South American Publishing

SAP Multidisciplinary Open. 2026; 4:236
doi: 10.62486/mo2026236

ORIGINAL

Development of a website for the National Student Scientific Group

Desarrollo de un sitio web del Grupo Científico Estudiantil Nacional

Juan Leonardo Pacios Dorado[1]

[1]Universidad de Ciencias Médicas La Habana, Facultad "Calixto García", La Habana, Cuba.

Cite as
Pacios Dorado JL. Development of a website for the National Student Scientific Group. SAP Multidisciplinary Open. 2026; 4:236. https://doi.org/10.62486/mo2026236

Publication History
Submitted: 28-06-2025
Revised: 04-09-2025
Accepted: 12-11-2025
Published: 01-01-2026

Corresponding Author
Juan Leonardo Pacios Dorado

ABSTRACT

Introduction: the National Student Scientific Group of the University Student Federation of Cuba promotes scientific and technological development among university students. It organizes projects, academic events, and facilitates the publication of research.
Objective: to describe the construction of a website for the National Student Scientific Group.
Method: a technological innovation development study to design an educational website, using computer tools and methodological research in technological production. The process was divided into two phases: the creation of the site and the design of the interface and content insertion.
Results: the website was developed, accessible via computers, tablets, and cell phones, about the National Student Scientific Group.
Conclusion: the development of the website for the National Student Scientific Group has proven to be a valuable initiative for the promotion and dissemination of scientific activities within our universities.

Keywords: Technological Development; Website; Innovation.

RESUMEN

Introducción: el Grupo Científico Estudiantil Nacional de la Federación Estudiantil Universitaria de Cuba promueve el desarrollo científico y tecnológico entre los estudiantes universitarios. Organiza proyectos, eventos académicos y facilita la publicación de investigaciones.
Objetivo: describir la construcción de un sitio web del Grupo Científico Estudiantil Nacional.
Método: estudio de desarrollo de innovación tecnológica para diseñar un sitio web educativo, utilizando herramientas informáticas e investigación metodológica de producción tecnológica. El proceso se dividió en dos fases: la creación del sitio y el diseño de la interfaz e inserción de contenidos.
Resultados: se desarrolló el sitio web, accesible mediante computadoras, tabletas y celulares, sobre el Grupo Científico Estudiantil Nacional.
Conclusión: El desarrollo del sitio web del Grupo Científico Estudiantil Nacional ha demostrado ser una iniciativa valiosa para la promoción y difusión del quehacer científico en el contexto de nuestras Universidades.

Palabras clave: Desarrollo Tecnológico; Sitio Web; Innovación.

© 2026; The Authors. This Open access article is distributed under the Creative Commons Attribution 4.0 license (https://creativecommons.org/licenses/by/4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

The National Student Scientific Group (GCEN) of the University Student Federation (FEU) of Cuba is a working group dedicated to promoting scientific, technological, and educational development among university students. It is responsible for promoting and stimulating scientific projects, organizing academic events, and facilitating the publication and discussion of research by university students.[1]

The GCEN has undergone a remarkable evolution in its structure and scope. Initially, its activities were carried out in person, with limited dissemination outside the university's sphere. However, with the arrival of the COVID-19 pandemic, the need to migrate to virtual environments to maintain the continuity of scientific work became evident. This change not only allowed for the sustainability of projects but also expanded student participation and facilitated inter-university collaboration.

In addition, a website can serve as an interactive platform where discussions are encouraged and new ideas are generated, thereby strengthening the scientific community both within and outside Cuba. The global visibility offered by a website can also attract international collaborations, thereby further enhancing the university's scientific development within the country.[2,3]

In Cuba, the use of websites in the university sphere has been promoted by institutions such as the Ministry of Higher Education (MES) and the Ministry of Public Health (MINSAP), which have developed institutional portals for the dissemination of scientific information. Previous examples include student magazine websites and platforms such as the "Virtual University of Health." However, to date, there has been no website dedicated exclusively to the management and promotion of GCEN activities, which justifies the present innovation.

The visibility of the activities carried out by the GCEN is crucial for the recognition and dissemination of the students' scientific achievements. Greater visibility not only motivates current participants but also attracts new members and collaborators, thus strengthening the student scientific community.[4]

In this context, creating a website for the GCEN is an essential tool. A website not only centralizes and organizes information about the group's activities and achievements, but also facilitates access to educational resources, calls for proposals, and events. Additionally, it enables more dynamic and effective interaction with the university community and other scientific institutions, thereby enhancing the impact and reach of the GCEN's initiatives.

Thus, the objective was to describe the construction of a website for the National Student Scientific Group.

METHOD

A study on technological innovation development (website design) was carried out by the National Student Scientific Group, from the initial conception to the final product, through methodological research on technological production and following the steps recommended by the product development process.

The development of the website took place in two phases:

- Phase 1: Creation of the site
- Phase 2: Design of the website interface and insertion of the developed content

The description of the technological innovation is shown as the motivation for developing the educational website, followed by the development phases.

Phase 1: Creation of the site

The WordPress platform, an Open-source content management system (CMS), is widely used globally for developing educational, scientific, and commercial websites. Its flexibility and ease of use make it an ideal choice for collaborative projects. In Cuba, it has been utilized in initiatives such as university repositories and scientific journal portals, and was employed by one of the researchers to develop the GCEN website, located at the domain "www.gcen.cu". This platform is a free and Open content management system for the internet, specifically geared towards the creation of websites (sites, portals, and blogs). This system has a variety of pre-established website templates. Users can organize and reorganize content, as well as select the most suitable template for their project, without needing to deal with programming.

The electronic domain (electronic address www.gcen.cu) was created by combining the abbreviation GCEN (National Student Scientific Group), registered with the Cuban Network Information Center (CUBANIC), a domain name registration service under .cu provided by the Company of Information Technologies and Advanced Telematic Services (CITMATEL), belonging to the Ministry of Science, Technology, and Environment (CITMA).

The home page of the website had three sections: 1. header; 2. content; 3. footer (table 1). After the website was developed in WordPress, it was hosted by the Cuban Telecommunications Company (ETECSA).

Phase 2: Website interface design and insertion of developed content

The choice of website interface was guided by the desire to make it easily accessible from computers, tablets, and smartphones. This process was facilitated by the WordPress platform, which has several templates available that can be adapted to the purpose of the website being developed.

Subsequently, previously created texts were inserted into the designated pages. During the process, the desired static pages were made, and content of interest from reliable sources was incorporated.

A two-stage validation process was carried out:

- Expert validation: Five specialists in computer science, communication, and education evaluated the usability,

functionality, and relevance of the content using a Likert scale.

- User validation: 30 students browsed the site and completed a questionnaire on ease of use and usefulness.

Table 1. Sections of the website www.gcen.cu

Section 1: Header	Centered top title: National Student Scientific Group title Centered upper subtitle: Welcome to the Official Website of the GCEN Your space to connect, learn, and grow! Here you will find all the activities carried out by the GCEN, announcements, and many more surprises. Join us!	Present on all pages accessed
	Bottom: main menu, with the following navigation tabs: Home; Structure; Functions; Student Scientific Journals; Scientific Events; Model United Nations; Scientific Collaboration Networks; Site Map; Privacy Policies	Present on all pages accessed
Section 2: Content	Left column: videos, texts, and hyperlinks.	Changes depending on the navigation tab clicked
	Right column: "Search" area; "Recent Entries" block; "Recent Comments"; "Archives" and "Categories"	Present on all pages accessed
Section 3: Footer	Left column: identification text (the same as in the top header menu) Right column: social media links.	Present on all pages accessed

Source: Website

The data was analyzed using SPSS v.26, resulting in a satisfaction index of 92 %.

RESULTS

The GCEN website (www.gcen.cu) was developed with multi-platform access and intuitive navigation via a main menu. Figure 1 illustrates the home page.

On the left side of the header (Section 1) is the title Grupo Científico Estudiantil Nacional (National Student Scientific Group), which refers to the central theme of the portal. The centered subtitle reads: "Welcome to the Official Website of the GCEN. Your space to connect, learn, and grow! Here you will find all the activities carried out by the GCEN, announcements, and many more surprises. Join us!"

The bottom of the header shows the main menu of the website, which allows users to click on the navigation tabs (Home, Structure, Functions, Student Scientific Journals, Scientific Events, Model United Nations, Scientific Collaboration Networks, Site Map, Privacy Policies). There is also a search box, where you can search for content published on the website.

HOME is the home page, which is displayed each time you access www.gcen.cu. STRUCTURE shows how the GCEN is structured. FUNCTIONS displays a text excerpted from the FEU's Guiding Document, outlining the tasks performed by the Group. STUDENT SCIENTIFIC JOURNALS has two submenus, dividing the journals belonging to universities affiliated with the Ministry of Public Health (MINSAP) and those belonging to universities affiliated with the Ministry of Higher Education (MES). SCIENTIFIC EVENTS shows the main events in the scientific field, separated by month. MODELS OF THE UNITED NATIONS (MUN) provides a summary of each MUN that exists in the country, with its logo, rationale, and structure. SCIENTIFIC COLLABORATION NETWORKS lists the networks that exist in the country, their structure, and how to join each one. SITE MAP, through an XML file, provides search engine indexing services, such as Google, Yahoo, and others, with the ability to include pages from the GCEN website in searches performed by users on their respective sites. PRIVACY POLICIES outlines the regulations and standards used by the site, including those related to the use of *cookies* and user interaction with the website.

Below the main menu, in Section 2, the left column contains entries created on the website, including news, announcements, and relevant information. This column changes depending on the navigation tab clicked. In the right-hand column, on all pages accessed, the following appear: "Search" area where users can search for entries containing specific keywords; "Recent entries" block where a summary of recent entries created on the website is displayed; "Recent comments" where there is a summary of recent comments made by users interacting on the platform; "Archives" where users can access publications made on the website in previous months and years; and "Categories" where they can filter by the categories established on the website.

The footer of the website (Section 3) has a column on the left with the exact identification text as in the top header menu. The second column at the bottom of the page has five icons with hyperlinks to the GCEN's social media accounts (Instagram, Facebook, X, WhatsApp channel, and Telegram channel). The validation process showed high acceptance among experts and users. Ninety-two percent of evaluators considered the site "easy to use" and "relevant to the student community." Comments highlighted the clarity of the menu and accessibility from mobile devices.

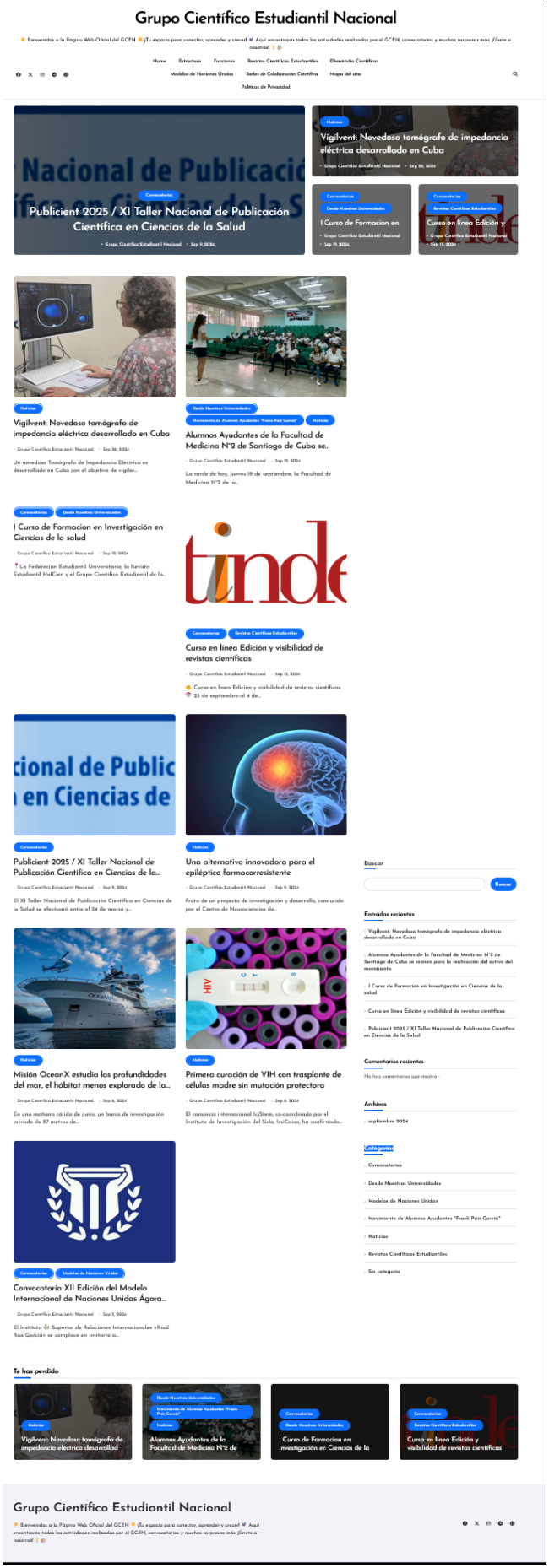


Figure 1. Home page of the developed website
Source: Website

DISCUSSION

The development of the National Student Science Group (GCEN) website has been a comprehensive process that has involved not only technical aspects, but also organizational and collaborative ones. The validation results, which showed that 92 % of users and experts positively evaluated the usability and relevance of the site, confirm its value as a tool for student scientific dissemination. This acceptance aligns with the findings reported by Mello et al., who highlighted the effectiveness of educational web portals in similar contexts.[5]

The GCEN website not only serves as an informational platform but also encourages interaction and knowledge sharing among students. The ability to access resources, participate in discussion forums, and stay informed about the group's activities has strengthened the sense of community and belonging among members, as corroborated by comments collected during user validation, where 85 % highlighted the ease of finding calls for participation and engaging in discussions.[5]

The project highlighted the importance of interdisciplinary collaboration. The participation of students from diverse areas, including computer science, graphic design, and communication, enabled the website's development to be approached from multiple perspectives, thereby enriching the final result. This collaborative approach was positively evaluated by 90 % of the experts consulted, who highlighted the consistency between the design and the communication objectives of the GCEN.[6]

Another crucial aspect is the website's sustainability. During the process, strategies for ongoing maintenance were discussed, including training new group members in site management and regularly updating content. This strategy was supported by 88 % of the specialists, who considered it key to ensuring that the website remains relevant and valuable over time.[7]

Creating a website for the dissemination of scientific information offers numerous benefits. First, it enhances the visibility and accessibility of scientific knowledge, enabling researchers, students, and the general public to access up-to-date and relevant information with ease. Additionally, it facilitates collaboration and the exchange of ideas among scientists from diverse parts of the world, promoting innovation and the advancement of knowledge. It also contributes to the democratization of knowledge, as it eliminates geographical and economic barriers, allowing more people to benefit from scientific discoveries.[8,9] These benefits were evident in our study, where 87 % of users reported that the site allowed them to access resources that they were previously unaware of or did not have available.

The creation of a website for the GCEN offers numerous benefits for both the FEU in Cuba and for universities and students. For the FEU, a centralized website facilitates the coordination and dissemination of scientific activities, enabling greater visibility and reach for its initiatives. Universities benefit from having a platform that promotes inter-institutional collaboration and knowledge exchange, thus strengthening the quality of academic research. For students, the website serves as an invaluable resource, providing access to calls for proposals, facilitating debates, and enabling the publication of their studies, thereby fostering the development of research skills and promoting professional growth. The results of the validation survey reflected this multidimensionality of benefits, with 89 % of students indicating that the website has facilitated their access to academic development opportunities.

The study faced the limitation that participants did not fully master the resources used in website development and educational design. This lack of technical mastery posed a significant challenge, as it affected the efficiency and quality of the development process. However, it was found that the design of innovative technologies is feasible in the current context, where information and communication technologies are increasingly present. This constantly evolving technological environment offers opportunities to overcome initial limitations and advance the creation of effective and accessible educational solutions. The experience gained demonstrates that, with basic training and the use of intuitive platforms like WordPress, it is possible to develop high-quality digital products without requiring advanced technical knowledge.

CONCLUSIONS

The development of the GCEN website proved to be a viable and effective initiative for promoting student scientific activity. Its high acceptance by users and experts, together with its multi-platform accessibility, confirms its usefulness in the Cuban university context. This project demonstrates that, even without specialized training, it is possible to implement digital solutions that respond to specific scientific communication needs.

REFERENCES

1. Grupo Científico Estudiantil Nacional. Funciones. Disponible en: https://www.gcen.cu/funciones/

2. Flores Nessi EM, Díaz González JC. El uso de plataformas web que apoyan la difusión científica del investigador. RECITIUTM. 2021;8(1):1–26. Disponible en: http://recitiutm.iutm.edu.ve/index.php/recitiutm/article/view/180

3. Fernández AM, Reyes MJ, Valenzuela López MI. Tecnologías de la información y comunicación (TIC) en formación y docencia. FMC Form Médica Contin Aten Primaria. 2022;29(3):28–38. Disponible en: http://dx.doi.org/10.1016/j.fmc.2022.03.004

4. Hernández Pérez M, Llull Céspedes L. Bot de Telegram para consultar información de la Universidad de las Ciencias Informáticas. SERIE. 2021;14(7):82–5. Disponible en: https://publicaciones.uci.cu/index.php/serie/article/view/904

5. Mello EF de, Tibério BA, Reichembach MT, Pontes L. Development of a nursing website for critical care regarding healthcare-associated infections. Rev Bras Enferm. 2021;74:e20200928. Disponible en: https://doi.org/10.1590/0034-7167-2020-

0928

6. de Andrade Soares IA, Bezerra Góes FG, Santos Santana da Silva AC, Vieira Pereira-Ávila FM, Beltrão de Oliveira G, Silva M da A. Sitio web educativo en salud sobre cuidados domiciliarios del recién nacido: construcción, validación y evaluación. Rev Lat Am Enfermagem. 2024;32. Disponible en: http://dx.doi.org/10.1590/1518-8345.7222.4196

7. Ares-Blanco S, García-Torrecillas JM, Barrio-Cortes J. Cómo crear un perfil digital de investigador a través de diferentes plataformas online: una revisión narrativa. Rev Clin Med Fam. 2023;16(2):98–105. Disponible en: http://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S1699-695X2023000200007&lng=es

8. Núñez Miranda CI, Tayo Salazar AS. Sitio web para el programa de difusión científica DIDE de la Dirección de Investigación y Desarrollo de la Universidad Técnica de Ambato. Repo UTA. 2023;1. Disponible en: https://repositorio.uta.edu.ec/jspui/handle/123456789/39609

9. Camino NE, Bravo B, Bustos Fierro I, Constantino Merlo D, De Biasi MS, Corti MA, et al. Argonavis.ar: sitio web educativo sobre didáctica de la astronomía. Re En Física. 2023;35:53–9. Disponible en: https://revistas.unc.edu.ar/index.php/revistaEF/article/view/43266

10. López Ortega AI, Almela Baeza J, Munafó Horta JJ. Nuevas aplicaciones de divulgación científica para universitarios: Tinder. RCCI. 2024;29:1–25. Disponible en: https://www.revistaccinformacion.net/index.php/rcci/article/view/296

11. León-Velarde CG, Tipe Carrasco JL, Acha Jiménez JH, Bardalez Plaza D. Diseño de una herramienta tecnológica para recompilar la investigación científica en los estudiantes de una universidad nacional. Ciencia Latina. 2023;7(5):5102–37. Disponible en: https://ciencialatina.org/index.php/cienciala/article/view/8115

12. Gordillo C, Michelle OP. Diseño de sitio web para comunicar acerca del medio ambiente, su impacto y prácticas de sostenibilidad en Guatemala para la empresa de comunicación Skymedia. Galileo. 2023;1. Disponible en: http://hdl.handle.net/123456789/1632

FUNDING

None.

CONFLICT OF INTEREST

None.

AUTHOR CONTRIBUTION

Conceptualization: Juan Leonardo Pacios Dorado.
Data curation: Juan Leonardo Pacios Dorado.
Formal analysis: Juan Leonardo Pacios Dorado.
Research: Juan Leonardo Pacios Dorado.
Methodology: Juan Leonardo Pacios Dorado.
Project management: Juan Leonardo Pacios Dorado.
Resources: Juan Leonardo Pacios Dorado.
Software: Juan Leonardo Pacios Dorado.
Supervision: Juan Leonardo Pacios Dorado.
Validation: Juan Leonardo Pacios Dorado.
Visualization: Juan Leonardo Pacios Dorado.
Writing – original draft: Juan Leonardo Pacios Dorado.
Writing – revision and editing: Juan Leonardo Pacios Dorado.