FORMATIVE RESEARCH STRATEGIES IN STUDENTS OF MEDELLIN

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Hotbeds of research

The hotbeds of research have been well received between institutions of higher education because of its direct impacts and easy management.

The direct benefits that have encouraged its popularity are: easiness articulation among formative research and research training, the increasing of productivity in academic terms and overall the direct qualified generational replacement generated to institution.

The hotbeds of research are born in the Colombian public universities context, especially in the University of Antioquia where teachers and especially students decide to create training scenarios [1].
Hotbeds of research

Learning communities where students and teachers of different field of knowledge with the purpose to search an integral education and the consciousness of academic community toward a scientific and interdisciplinary culture.

The brace space of conceptual and methodological tools in the searching o few options that enrich the relation teaching-research.

Academic activity extracurricular aimed at promoting the scientific spirit inside of educational institutions.

Spaces where students are protagonist of their proper learning. Thereby the students are responsible of build their proper knowledge and to acquire proper attitudes to the practice of research and citizenship.
Theoretical Framework

In general the hotbeds of research have been adapted to the necessity and dynamic of each institution of higher education, taking two ways: the incorporation through the curriculum like a part of formative course of students or through to incorporation to the research groups like a part of qualification process and generational replacement.

About the theme of hotbeds of research like a strategy between research training and formative research, exist a big quantity of documented cases that from each institutions permit to observe quickly the positive impact for the institutions when see students that have finalized their studies and have a working relationship with in the university, to the team or research project and a master’s degree study with positive results in all the cases.
Methodology

Technological Metropolitan Institute has four faculties associated with the areas of Arts and Humanities, Administrative Sciences, Exact and Applied Sciences, and Engineering.

The institute has a total of 29 research lines, 66 hotbeds and 951 students linked to research activities in these different faculties.

Next, a classification of the faculties, their groups and lines of research is made according to the number of hotbeds and students associated with them.
Hotbeds by faculty

Faculty of Arts and Humanities; 10
Faculty of Administrative Sciences; 15
Faculty of Exact and Applied Sciences; 13
Faculty of Engineering, 28

Graph 1. Hotbeds by faculty. Source: own elaboration
Hotbeds by research group

Graph 2. Hotbeds by research group. Source: own elaboration.
Hotbeds by research line

Graph 3. Hotbeds by research line. Source: own elaboration.
Graph 4. Students by faculty. Source: own elaboration

- Faculty of Arts and Humanities; 147
- Faculty of Administrative Sciences; 172
- Faculty of Exact and Applied Sciences; 128
- Faculty of Engineerings; 504

Students by faculty
Students by research group

Graph 5. Students by research group. Source: own elaboration
Students by research line

Graph 6. Students by research line. Source: own elaboration.
Conclusions

A high impact on students who pass for this scenario is generated by the hotbeds of research. Also, form the same concept of hotbed, a mapping of what is made and what is purpose is realized by him. The hotbeds for research talk about integral education, in other words from the learned knowledge an epistemological, esthetic and ethic components are gathered, the practice and the knowhow and the relating or the social skills too. From each component always it can to find how supports its formation like academic future, like professional and civic human being, although some are more clear in any moment.

From the epistemological component, the students who pass for the hotbed of research learn directly two types of knowledge: the thematic or proper elements of the career or field of hotbed’s knowledge, and the methodological and research knowledge. This type of learning won’t be received in a traditional class, because the student discovers his knowledge by himself, increasing the appropriation of knowledge, the memorizing improvements, in other words his learning process and knowledge acquisition increase. From this component not also we talk about the learned, we talk about the method used for learning by student, because the student became a critic and analyst person, with abilities that can be used in his professional, academic and personal life.
Conclusions

From the esthetic component, we talk about the knowhow, because those students who make a research project not only they learned the theory but also they learned new abilities and acquiring certifiable experience of researchers, which it gives a value added and professional market difference in front of those students who do not have any experience. A part of value added of invaluable experience, a student can accumulate talk participations (In Colombia, the RedCOLSI makes two annual events only for researcher students) and other academic events, research articles, papers and institutional journals, and the possibility to work in other projects. In general the experience form who made a research and scientific work, offer a transformer panorama for the student.

To finish the most important component, the ethic component, this allows to talk about transformation of members inside of hotbed, something talked in education but is difficult be explained it. In the hotbeds of research understood like learning communities, the students never are alone, and their work always is realized and has a feedback by their counterparts, other students that not make vertical pressure like traditional classes. Thus, the student learns technical abilities like team work, to use collective knowledge, to share his ideas and have assertive way communication with his hotbed partners and other academic hotbeds and institutions of region and other countries. This collective work allows student to be conscientious with his intra-subjectivity and to improve his behavior in personal life, because he understands his place and responsibilities on his environment.
References

Thank you for your attention

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