Identification of Difficulties in the Consolidation of Research Processes at a Higher Education Institution: A Case Study

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ABSTRACT
Research is one of the three institutional basic functions of the University, and as such, universities that do not consolidate their research processes do not present a good projection in the future. As a multi level organization, the University must create and strengthen guidelines that transform it into a strategic actor in competitive markets, which makes research a tool to meet the strategic objectives of funding and academic excellence. In Latin America, it is a priority to develop in university students and professors the necessary abilities to enhance research skills. In this exploratory research, a mixed approach in order to investigate the expectations and perceptions of the academic community at Corporación Universitaria Minuto de Dios-Sectional Bello (UNIMINUTO) with respect to the consolidation of research processes in the institution was applied. Findings prove that the most important situation to evaluate regarding the developed investigative processes in UNIMINUTO is the role being played by the outreach activity of the Research System within the institution, as there is a general lack of students' knowledge in this regard. Similarly, it was found that professors are familiar with research in their areas but unfamiliar, to some extent, with what happens in terms of research in other fields within the same institution.

Keywords: research processes, higher education institutions (HEIs), difficulties in investigative processes, consolidating research processes.

INTRODUCTION
Research experiences are associated with obtaining positive academic outcomes for students, and future permanence of the research process depends on the development of research within universities (Rip, 2011). Similarly, the development of research processes within universities is closely linked to the perceptions and motivations of the academic community in terms of benefits from research (Jusoh & Abidin, 2012), such as: publishing, prestige , financing, experience, social support, economic benefits and other aspects related to the time commitment, balance of personal life, and roles in research (Adedokun & Burgess, 2011). Despite this, the construction of science and research by the Higher Education Institutions (HEIs) presents difficulties due to the low contribution made in forming scientific and research skills in students (Rojas, 2010).

Based on the above, this study seeks to identify the expectations and perceptions of the university community of the School of Economics and Administrative Sciences at Corporación Universitaria Minuto de Dios - Sectional Bello. In this sense, this study will help to identify the difficulties of HEIs to formalize and strengthen its investigative processes, negatively affecting both participation and recognition of the academic community in these processes.

LITERATURE REVIEW

Importance of research in educational institutions

The future of universities depends on the level of research that each one develops; in fact, universities that do not carry out research have a poor outlook in the future. Universities, specifically from research groups, must seek to apply the concept of "re-contextualization of science in society" in order to make the research process more current, where students are encouraged participate and perceive the usefulness of being embedded in research training (Bolin, Lee, GlenMaye, & Yoon, 2012). Hence, the formation of interdisciplinary groups is recommended, since in such groups there is greater cooperation and feedback among different curriculum areas, which to some extent can generate greater attraction for students than unidisciplinary or individual forms of research(Rip, 2011).

In this sense, the university as a multilevel organization should create guidelines with the aim of transforming it into a strategic actor operating in competitive markets, which makes research a tool to meet its strategic objectives: funding and academic excellence. The global trend today is the creation of alliances and mergers between universities and public research organizations; for example, the governments of the Netherlands, Germany and France have created areas of research where they reunite different research groups from universities to create new initiatives and convenient ideas with the development of a nation (Rip, 2011). Another note worthy example in this regard is the efforts of Mexican institutions, such as the Secretaría de Educación Pública (SEP) and the Consejo Nacional de Cienciay Tecnología (Conacyt), that have increased public and private investment in research and development (R& D) universities. It is thus recommended that, in those areas, governments invest an amount exceeding 2% of the GDP of each country (Licona & Rangel, 2012).

Specifically, to meet the new challenges that universities face, Rip (2011) proposes to change aspects of its management, evolving from partially independent research groups where the general boundaries are blurred and many difficulties are faced, to research groups with "interdependence combined" where these difficulties are overcome. This refers primarily to universities so that they can participate in bidding for contracts to manage and deliver a research program or get contracts to train students in specific areas. A challenge in Latin America universities, according to studies in Puerto Rico, is to develop students' skills (1) to navigate between different sources of information and knowledge in different media, and (2) to assess the value of information found and its potential for research (Mazurkiewicz & Potts, 2007).

Universities involved in research should change its structure and focus its research strategy. The concept of "strategic research "is defined as "basic research carried out with the expectation that it will produce abroad base of knowledge according to the solution of practical problems in the future" (Irvine & Martin, 1984, pp 11). To meet this objective, universities that have a research approach should have some access to databases and bibliographic resources, either electronic or physical, that will also attract greater participation and student interest (Mazurkiewicz & Potts, 2007).

A common method used in countries such as Holland, USA, UK, among others, has been the creation of the so-called centers of excellence and relevance, which are entities created to perform specialized research on a topic. This type of research is funded by interest groups, investigative agencies or by the governments, making those entities an excellent option to create groups and encourage, train and form students in research (Rip, 2011). The primary key in universities is to diversify and recombine cognitive processes (learning) and institutional processes (service); this means researching in different areas, having various laboratories--if possible--, and achieving adequate financing of companies and interest groups. The centers of excellence should seek personnel qualified in research (Prosser, Martin, Trigwell, Ramsden, & Middleton, 2007).

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The degree of a university's support to the research process results in strengthening the potential of creativity and creating new ways of thinking and working in the community. In this sense, the research environment must have some degree of deliberate and conscious relationship with external actors; i.e. it should promote and support processes that are liked by the community while necessary with the market demands, taking into account both researchers and stakeholders (customers) (Diamond & Rush, 2012).

By the same token, Kyvik and Olsen (2012) found that the needs for change and adaptation in doctoral programs are many. It is necessary to develop inclination towards research on students, from initial courses, creating a continuing interest in the matter; so, they suggest increasing students' participation in research groups on research topics demanded by the market, and on how to find funding sources in labor markets, at a time of encouraging a scientific aptitude in them. Some authors emphasize this need in all the areas of knowledge and even consider incrementing professional knowledge at the service of humanity a professional "moral duty",

which is naturally achieved through programs that encourage and stimulate research (Carreño, 2011; Vázquez, 2014).

Expectations of students and academics on research

Although the literature is not extensive in discussing the views held by scholars about research and about the fact of being researchers, the topich as also been studied. From this perspective, the importance and value that scholars give to the matter ranges from personal interest and professional promotions to benefits of research such as publication, prestige and funding (Åkerlind, 2008).

On the other hand, a study of the preconceptions of students about the learning processes and profits that they accumulate through participation in research experiences, during their undergraduate studies, found that science was perceived as a solitary task. Besides, scientists were seen as socially isolated individuals, who do not need to enhance their communication skills in order to develop a research, and are not expected to have any social or interpersonal relationship with fellow researchers. For this reason, it is important to know, not only why individuals decides to participate in a research group and what they expect from it, but also how they make that choice, because when someone voluntarily decides to participate in an investigation, the person shall be required part of their time, previously used in other activities (Osamor&Kass,2012).

Moreover, a study at Ibadan University Collegein Nigeria, Osamor and Kass (2012) found that 87% of people (both students and teachers) consult with someone else (spouse, family, friends, teachers, etc.) when considering participating in the research program. Some of them required permission (especially spouses), and others participated in spite of the authorization had been denied. When asked about their reasons to participate in a research group, students said that they considered aspects such as personal growth, learning, and financial remuneration, all focused on personal gain (Osamor & Kass, 2012). Those aspects related to the motivation of the university community to participate in investigative processes are essential lto address their proper insertion into research projects (Ambrose, Bridges, DiPietro, Lovett, & Norman, 2010). Thus, actions are required to involve students directly in research processes in order to increase their interest and knowledge about research (Wells, 2006).

A study realized by the Australian National University on the conceptions of research among academics at universities, in extensive research, sheds experience focused on results, impact and value of research projects. In this regard, through academic research processes, hope to contribute to the achievement of academic goals, based on their interests and personal and professional goals; seek to generate positive results within research teams in terms of providing funding to hire new investigators, or continue with the research center; intended to contribute to existing knowledge, which can generate a positive impact on the world and finally, seek to address real world issues and find solutions to these problems (Åkerlind, 2008). For students, this search for positive results in the investigation process encourages greater proactivity and commitment to the process of research training (AlGhamdi, Moussa, AlEssa, AlOthimeen, & Al-Saud, 2014).

Methodologies used to study the perceptions of students and academics on research

Among the methodological aspects used to achieve the results of the studies described above, prevailed data collection through surveys and interviews applied to undergraduate students from public and private universities (Rojas, 2010); these surveys included both closed and open questions and then for statistical data analysis packages were used, open-ended questions were coded so that it could be a quantitative analysis of these. To apply the surveys and interviews a sample group with specific characteristics (Osamor & Kass, 2012) was chosen. The questions analyzed for the study were mainly: What are the main criteria for the recruitment and placement of staff research? Is there a policy to support scholarships/course /publications/salary researchers? Is there a policy of publishing the results? Where does now and what should occupy? How do you assess the impact of research? What aspects of existing standards stimulate or hinder the development of research? (Mayorga, 2001). As motivational questions was mentioned, for example: Say why she decided to participate in the study, how did you decide to participate in the study? Did you talk to someone before deciding to participate in the study?, among others, (Osamor & Kass, 2012).

Studies involving students in interdisciplinary research programs under the supervision of academic tutors, in order to improve their aspirations regarding training and research-oriented career, for which assessments were performed learned results were also designed and the impact of the program which responded to open-ended questions covering topics such as expectations and perceptions of research experiences at the undergraduate before participating in these (Adedokun & Burgess, 2011), additional to this research work was assessed through oral presentations (Kardash, Wallace, & Blockus, 2008); to study the perspective of academic research, in-depth

interviews doctoral students and faculty research intensive universities were conducted, academics were considered both with substantial experience in research, as investigative story short (Åkerlind, 2008).

RESEARCH METHODOLOGY

For the development of this exploratory research, surveys and interviews with students/professors of the Corporación Universitaria Minuto de Dios (UNIMINUTO) were used in order to collect first hand information, which sought to have a direct approach to the sources that would allow researchers to investigate the expectations and perceptions of both populations regarding research processes taking place at UNIMINUTO. This study was conducted as self-assessment by the institution in order to know the main factors influencing the participation in research experiences of students and professors of the School of Economics and Administrative Sciences.

In order to analyze the data collected, five categories of questionnaires and interviews were formulated, generally addressing the perceptions of students and professors about the research system, their motivation and expectations to participate in research processes, and their knowledge about the promotion of the research system within the institution. Two hundred and twenty-three self-administered surveys applied to undergraduate students of the Corporación Universitaria Minuto de Dios belonging to the School of Economics and Administrative Sciences, through a not probabilistic sampling method applied, given the exploratory nature of the study. Finally, in order to compare the results, a discussion was held based on bibliographic references.

Ten seventy-six percent (10.76%) of the surveys were discarded due to inconsistencies (double answers, incomplete surveys, students from other faculties); therefore, 199 valid surveys were considered valid for the evaluation process and to gather information concerning expectations, perceptions, motivations, and knowledge about the promotion of research processes at the Corporación Universitaria Minuto de Dios. To present the obtained results through a quantitative method, the proper structure of the survey was proved. In this regard, under the criteria of the researchers, a sample of 199 students was selected and the method of Alpha by Cronbach was used in order to analyze the internal consistency of the instrument in each of its tests. An index of consistency higher than 0.60 was obtained, which proved the items of each test to be reliable.

FINDINGS AND DISCUSSIONS

Initially, a student profile is presented, displaying the surveyed population's differences according to their ages, level of advancement in their major, and interest in conducting research (Table 1). The table shows that 31% of the surveyed students correspond to a group aged between 16 and 20 years old, 32% is part of the group of students aged between 21 and 24 years old, 16% are students between 25 and 29 years old and the last group is a 21% of students who are within the ages of 30 and 43 years old. The analysis of this variable is very important--since there is no homogeneity of the population in relation to this factor--and allows identifying the different age groups that make up the different levels of advancement in the university majors. Meanwhile, a 35% (1st, 2nd and 3rd semester) of students are placed at the basic level, 37% (4th, 5th and 6th semester) at the intermediate level and 28% (7th, 8th, 9th and 10th semester) at the advanced level. The objective is to analyze the effect that a particular level of advancement in the major has over the degree of knowledge and interest of students in participating in research.

Table 1: Students' Profile

		Age				**Level of Knowledge**				**Interest in conducting research practice**		
		16- 20 years old	21-24 years old	25-29 years old	30-43 years old	High	Medium	Low	Null	Yes	No	NA
Major Level	**Basic**	51%	25%	10%	14%	6%	13%	32%	49%	78%	14%	7%
	Intermediate	28%	32%	19%	21%	8%	11%	44%	36%	54%	40%	6%
	Advanced	9%	42%	18%	31%	24%	22%	24%	31%	38%	53%	9%

Regarding the students' level of progress within their university majors, it is noticible that at the basic level most students range between the ages of 16 and 20, while at the intermediate and advanced levels are students between 21 and 24 years old. The students who are in the last semesters (advanced level) of their major show greater familiarity with the offer and the research focus of the institution (22%) compared to basic and intermediate level students (6% and 8%). This may be because advanced level students have greater experience inside the institution, which has allowed them to get familiar to the communication channels used by the university to offer their research processes. Forty-four percent (44%) of the students at the intermediate level

reveal that their knowledge of the research system is low, while forty-nine (49%) of those undergoing basic levels show a null degree of knowledge, pretty representative, which suggests that they have not noticed the offer supplied by the institution in terms of research. This finding reflects the importance of evaluating the dissemination and promotion system of research within the institution.

Seventy-eight (78%) of the basic level students and (54%) of the intermediate level show a greater interest in carrying out a research practice; an option that can be seen as an opportunity for them to put into practice their academic knowledge and focus more on this type of achievements. On the other hand, (53%) of the advanced level students have a greater disinterest in this type of practice and less knowledge of it, which might explained by the fact that they are more focused on developing professional experience. It is important to keep in mind that the advanced level category is composed by thirty-one percent (31%) of students between 30 and 43 years old; it´s possible to conclude that they are people who have already started their working lives and are developing academic studies to enhance their career prospects. Therefore, although the academic practice is taken into account by thirty-eight percent (38%) of the students in their last semester, it is not representative in regards to the other levels.

Having described the characteristics of the surveyed population, their perception about participation in research processes was evaluated taking into account that a successful development of this type of experience can be highly influenced by the image that students perceive of it: in some cases students' appreciation can function as a driving factor and in other situations as a variable that prevents them from getting involved in research (Adedokun & Burgess, 2011). With this goal in mind, the students were asked about the investigative skills that students have been developing throughout the training process in order to find out if there has been a significant relationship between the development of those skills and the degree of knowledge and students' interest in participating in such processes. This question followed Adedokun & Burgess (2011)'s claim that students do not consider themselves sufficiently prepared to assume the challenge of starting a research process, so it is important to identify in which level of their major they manifest to become more proficient in these kind of skills (Table 2).

Table 2: Investigative skills according to the student profile

	Level of advancement			**Level of Knowledge**				**Interest in conducting research practice**		
	Basic	Intermediate	Advanced	High	Medium	Low	Null	Yes	No	NA
Database search	33%	38%	30%	19%	20%	31%	30%	54%	43%	4%
Methodological Designs Development	28%	38%	34%	20%	16%	30%	34%	58%	34%	8%
Development of Scientific Method	28%	36%	36%	11%	25%	25%	39%	67%	33%	0%
Standards Management (APA)	47%	30%	24%	14%	17%	35%	34%	65%	30%	6%
Qualitative observation techniques	30%	41%	30%	19%	16%	23%	42%	69%	25%	6%
Data analysis	34%	37%	29%	14%	13%	38%	34%	60%	34%	7%

In relation to the students' development of research skills, Table 2 shows that those who believe that are more skilled for Standards Management/APA constitute forty-seven (47%) of the basic level students, while more advanced students did not recognize this research activity significantly (30% intermediate level and 42% advanced level). Of the students who said they have strengthened Qualitative Observation Techniques, forty-one percent (41%) belong to the intermediate level. The majority of students who consider themselves more skilled in the Development of Scientific Method belong to intermediate and advanced levels (both at 36%). Regarding Databases Search, figures show that students in the three levels have been equally trained to strengthen this skill and to improve the quality of their work (33%, 38%, and 30%). Out of those who reported having strengthened those competences throughout the course of their majors, Basic level students scored 151 times among the different options, the Intermediate level students 158 times, and the Advanced level ones scored only 128 times, which evidences a greater knowledge and development of such competences by students who are between their 1st and 6th semester.

Considering the variable "level of knowledge", it´s possible to consider that most of the students that claimed to have strengthened investigative skills such as the Development of Scientific Method (39%) were classified into a null degree of knowledge. A similar situation occurs with the population that stated that they had developed Qualitative Observation Techniques throughout the course of their majors: forty-two percent (42%) was classified with a null degree of knowledge. Meanwhile for those who stated to be more skilled with Data Analysis, thirty-percent (38%) present a basic degree of knowledge. Lastly, out of those who consider that they have strengthened the Development of Scientific Method, twenty-five percent (25%) were classified with medium degree of knowledge.

Based on the findings described above, it´s suppose that the fact of developing scientific tools for possible participation in a research does not affect the degree of knowledge that students have about the research system of an institution. This evidence is supported by the analysis of the profile of the students surveyed, in which it is noticeable that those students in basic and intermediate levels have a degree of knowledge of this system between low and null; however, students in these two levels reveal that, during their majors, they have strengthened their investigative skills over those in the last semesters of their majors (7th, 8th, 9th and 10th semester).

Regarding students' willingness in participating in a research-based practicum, those who felt trained in Qualitative Observation Techniques and Development of Scientific Method showed a higher interest (69% and 67%). However, a large portion of the students who believe that they have strengthened Database search skills expressed that they were not interested in this type of research process (43%). Considering that in the analysis of the profile of the students surveyed, the ones who showed increased interest in participating in research-based practicum were students of basic and intermediate levels, it´s possible to conclude that reinforcing research tools will have an impact on students feeling to be capable of participating in research, and thus considering the possibility of a research-based practicum.

This study also explored students' perception of the most important things to consider when developing a research process; seen that participating in research represents an additional effort to them, there are several factors that can influence their decision to take an active part in a research project. Within these factors are the accompaniment of a professor, the financial rewards that can be obtained in the course of the project, the dedication required by the project and how the experience impacts their resume. Consequently, the study seeks to identify whether students' perception affects their participation in a research-based practicum and if there is a relationship between such perception and the degree of knowledge they may have of the university research system (see Table 3)

Table 3: Most important factors when investigating

	Level of advancement			**Level of Knowledge**				**Interest to conduct research practices**		
	Basic	Intermediate	Advanced	High	Medium	Low	Null	Yes	No	NA
Teacher tutoring	58%	53%	56%	74%	55%	43%	61%	61%	49%	50%
Time to investigate	46%	64%	71%	52%	62%	60%	61%	58%	60%	71%
Ability to generate new knowledge	58%	44%	31%	43%	45%	48%	44%	49%	40%	43%
Ability to publish this research	19%	31%	31%	22%	34%	27%	25%	25%	32%	14%
Economic retribution	10%	14%	20%	26%	28%	9%	10%	13%	15%	21%

Table 3 shows that basic level students consider that the most important factor when undertaking research is the guidance of a professor (58%) and the possibility of generating new knowledge (58%). The intermediate level was characterized by considering the time factor as the priority to start an investigation (64%) same as the advanced level students (71%). It was also found that students at this level considered the financial rewards they can get through their participation in research as an important factor (20%). This may be explained by the fact that last semester students seek the opportunity to generate income based on their status of progress in the

curriculum; in addition, advanced level students are mostly between the ages of 21-24 and 30 43. This finding corroborates previous studies that claim that economic compensation is relevant when undertaking research (Osamor & Kass, 2012).

Regarding the degree of knowledge of students, findings showed that those with a high knowledge of the research system consider the guidance of a professor essential (74%); meanwhile, those with medium and low knowledge consider the time that developing a research process implies as the most important factor (62% and 60% respectively). Finally, the ones who have no knowledge of the system consider tutoring and time as the most important variables (61% both). Sixty-one percent (61%) of those students interested in conducting a research-based practicum state that the most important factor to consider is the guidance of a professor and still those who are not interested believe that to be a relevant factor.

Time is an influential factor when considering participating in research processes; both those who are interested in conducting a research-based practicum and those who are not consider it a significant variable (58% and 60% respectively). By the same token, the economic reward is a more important factor for those who are not interested in this type of practicum (15%) than for those who are (13%). This may be because, from their point of view, the time that must be spent in such process should be rewarded financially even when they are not interested in participating.

CONCLUSIONS

The analysis of the findings in this study suggests that the most important situation to evaluate in regards to the development of research processes at the Faculty of Economics and Management Sciences at UNIMINUTO is the role being played by the outreach activity of the Research System itself inside the institution. Through the analysis of surveys and interviews, it´s shown that there is a general lack of students' knowledge about the research approach of the institution and opportunities such as publications and hotbeds of research that they have to participate. On the other hand, results showed that professors are familiar with research in their areas but unfamiliar to some extent with what happens in other fields of knowledge within the same institution.

Despite the low participation of students in research processes, such as hotbeds of research within UNIMINUTO, it seems that they associate research with an enriching, innovative activity that trains and provides development; this may be an indicator of potential in the minds of students in order to achieve connecting classrooms with research processes and thereby, not only fostering a research culture, but also directing research towards the interests of students. In this regard proposing research methodologies that encourage this process and evaluating their success seems interesting for further research.

Likewise, it was found that in the course of their training at UNIMINUTO, students strengthen scientific skills such as information analysis, using APA standards and searching databases; all this leads to the formation of a research culture within the institution. At the same time, it´s observed that the time invested is a crucial variable in students' participation in research processes, which may be due to many of the students surveyed being people who work and study in a parallel manner. Time is the most important factor to consider when undertaking research and express no to be motivated to carry out a research-based practicum because the time that it demands.

At UNIMINUTO it seems to be high potential to conduct research: both professors and a large number of students want to participate in investigative processes. Low level of research thus appears to reside (1) on the poor promotion of research opportunities done by the system itself, on the one hand, and (2) on the perception of mostly working students about research to be time consuming and not economically rewarding, on the. As a consequence, much of the university community is not aware of the fields and research lines that exist at UNIMINUTO and do not perceive participating in such processes as a valuable achievement.

In the field of expectations, it is advisable to begin forming professor researchers in a more appropriate manner so that they have concepts clear at the time of transmitting them to their students. Equally, it´s property start projecting and forming lines with a more external focus (open to other communities) and more linked to new technologies; students and teachers are expected to generate new knowledge and have the ability to transmit it to others, positively impacting on society, but without avoiding feedback from other research groups and/or research hotbeds.

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