

THE MANAGEMENT OF SCIENTIFIC EVENTS IN THE UNIVERSITIES: A METHODOLOGICAL PROPOSAL

Mario Adelfo Batista Zaldívar^{1*}, Francisco Infante Estrabao², Julio Nolberto Pérez Guerrero³, Juan Rafael Pérez Pupo⁴, Nadia Aimee González López⁵

¹ Prof. Dr., Politecnico Education School of Chimborazo, Ecuador, mariobatzal69@gmail.com

² Ms. Municipality University Center "Calixto García", University of Holguín, Cuba,
finfantee@uho.edu.cu

³ Prof. Dr., Politecnico Education School of Chimborazo, Ecuador,
julionolberto2011perez@gmail.com

⁴ Prof. Dr., Politecnico Education School of Chimborazo, Ecuador, perezpupo@gmail.com

⁵ Ms., Politecnico Education School of Chimborazo, Ecuador, nadiaaimegl@gmail.com

*Corresponding author

Abstract

The management of scientific events in the universities has become a process of vital importance for the socialization of the scientific-technological and innovative work of these institutions. It is also essential to contribute to their improvement and social relevancy; nevertheless, the existent theoretical and methodological foundations for its development are insufficient. In this article it is presented a methodology for the management of scientific events in these institutions, which improve significantly the indicators of this process. The methodology has been applied and validated in a Cuban university, and its effectiveness was verified through the main theoretical and empiric methods of investigation used. The methodology consists of three recurrent work phases, which are: i) conception and design, ii) development iii) evaluation and feedback. In each one of them is executed several stages. It is important to specify that in each step it is necessary to use multiple management tools. The methodology improves significantly the indicators of this process, and based on the results it contributes to significant improvement of indicators related with the management of scientific events and, consequently, the social relevancy of university increases. The originality and essential values proposed are sustained in its four qualities: systemic, flexible, participation and pro-active character.

Keywords: Management, scientific events, university, methodology, municipal university site.

1. INTRODUCTION

The consulted literature showed that the management of the science, the technology and the innovation in the universities has vital importance (Aguilera y Rosales, 2006; De Souza, 2002; García, 2008; Núñez, Montalvo and Pérez, 2006; Núñez, 2007; Romillo and Taboada, 2006), because it contributes to reach a sustainable development of their environment by means of the administration of the knowledge and the innovation.

However, even when the theory of the administration of the science, the technology and the innovation in the universities have been developed in the world since the XIX century for many authors and the same ones coincide in the necessity of negotiating this process in a systemic way, it is insufficient the documental evidence of models and methodologies for their management in the universities. Of the above-mentioned it is deduced that the theoretical and methodological supports for the administration of scientific events in these institutions are insufficient, and the existent ones present theoretical and practical limitations.

The above-mentioned confirms the necessity to carry out studies that lead to the proposal of methodological tools that allow negotiating in a systemic way the scientific events in these institutions of superior education.

It is intended as objective of the present investigation the elaboration and application of a methodology for the management of scientific events in a university that allows improving their acting indicators in this process.

2. METHODS

To understand the study object in its development, its history and its logic, to discover the essential relationships and general characteristics of it, to determine generalizations and to confirm theoretical formulations; the main theoretical methods of investigation were used, that is: historical-logical, analysis and synthesis, inductive-deductive, hypothetical-deductive, modeling.

For the practical confirmation of the methodology of management of scientific events was selected a Cuban university, considering that the management of scientific events in it, presented the same theoretical, conceptual and methodological inadequacies and limitations presented in the study object. It was used several management and methodological tools, and in their application the actors participated implied in the process to assure a focus multi, inter and trans disciplinary.

For the summary of data, the following methods were used: participant scientific observation, questionnaire, semi-standardized interviews and experiment. By virtue of that study object is a complex social process, with the existence of a great number of variables, many of them outside of the investigator's control; a social experiment was developed, starting from a study of unique case.

The statistical analysis was centered in the descriptive statistics to know the evolution of selected indicators before and after having applied the methodology, the statistician student t for the validation of hypothesis, and the correlation analysis (coefficient Kendall) to verify the level of correspondence among the indicators to corroborate the systemic character of proposed methodology. For the use of these methods SPSS 19.0 (2013) was applied.

3. RESULTS AND DISCUSSION

3.1. Theoretical and methodological foundations of the investigation

At the present time, events of all the categories are developed in the world; among them: managerial events, congresses of associations, professional retirements, courses or formation courses of preparation, trips of incentives, scientific or medical conferences, golf meetings, activities of team building, launching of products, campaign of publicity, fairs of samples, among others. These evidence has a marked commercial character, because they pay bigger attention to the market aspects and business, leaving in a second plane the scientific-technological exchange.

Although in the world it is negotiated a considerable number of scientific events with a great quality in the different branches of the science, their popularization and the results exposed in them it is limited. In the consulted scientific literature (Almeida, 2006; Marrero, 2013), it is insufficient the thematic that approach this process. As it has been said, the universities contain in the better prepared actors to develop scientific and innovative activities who form part of the science strategy and innovation designed with the purpose of executing them, being the administration of scientific events one from the way out to the different indicators that are planned like part of this process.

Although in the universities a great quantity of scientific events of international and national character of high quality is negotiated, in the consulted literature (MES, 1999; Pérez, 2009; Pichs, Hernández and Benítez, 2010) only one procedure for the management was found; nevertheless, this constitutes a relating one important for this investigation.

(Pérez Campdesuñer, 2009) proposes a procedure from which these positive aspects can stand out:

- It facilitates, by means of the administration of scientific events, a way out to the science strategy and innovation of the university.
- It is conceived for the management of national and international events.
- It can be adequate to the internal events that are negotiated by the different areas of the university.
- It involves investigators, professors and students with the management of this process.

In spite of the positive aspects enumerated previously, the same one presents the following limitations:

- It carries the knowledge, but it does not make emphasis in the popularization of the results.
- It presents an insufficient systemic character, not achieving an appropriate interrelation among the different elements that compose the process.
- It shows an insufficient dynamic and participative character, because it does not contemplate all the social actors involved in the process.
- It does not achieve an appropriate integration of the actors of the environment, because the participation is limited in its management.
- It does not propitiate the active linking and dynamics from the participants to the event with the social environment, being this a form of disclosing the culture, the idiosyncrasy and the daily chore of the community, through the direct exchange with them or by means of samples, poster, conferences, etc.
- It presents a general character, not considering the particularities of the universities for the management of this process.
- It presents a low methodological level, not showing all the phases, stages and actions to develop for the management of events.
- It does not favor the necessary support of the territorial actors for the management of the process.
- It shows inadequacies in the control systems and exposure of the activity.
- It does not contemplate the participation in the event in a virtual way.
- The evaluation that it conceives considers only the impact indicators, and it excludes the process indicators that could settle down with the objective of stimulating the continuous improvement in the management of this process.
- It is insufficient the stimulation, evaluation and feedback of the process that allows to determine the difficulties presented to correct them.

The management of scientific events in the universities should become a dynamic element of the university, given different processes the links with the environment, allowing it to contribute to the execution of the science strategy and innovation, but the management of this process is insufficient according with the potentialities that possess, that is:

- It has professors that can present reports and participate in a direct way in the events.
- Professionals that can present investigative works to the different thematic lines.
- It has professors and students with possibilities of material and technician support.
- Possibility to develop conferences, exhibitions, workshops, round tables, etc. during the development of the event.
- It has work agreements with the different institutions of the territory.

The insufficient systemic management of the scientific events in the universities, in spite of the potentialities with which they count for it, it is, fundamentally, for the nonexistence of a methodological tool that provides it

the enough elements to develop it.

Also, the scientific events that are negotiated in these institutions are insufficient from the qualitative point of view, because most of these are negotiated at university level, not propitiating the exchange between the students and professors of the different universities of the country and of the world, because the events that are organized for the universities are based on the empiric knowledge of the actors that intervene in this process.

To the limitations explained previously is necessary to add others that constitute restrictions of the process, among those that are the following ones:

- The professors present a marked indifference and insufficient commitment with the management of this process, as well as a scarce sense of ownership.
- The actors' limited scientific-investigative and innovative preparation.
- Incompatibility of the interests and the professors' necessities with those of the institution.
- Slight voluntary, active participation and aware of the actors.
- Insufficient material, technological and financial resources.

That said previously corroborates the scarce experience in the management of the scientific events in the universities and the nonexistence of theoretical-methodological tools that guide to achieve the development of the same ones.

Starting from the realization of interviews, the application of a diagnosis and the author's practical experience in the management of this process, it was verified that the management of scientific events in the university study object was insufficient, and the results (quantitative and qualitative) obtained were low, corroborating that this process presented limitations, that is:

- The scientific events were scarce.
- The summoned events were executed in most to university level.
- The negotiated events presented technical, methodological and practical inadequacies in their conception and organization.
- The professors' insufficient participation and students.
- The presented reports showed insufficient quality.
- The professors had insufficient scientific-investigative and innovative preparation.
- The professors' insufficient culture in management of scientific events.
- The students and professors' insufficient motivation for this process.
- The management of scientific events was insufficiently approached in the science and innovation strategy.
- The university did not have a methodological tool that allowed it to negotiate in a systemic way this process.
- They did not take advantage of the potentialities of the university to negotiate this process.
- Insufficient integration of the local actors to the management process.

3.2. Methodology for the management of scientific events in the universities

The methodology proposed for the management of scientific events has a systemic and recurrent character, so the phases and stages should follow an order, besides being flexible and contextualized, allowing the participation of the actors in all the phases of the process. Among so much, in each one of the phases it is necessary to execute several stages or work steps.

The first phase: Concepción and design are the most important phase and it integrates in it the components of planning and organization of the process. It is where it is conceived, prepared, it planed and it organizes the process with four logical steps:

-Concepción and approval. In this stage a general plan of actions is approved for the implementation of the

methodology, the main agent that will direct the process is designated, the functional structures and the initial mechanisms of management are approved, the general politicians, and it is defined the control mechanisms and the basic resources to begin. The conception and approval of all the plans, mechanisms, instruments, etc. is made, keeping in mind the results of the diagnoses that are carried out about the capacities and potentialities possessed and those that should be developed. In this stage the capacities and potentialities that possess the University for the Realization of events are diagnosed.

-Creation and training of the Organizing Commission. The general Organizing Commission of the event is created and the necessary subcommittees. They will be responsible for the planning, organization, realization and evaluation of the scientific events. The professors and students to integrate the commissions will be selected according with the capacities and potentialities diagnosed in the previous stage and they will be qualified in management of events and in how to apply the proposed methodology, with the objective to endow or homologate the theoretical and practical necessary knowledge on the management of this process.

-Organization of the process. It is elaborated by the created commissions the concrete and precise action plans for the implementation of the methodology that includes, among other, the following elements: objectives, organisms, entities and specialists that should participate, condition organizational and the necessary logistics for the work. They necessary structures and organizational mechanisms of work to energize the process are constituted, etc. All the participants should be motivated, identified and committed with the activity elaborated, it approves and it begins the popularization of the convocation of the event, which will contain as minimum the following aspects: objectives, thematic, base of the event, norms of presentation of the reports, and results and awarding.

-Design of the work systems. Under the conduction of the created general commissions, using different technical methods and work in team, conform to the work systems for the management of the process.

Second phase: Development. In this phase the system of conceived plans is applied, it is carried out the management projected in the previous phase; it is here where the foreseen results are reached by means of the actions planned in the precedent phase, through five stages:

-Implementation and precision of the action plans for the management of the process. The created commissions implement the elaborated action plans approved in the phase one, which supports on the functional structures and the management mechanisms created. They elaborate and design the necessary documents for the realization of the scientific event: the certified accreditations, general programs of the event, the opening and closing, among others. The presence of the massive media of the territory is guaranteed and workshops and training seminars are developed to the juries.

-Establishment and (or) deepening of the links and work relationships for the management. For the successful implementation of the action plans and designed work systems it is required of bonds and strong work relationships among the actors that participate in the management of the process (professors, students, directive of organisms, etc.) and among the faculties, careers and the Administration of the university, which is necessary to mobilize the actors, to settle down and to consolidate alliances and agreements among them, that is:

a) The first one is the **vertical relationship** between the professors and students and the Government's directive, of the organisms and entities, among others. These bonds and relationships are an important end for the attainment of the projected actions and the successful realization of the event, all time that these institutions are supplying help, material collaboration and indispensable technique for the technical and logistical insurance.

b) The second are the **horizontal relationship** between the professors and students. To strengthen these bonds is also of supreme importance, because it assures the cooperation among the internal actors of the process, synergies are created, they coordinate actions, etc. Of the depth with which these relationships are materialized will depend significantly the technician-organizational quality of the event.

-Reception, evaluation and approval of the reports and posters. This stage is developed essentially by the technical control subcommittee. As many evaluation juries as necessary should be created, which will depend on the quantity of reports, the thematic summoned, etc. once in hand, the reports and posters, are distributed to the different created evaluation juries so that they evaluate them. In the case of the reports and the posters that are not accepted, the jury appraiser will make a judgment where the reasons of the non-approval are explained and returned back to the main author.

The technical control subcommittee will create a group whose function will be to maintain a systematic

communication with the authors. In case some of them decide to participate in a virtual way, it will be this group the responsible one of sending the questions that the jury appraiser asks on the work, to receive the answers of the authors and to give them to the same jury that formulated them for its evaluation. In this stage the Technical Program of the event is elaborated, the models for the evaluation of the reports, among others.

-Realization of the scientific event. In this stage the scientific event is developed. Here they put into practice all the ideas, actions and activities planned by the Organizing Committee. Simultaneous, it should be carried out other activities, such as: conference, book presentations, exhibitions, books draw, cinemas debate, among others.

The realization of a "Dry survey" one or two days before the development helps to correct errors and imperfections during their execution and to plan different alternative before possible eventualities and contingencies. This activity consists on to make a meeting with all the participants in the organization of the event and to put into practice in a virtual way the whole group of actions that they are designed for the realization of the event.

-Conclusion of the virtual event. The Subcommittee of Protocol, Accreditation and Prizes send the documentation of the event (participation and publication certificates and CD-R of the event) to all the authors that participated in the in a virtual way. This is the last stage of the development phase and it can last until one month, in dependence of the quantity of participants. This stage can be done in a simultaneous way with the first and second stages of the following phase of this methodology.

The third phase: Evaluation, stimulation and feedback. The guarantee of the successful realization of a scientific event in the universities is having an evaluation system, stimulation and feedback that allows measuring the results, to introduce changes and to take the opportune actions for the next editions. This phase has two essential objectives, in the first place; to evaluate the results of the realization of the event, and to stimulate to the most outstanding in its planning, organization and execution and, in second place; taking into account the analysis of the errors and the difficulties and deficiencies, feedback the process in a way that allows to make the changes, corrections and necessary adjustments for the future events or editions. This phase has two fundamental stages, that is:

-Evaluation and stimulation. Starting from the plans, work systems and established mechanisms to evaluate the execution of the foreseen objectives and indicators to reach in the realization of the event, the achievements and (or) difficulties and deficiencies are determined. Each subcommittee will present a detailed report and critic on the results of its work, with the successes and mistakes and its causes, which will be analyzed and they will take the organizational, managerial and technical measures corresponding with the objective to perfect the work and to eradicate the deficiencies presented in future events or editions.

The results of the management of the event will be evaluated, from the technical point of view, for the Scientific Council of the university and, from the managerial or administrative point of view, for the established Council of Administration. These activities will be carried out in the way in that are conceived in the implementation plans elaborated in the stage five of the phase two. The statistics of the event are elaborated.

-Feedback. Starting from the evaluations carried out in the previous stage, a plan of actions is elaborated to solve the presented problems in a staggered way. This plan will be presented and approved by the Council of Administration, and from that moment it constitutes a work document that will be evaluated monthly in the collegiate organs of administration and corresponding established mechanisms. This way, the end of this process becomes the beginning of the new one.

3.3. Discussion of results

Of the analysis carried out to the information gathered once processed by means of the enunciated statistical methods, it was verified that the six evaluated indicators grew sustainable in the period.

For the validation of the hypothesis of the investigation the statistician *t* was used, so that it was looked for in the chart of the distribution *student t* the value of *t* for 14 degrees of freedom and a significance level ($\alpha = 0,05$) and was it obtained that $t = 2.1448$. Then it was carried out the comparison among this value and those calculated by means of the SPSS 19.0 and it was corroborated that the t_c value > 2.1448 , so one can affirm with a level of trust of 95% that the applied methodology contributed to the systemic management of the scientific events carried out in the university study object.

Also, keeping in mind that the obtained significance level is smaller than 0,05 for the four evaluated years, one can affirm with 95% of trust that significant differences exist among the observed values and

prospective. This confirms that with the application of the methodology it was contributed to the management of the scientific events of the university study object.

It was also proven by means of the coefficient of correlation of Kendall that a strong correlation exists among the evaluated indicators, because coefficients were obtained bigger than 0.85; which demonstrates that there are a high interdependence and interrelation among them, what corroborates the systemic character of the elaborated methodology.

4. CONCLUSIONS

The analyzed theoretical-methodological supports demonstrated the importance of the management of the scientific events in the universities, besides evidencing that there are insufficient methodological tools for their management, and the existent ones present limitations in the theoretical-methodological and practical order, because in the consulted literature it was not found any particular and specific methodology for the management of scientific events in the universities, that's why the contribution to the management of the knowledge and the innovation of these institutions by means of the realization of scientific events has been insufficient in spite of the strengths and potentialities they have.

The methodology proposed for the management of scientific events is sustained in the outlined epistemological foundations, consists of three phases and 11 stages, and it has a systemic, recurrent, flexible character and can be contextualize.

The application of the methodology proposed for the management of the scientific events in the university studied, facilitated to verify its feasibility and convenient use like an effective methodological instrument to perfect the management of this process, and it demonstrates, also, its flexibility and relevancy, because it contributed to improve the indicators of the management of the evaluated scientific events, as well as allowing to elevate the management of this process qualitatively.

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