



Examining the Integration of CUA & DEI within CARSE Initiatives

EOWD – Education, Outreach and Workforce Development, DEI – Diversity Equity and Inclusion

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Abstract

One of the objectives of the Center for Advanced Radio Sciences and Engineering (CARSE) is to provide opportunities for undergraduate and graduate students in STEM disciplines so they can further their career and research experiences. Moreover, CARSE includes an outreach component through a collaboration with the Center for University Access (CUA), which seeks to provide opportunities to bridge inequality gaps for underserved youths enrolled in public schools in Mayagüez. This investigation is centered on documenting the overall impact of the integration of social and educational justice and diversity equity and inclusion (DEI) content on CARSE/STEM participants. To achieve this, individual interviews, focus groups, observations and surveys will be administered. This research project seeks to explore how the DEI and outreach components focusing on issues of social and educational justice impact the research and work conducted by CARSE participants. This poster presents the current stage of the project and the plan for data collection and findings.

Problem and Hypothesis

This project has been designed to document CARSE staff and students' approach to STEM training with a social justice perspective. The work conducted at the Center for Advanced Radio Sciences and Engineering (CARSE) focuses on radioelectric spectrum subjects and hence, project participants and leading staff are mainly from STEM focused disciplines. CARSE offers opportunities for research for undergraduate and graduate students, which Caraballo-Cueto, et al. (2022) found to be a key factor for graduation rates at the UPR as a Hispanic Serving Institution. However, the project also includes an outreach component which is a collaboration with the Center for University Access (CUA), a social and educational justice project offering services to school-age youth and first-generation college students in Mayagüez. Besides having CUA as an outreach component CARSE also has a Diversity, Equity and Inclusion component in which project participants explore resources and engage in workshops to further expand their knowledge on issues of social justice.

For this research project there will be observations and documentation of the involvement of participants with the aforementioned CUA & DEI activities. This design will allow for a more nuanced data analysis to explore the impact these activities have on CARSE students and staff, from general discussion on STEM among project participants to specific reflections and actions directly related to social justice and DEI.

Objectives

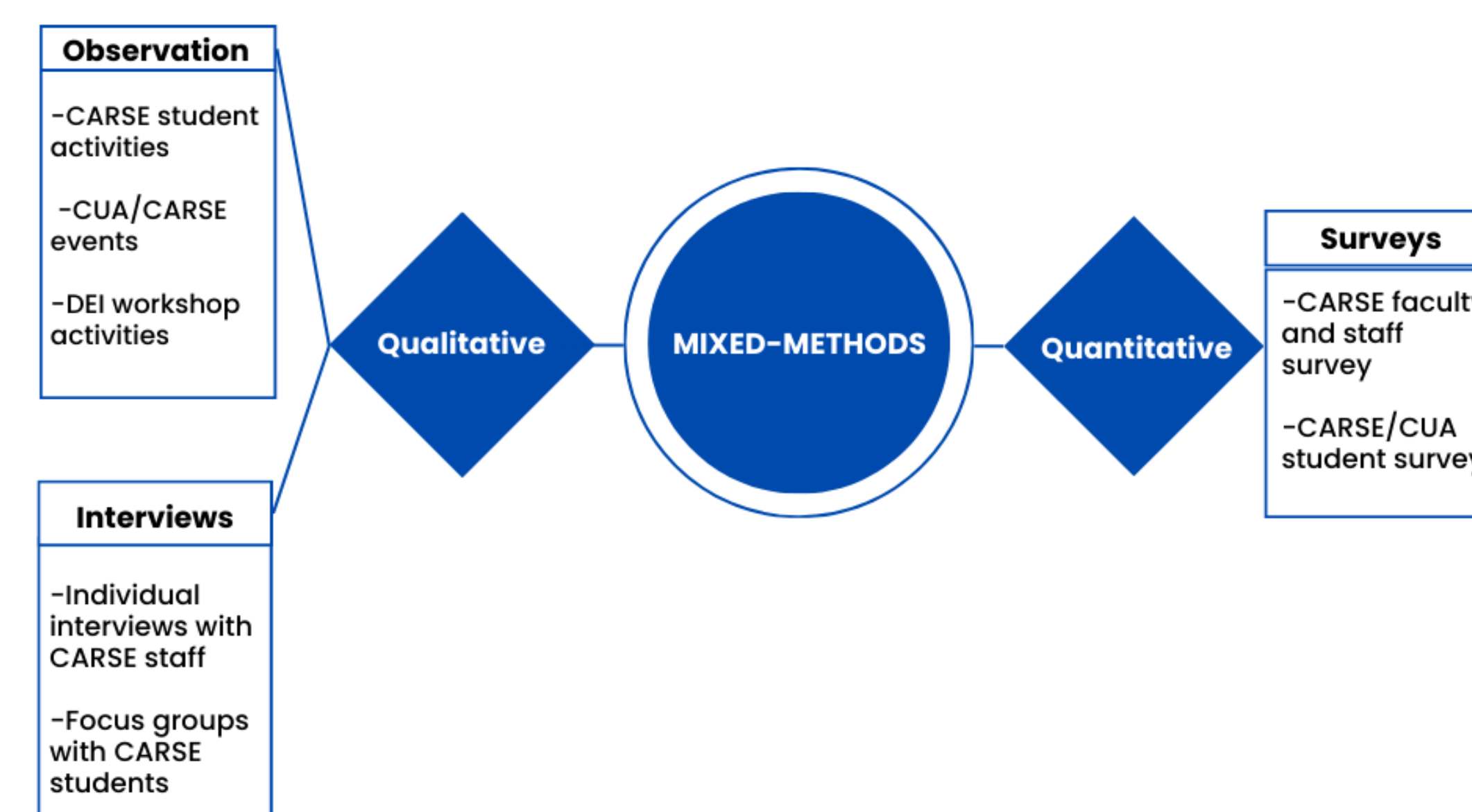
This project seeks to document the overall impact of the integration of social and educational justice content on CARSE/STEM participants.

Methodology

This project has been informed by previous research on STEM & social justice in education. More so, with a particular focus on what Palmer, Maramba & Gasman (2013) noted as the successful characteristics of minority serving institutions for undergraduate and graduate students. Through It will follow a mixed-methods research approach, utilizing the following data collection methods: individual interviews, focus groups, observations and surveys. As further discussed in Research Methods in Education by Cohen, Manion and Morrison, this research method recognizes that there is a wide variety of approaches to social research. Therefore, to be able to understand the phenomena further there needs to be inclusion of multiple methods. Furthermore, mixed-methods strengthens the reliability and validity of this study, which is important to include in an interdisciplinary project that incorporates STEM and social research, as is CARSE.

The observations will be conducted during CARSE meeting and events, including those carried out by students, CUA/STEM events and in DEI workshops. The researcher will be a participant observer during the project since she works as an Outreach Coordinator for the Student Leadership Council, a tutor/mentor at CUA, and a Research Assistant for CARSE. The interviews will be divided into individual interviews with CARSE faculty and staff and focus groups with CARSE's graduate and undergraduate students, respectively. Lastly, the surveys will be divided into two instruments, one for CARSE faculty and staff and one for students.

DATA COLLECTION



Results

The data collected will help document if CARSE participants considers issues of social and educational justice in their research and work in general and if so, what is the reasoning behind these choices. Therefore, the expectation for the project is that undergraduate and graduate students demonstrate an increased awareness of social and educational issues, detecting the disparities faced by marginalized communities and that they make informed decisions in that regard. Overall, the expected results of this investigation will demonstrate the extent in which CARSE participants consider issues of social and educational justice in their research and the reasoning behind their choices. Additionally, the integration of both the CARSE & CUA projects has advanced greatly, which as a result impacted this research.

Conclusions

Taking into consideration CARSE's focus on providing opportunities for undergraduate and graduate students within the field of STEM research, this project will assess the impact that CUA and DEI activities have on their research endeavors. Through a mixed-method research approach to increase reliability and validity, this project aims to assess the impact of these DEI and outreach initiatives on CARSE/STEM participants. The next step to advance in the project is to complete the IRB research application to begin data collection in Fall 2024.



References

- [1] Caraballo-Cueto, J., Godreau, I. Tremblay, R. (2022)
- [2] Cohen, L., Manion L., & Morrison K. (2017)
- [3] Palmer, R. T., Maramba, D. C., & Gasman, M. (eds.). (2013)

Acknowledgements

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