

SoftGirls: An Institutional Strategy at Pascual Bravo to Promote Female Inclusion in Software Engineering Education

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***Abstract.** SoftGirls is an initiative developed within the Faculty of Engineering at the Pascual Bravo University Institution, aimed at strengthening both technical and soft skills among female students from the academic community. The objective of this article is to present the work carried out by the SoftGirls study group, which focuses on enhancing its members' competencies in computer science, specifically in programming, UX/UI design, and emerging trends in software engineering. The study group has been active since mid-2024 and integrates in-person sessions, visits to software industry companies, talks and training courses delivered by expert professionals, as well as an institutional certification of the acquired competencies issued by the educational institution.*

1. Introduction

Women's participation in STEM is low worldwide, with only 35% in higher education and less than 30% of researchers being women (ONU Mujeres, 2022), and in Colombia, women represent 42% of early-career researchers but only 24% of senior positions (Schmader, 2023). STEM education is essential for innovation, societal development, and sustainable growth (Paucar-Curasma et al., 2023). International and Colombian initiatives support women's training and community building in STEM. The SoftGirls initiative at Pascual Bravo University Institution in Medellín further engages women through weekly technology and programming sessions, promoting skills development and inclusion (Institución Universitaria Pascual Bravo, 2024; Global STEM Women, 2025).

2. Methodology

SoftGirls, launched by the Faculty of Engineering at Pascual Bravo in mid-2024, is organized into three stages. The Planning stage reviews existing communities and strategies to design semester activities and recruit students. During Implementation, weekly sessions include practical classes, industry talks, company visits, and workshops. Finally, the Evaluation stage assesses the semester's activities to measure outcomes and impact on participating students.

3. Results

The SoftGirls initiative at Pascual Bravo has positively impacted students in its Software Development Technology and Software Engineering programs over three semesters, offering courses in HTML, CSS, JavaScript, Laravel, and web UI

development with active student participation. Students visited both national companies and internationally recognized software companies operating in Medellín, and collaboration with the university's Continuing Education department led to the certification of 20 students in UI design and web programming.

Evaluation using a data collection instrument (Kitchenham & Pfleeger, 2008) showed high acceptance of the initiative, relevance of content, and value of industry interactions. Areas for improvement include increasing student participation, providing more learning resources, and expanding the range of programming languages and frameworks covered.



Figure 1. SoftGirls Certification Event

4. Conclusions

During the 2024-2 to 2025-2 academic periods, SoftGirls became a comprehensive learning space combining theory, practice, and industry interactions, culminating in the certification of 20 students. While participants valued the classes, materials, and company visits, opportunities were noted to improve student interaction, expand content, and provide more resources. Overall, the initiative met its objectives and shows strong potential for growth and building a community of women in STEM.

5. References

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