Multidisciplinar (Montevideo). 2024; 2:22
doi: 10.62486/agmu202422
ISSN: 3046-4064

ORIGINAL

Student scientific work at the Faculty of Medical Sciences on the Isla de la Juventud

El trabajo científico estudiantil en la Facultad de Ciencias Médicas en la Isla de la Juventud

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Cite as: Pérez Pérez BZ, Martínez Pérez E. Student scientific work at the Faculty of Medical Sciences on the Isla de la Juventud. Multidisciplinar (Montevideo). 2024; 2:22. https://doi.org/10.62486/agmu202422

Submitted: 15-02-2024 **Revised:** 15-05-2024 **Accepted:** 14-11-2024 **Published:** 15-11-2024

Editor: Prof. Dr. Javier Gonzalez-Argote

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ABSTRACT

The courses of the Faculty of Medical Sciences of the Island of Youth until the 2022 academic year prepared student scientific works according to standards of presentation, writing and style in accordance with their training, and therefore, the levels of requirements differed in each degree and even in the Faculty, a situation that made it difficult to achieve homogeneity in the presentation of work for events. In accordance with this, the methodological department developed rules for the structure and writing of all types of work in all courses of the faculty in order to achieve similar requirements, which are described below. Therefore, the work presents the methodological procedure for the development of student's scientific work in the Faculty.

Keywords: Student Scientific Work; Methodological Procedure.

RESUMEN

Las carreras de la Facultad de Ciencias Médicas de la Isla de la Juventud hasta el curso 2022 elaboraban los trabajos científicos estudiantiles por normas de presentación, redacción y estilo en correspondencia con su formación, y, por tanto, los niveles de exigencias diferían en cada carrera y hasta en la facultad, situación que dificultaba la homogeneidad en la presentación de los trabajos para los eventos. En correspondencia, el departamento metodológico elaboró normas de estructura y redacción para todos los tipos de trabajo en todas las carreras de la facultad en función de asemejar los requerimientos, los cuales se describen a continuación. Por lo que el trabajo presenta el procedimiento metodológico para el desarrollo del trabajo científico estudiantil en la Facultad.

Palabras clave: Trabajo Científico Estudiantil; Procedimiento Metodológico.

INTRODUCTION

At the planetary level, research is identified as a key element of the desired transformations, where science, technology, and innovation constitute elements of singular relevance. Cuban higher education today is immersed in ratifying its model of scientific, technological and humanist university, characterized by the formation of values and dedicated to the creation, promotion and dissemination of knowledge, to the development of science and technological innovation, and which assumes the responsibility of putting its training at the service of the demands and needs of social development. In this task, the students' research work plays a fundamental role.

Díaz-Canel[1] emphasized: "The university must be for the student the place that allows him to put in tension all his willingness to learn, that substantially raises his responsibility as a manager of knowledge, that reveals the contradictions in society, in the sciences, and teaches him to identify them".

How does the faculty of medical sciences of the Isle of Youth meet this challenge? The answer to this question constitutes the essence of the objective of the work, aimed at socializing the methodological procedure to favor student scientific work in the faculty of medical sciences of the Isle of Youth from a scientific conception.

DEVELOPMENT

Student scientific work

Scientific research is a university pillar that generates new knowledge and contributes to the advancement of society.[2] Student participation in scientific groups within university projects is important for developing academic growth and practical experience.[3]

The students' research work constitutes the organizational form of the teaching work that aims to form skills proper to technical and scientific-research work, through on-the-job education or other tasks that require the use of elements of the methodology of scientific research. It contributes to the development of students' initiative, cognitive independence and creativity. In addition, it fosters the development of skills for the efficient and updated use of information sources, foreign languages, computer methods and techniques, and our country's national system of standardization, metrology and quality control.[4]

Three fundamental types of undergraduate training in Cuba are extracurricular research, course work, and diploma work.[5]

The extracurricular work, the first scientific work faced by the university student, consists of carrying out different research tasks that are not part of the study plan, which can be carried out in all the years of the career and as many as he/she determines. On the other hand, the course work, through the solution of problems or professional tasks, allows the student to deepen, broaden, consolidate and generalize the acquired knowledge; likewise, to apply, with independence and creativity, the techniques and methods acquired in other organizational forms of the educational teaching process and to develop the methods of scientific work. [6]

Likewise, the diploma work, as a result of the research skills achieved, allows him/her to acquire a greater mastery and updating of the scientific and technical methods characteristic of the profession. It is done individually and generally in one of the professional's spheres of action.[7]

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Student scientific groups

For the organization of the student scientific activity, the FEU, together with the training ministries and through the university scientific movement, approved the formation in each university of the student scientific group, which is an advisory group to the direction of the FEU of each center, and is formed by several students of the same academic year or not, with common motivations and research interests, who with the guidance of a tutor are dedicated to the study of a problem and its respective subproblems, a discipline and/or specific branch of science.[8]

In undergraduate education, research work in student scientific groups is congruent with the priorities of the Cuban government and the Central State Administration Agencies, particularly for its contribution to the formation of the scientific potential in the Centers for Higher Education and Technological Innovation. The objective of the Student Scientific Group is to systematically promote the analysis of topics of interest for scientific, technological and teaching development, stimulating the development of the research activity of university students.[9] It fulfills different functions among which stand out, the promotion and encouragement of scientific projects and lines of research development in correspondence with the needs of each center, territory or country, the encouragement of social research and debate on problems of Cuban youth, the community and the university; the organization and direction of internal scientific events with other organizations or institutions, the stimulation of publications and presentation of the results of student research, among others.

Notes for the development of the Student Scientific Groups in the Faculty of Medical Sciences of the Isle of Youth:

- Belonging to a Student Scientific Group is, in the first instance, a stimulus for both the student and the professor. The former recognizes their research work, and the latter is recognition of their scientific depth and maturity.
- It should enhance the quality of students' education, consolidate the revolutionary commitment to transforming society, and use science for the benefit of others.
- The planned research actions must correspond with the requirements of the Professional's Model, the municipal development strategy, the priorities of the science, technology, and innovation strategy of the employer organizations, the most pressing scientific problems of the university (faculty), and the problems that are investigated in the research projects in their different modalities.

To favor student scientific work in the faculty of medical sciences in the Isle of Youth, a methodological procedure was elaborated to carry out research work of high quality through the creation of Student Scientific Groups:

a) To determine, in the meetings of projects and discipline groups of the departments -with the participation of the FEU-, the topics of the Student Scientific Groups, from the bank of problems of the faculty and from the assistance, aligned to the strategy of municipal development, the lines of research of the faculty and the tasks of the projects.

b) To determine, in the meetings of the departments' disciplinary groups -in accordance with the defined topics-, the professors and/or professionals of the assistance areas, who will act as tutors.

c) Determine, in the meetings of the collectives (year, career, brigade), the students with conditions to integrate the Student Scientific Groups.

d) Propose, on the part of the tutors, to the selected students -in a meeting called for this purpose-, the topics to form the Student Scientific Groups.

e) Form the Student Scientific Groups, determining the president, permanent members and advisors.

f) Define the tutors for each student.

g) Elaborate the work plan of the Student Science Group.

h) Characterization of scientific work in the faculty.

In the Faculty of Medical Sciences of the Isle of Youth, four careers with different professional profiles are studied: medicine, nursing, stomatology and health technology, as well as short-cycle programs. Each one, until the 2022 course, established for the scientific work, standards of presentation, writing and style in correspondence with their training, and, therefore, the levels of requirements also differed, a situation that hindered the homogeneity in the presentation of the works for the events.

Rules for the structure and writing of the student's scientific paper

In response to the reality described above, the Methodological Department developed structure and writing standards for all types of work in all the faculty's careers in order to meet the same requirements.

Writing standards and structure for all types of papers

Page layout

- White paper, letter size, font: Time New roman, Verdana or Arial, 12 point.
- Margins: 2,5 cm top and bottom, 3 cm left and 2 cm right.
- Paragraph: leading and trailing 0, and spacing 1,5 cm.

Pagination

From the introduction to the conclusions with Arabic numerals consecutively (1,2...) on the right, at the top of the page.

Paragraphs

- Indent 0,5 between paragraphs in the first line of each paragraph. All with justified alignment. The text should not exceed five lines.
- In the same page, two paragraphs should not begin with the same words.
- Avoid repetition of the same word in the paragraph.
- The last line of the paragraph should not be left with only one word.

Numbers

- From 1 to 10 are written in letters, except for numbers associated with money, indexes, coefficients, among others, which, due to their characteristics, must be expressed in numbers. Examples: numbers included in economic-financial reports, indexes obtained from calculations made or that serve as references to measure, evaluate or make decisions in studies or processes, coefficients or rates (percentage or as a percentage) that are applied to certain values to obtain new results.
- When they appear as part of an interval or a series, with another or others equal to 10 and greater, they will be written with figures.
- From 11 onwards, they are written in figures.
- Time should be expressed using the 24-hour system and dates with the long format (September 1, 2022) and with all the elements, depending on what is being expressed.

Heading titles

Bold, no underlining, justified alignment, no capital letters, no period.

Abbreviations

- Care should be taken in its use.
- To define an abbreviation, the full term must be written the first time it is used and followed by the abbreviation in parentheses.
- Terms that are rarely used should not be abbreviated.
- Units of measurement are abbreviated only when preceded by digits, but not when they are nouns.

Editorial staff

- Each term appearing in the text in another language should be written in italics.
- Avoid anglicisms unless the words have no Spanish equivalents (neologisms).
- Do not overuse gerunds, it detracts from the beauty of the writing.
- Comply with the three basic principles of scientific writing:
    1. Accuracy: use words that communicate exactly what you want to say.
    2. Clarity: vocabulary that allows quick reading and comprehension of the text: simple language; well constructed sentences and each paragraph with ideas in a logical order.
    3. Brevity: means including only the information relevant to the content of the paper and using only the necessary number of words. Unnecessary text affects the clarity of the message.

- Use the International System of Units (SI), or modern metric system, which is the standard for weights and measures in all branches of science, technology and industry. Comply with the rules established by the International System itself for the use of its units.
- Use the same abbreviation for singular and plural (e.g. 1 cm, 15 cm) and do not place a period after abbreviations (except at the end of the sentence).
- For the writing of large numbers, the comma is used as a thousands separator and the dot as a decimal separator. Example 153 458, 932,00.
- A semicolon must be used to separate numbers. Example: 2; 6; 18; 24. *
- Care should be taken in the rounding of figures, and their relation to the precision of the average values. The sample size, the amplitude of variation, the nature of the measured object and the importance of precision determine the optimum accuracy of the rounded figure.
- Writing in the third person.

Tables

- Present information in a way that is sufficient and easy to understand, so that readers do not need to read the text to understand it.
- Use the same font as the rest of the paper: Time New roman, Verdana or Arial 12 point.
- Limit the use of borders or lines in a table to those necessary for clarity.
- The number appears above the title and in bold type. They are listed in the order in which they are mentioned in the document.
- The title appears one line double-spaced below the number and in italics. It should be brief but descriptive.
- Avoid, in the format of the tables, the excess of lines, colors or shading that make reading difficult. All content should be justified or aligned to the left and with paragraph: leading and trailing 0, and spacing 0 cm. Center headings.
- You can include **notes,** below the table, as needed, to describe contents that cannot be understood on their own (e.g., definitions of abbreviations, copyright attribution, explanations of asterisks) among others.

Figures

- All types of visual displays other than tables are considered figures in Vancouver style. Common types of figures include line graphs, bar graphs, charts (e.g., flow charts, pie charts), drawings, maps, graphs (e.g., scatter plots), photographs, infographics, and other illustrations.
- Present information in a way that is sufficient and easy to understand so that readers do not need to read the text to understand it.
- Comply with the following standards: clear images, smooth and sharp lines, legible and simple font, provide clearly labeled units of measurement and axes.
- Elements within the figure: clearly labeled or explained.
- They should be designed with moderation in colors so that they can be interpreted even if they are printed or reproduced in grayscale.
- The number of the figure appears above the title and in bold type, in the order in which they are

mentioned in the document.

- The title appears one line double-spaced below the number and in italics. It should be brief but descriptive.
- Legend: a figure legend, or key, if present, should be placed within the figure borders and explains the symbols used in the figure image. Capitalize the words in the figure legend in the case of the caption. Example:

Structure

Title page, acknowledgements* (optional), dedication* (optional) (only for diploma and course work) *, table of contents or index, summary in Spanish and English* (not included in the extracurricular work or in the course work as final evaluation), introduction, development (by headings - not chapters), conclusions, recommendations* (only for diploma work) *.

Bibliographic references to allude to citations listed in the text by consecutive numbers and related according to their order of appearance

Vancouver style establishes that references should be numbered consecutively following the order in which they are first mentioned in the text, using Arabic numerals in parentheses.

Cover page

First page of the work, must contain the following data (Do not use bold, underline, or put a period at the end).

- Faculty logo (left) In line with the logo: name of the institution of origin of the author(s), faculty and department (without capital letters). Alignment: centered
- Type of work (in sustained capital letters) Centered alignment
- Title of the paper in Spanish and English. Do not write the word title, write it in capital letters and no more than 15 words. Centered alignment.
- Author: full name(s) and surname(s) and race. Justified alignment
- Tutor: teaching category (Full Prof., Assistant, Assistant, Instructor, Researcher), university degree (Lic., Doctors), full name(s) and surname(s), academic category (M.Sc. Esp), scientific degree (Dr. C) Example: Full Prof., Lic. Grdf Drtv, Dr.C
- Name of the city where it takes place and year. Alignment centered
- Summary in English and Spanish
- Not to exceed 250 words.
- Brief exposition of the essential scientific aspects contained in the work. Report in a few words the problem faced, the objective of the work, the methodology used and the results.
- Does not include abbreviations, formulas, acronyms, quotations and illustrations.
- Distinguish these indications: the title of the work in Spanish and English, the total number of pages, the location of at least one bibliography in English.

CONCLUSIONS

Universities provide the development of research, technology, and innovation through student scientific work in the search for solutions that provide answers to the needs and demands of the community and society, and find in student scientific groups the stimulus for the research activity of university students. The methodological procedure elaborated for student scientific work in the faculty of medical sciences in the Isle of Youth shows a greater quality from its implementation.

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FINANCING

None.

CONFLICT OF INTEREST

Authors declare that there is no conflict of interest.

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