never registered; the total number of theses presented, substantiated, approved and disapproved is unknown. 96% recognize ethical faults, because most are copied from the Internet, the instruments are not reliable and the results presented are not analysed; 92% express methodological deficiencies and 92% question the simplicity, monotony, repetition of the theoretical bases, lack of update, lack of information processing, reflection and analysis in the citations.

Only item, 9 showed a positive percentage, since 60% said that the thesis did express the intentionality and purpose of the work performed, although they noticed the lack of coherence between the methodology and the theoretical framework.

In short, the results of the questionnaire showed that the 50 university actors noticed methodological and theoretical deficiencies in the development of the scientific research area, involving not only the production but also the knowledge management and administration of the University.

For this reason, the proposal of the knowledge management model was born to overcome existing problems, especially considering that one of the university purposes is the scientific research, a situation that is desired improve.

The epistemological foundation of the knowledge management model is the support for the fulfilment of the objectives, promoting the commitment, active and reflexive mobilization of university actors, adapting theoretical constructs of pedagogical constructivism, associating Company, University, Society, Science and Production at the service of others and through the consensus of and effective ideas for the achievement of common objectives.

This proposal appears in the results and contributes with the improvement of the scientific research quality in the different universities of the country.

The validation of the model proposed and whose cards appear in the annex section and correspond to the expert's judgment truly accredited, who accepted the proposed foundations, observed some whereas-clauses in the applied instrument and in the proposal, which after correct observations were verified, they proceeded to sign of the validation certificate.

Conclusions

Through the questionnaire, the 50 university actors showed their perceptions regarding the low quality of scientific research in the country's universities.

The knowledge management model based on pedagogical constructivism develops four fundamental pillars: To plan, in charge of the Rector as university leader; To manage human resources, true engines of development; To do quality scientific research; and To verify the results based on measurements, analysis and process improvements.

The knowledge management model is constituted in a systemic and integrative approach, which manages the improvement of the quality of scientific research based on the organizational triad: discipline, process and people; linked with the philosophical foundations of the university and the commitment of the actors.

From the results of the questionnaire it is inferred the general disposition of the university actors to participate actively, consciously and reflexively in the knowledge management model that leads to improve the quality of scientific research in the country.

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