

# Special Session: Amplifying Voices through Animaker Animation: Results from a Longitudinal Study with Latino/a/x Engineering Students

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**Abstract—** This special session explores the application of Chicana Feminist Epistemology methodologies in engineering education research with a focus on Latino/a/x students at Hispanic Serving Institutions. By utilizing *Pláticas* and *Testimonios* as forms of data and data collection approaches in engineering education research, this session aims to foster a more inclusive and empowering research approach while challenging traditional Westernized paradigms. Through the analysis of Animaker videos created from vignettes emerging from these *Pláticas* and *Testimonios*, participants will have a better understanding of the experiences of Latino/a/x engineering students, emphasizing asset-based methodologies and the creation of multimodal artifacts for research purposes. The research approaches presented in this session seek to amplify marginalized voices, promote critical consciousness, and challenge traditional ways of knowing and doing in engineering education research, encouraging attendees to integrate these methodologies into their research and teaching practices effectively to support diverse student populations.

**Keywords** – *pláticas, testimonios, multimodality, Latinos/as/xs*

## I. GOALS OF THE SPECIAL SESSION

This special session aims to explore Chicana Feminist Epistemology methodologies [1, 2] in engineering education research with Latino/a/x students, focusing on the utilization of *Pláticas* and *Testimonios* [3-5] as techniques to foster a more inclusive and empowering research approach. Through the analysis of Animaker videos created from vignettes compiled from a longitudinal study, participants will gain insights into the experiences and trajectories of Latino/a/x engineering students at Hispanic Serving Institutions (HSIs) and emerging HSIs. In addition, attendees will learn more about using Animaker to create videos and use them for research dissemination purposes and as pedagogical tools in the classroom. This session will highlight (1) the impact of asset-based methodologies that draw from Chicana Feminist Epistemology, (2) the use of *Pláticas*

and *Testimonios* to collect data, and (3) the use of Animaker to create multimodal artifacts for research dissemination and pedagogical purpose.

## II. DESCRIPTION AND SELECTED RELEVANT LITERATURE

The session explores *Pláticas* and *Testimonios* within Chicana Feminist Epistemology, highlighting their role in amplifying minoritized voices through multimodal tools [6]. These methodologies build trust between researchers and participants, facilitating the exploration of marginalized experiences like marginalization, vulnerabilities, and lived realities. By centering on these voices, researchers foster authentic storytelling and co-construct knowledge rooted in diverse backgrounds, enhancing inclusivity in research and pedagogy [7]. Multimodal approaches, including symbols, visual aids, writing, and simulations, effectively communicate sociopolitical complexities to diverse audiences, promoting inclusive research practices. The use of Animaker videos exemplifies these methodologies' practical application, illustrating their transformative potential in challenging dominant discourses and prioritizing marginalized perspectives in research settings [6]. This integration supports decolonial practices, affirming the voices and agency of marginalized communities within academia.

## III. LITERATURE REVIEW

This literature review explores the theoretical foundations of *Pláticas* and *Testimonios*, particularly within the context of Chicana Feminist Epistemology, and their significance in amplifying the voices of minoritized populations through multimodal tools. This literature review also describes previous work that has been done on multimodality, particularly

focusing on its transformative potential in engineering education research.

#### A. *Pláticas and Testimonios*

*Pláticas* and *Testimonios*, grounded in Chicana Feminist Epistemology, empower historically marginalized communities by prioritizing personal narratives over traditional epistemologies [8]. These methodologies create spaces for authentic storytelling, exploring sensitive topics like marginalization and vulnerabilities, fostering mutual trust between researchers and participants [6,9].

*Pláticas* are informal conversations or dialogue that is a crucial method in educational research, particularly within critical and culturally responsive frameworks [4]. These conversational exchanges cover a variety of interactions, such as check-ins, catch-ups, reprimands (*regañadas*), advice (*consejos*), storytelling, gossip (*chisme*), sayings (*dichos*), and narratives (*cuentos*) [4,9]. Deeply rooted in Latino/a/x and Indigenous cultural traditions, *pláticas* embody a relational approach marked by warmth, empathy, and community-building [4]. In the realm of educational research, *pláticas* are employed to gather qualitative data and insights from participants, offering a challenge to Eurocentric methods of knowledge and practice. By embracing informal and culturally responsive styles of communication, *pláticas* present an alternative to conventional academic discourse, which can often marginalize or exclude diverse perspectives and voices [4]. *Pláticas* create a space for participants to express their lived experiences, viewpoints, and challenges in educational settings. This enables the researcher to uncover nuanced understandings of complex issues within their sociopolitical and historical contexts, further unveiling the ways in which individuals encounter challenges in engineering spaces.

*Testimonio* originates from a literary form used in Latin America [3,5], emerging from social movements and struggles in the region. Latin American social movements produced literature in the form of testimonial narratives emerging from often challenging sociopolitical situations and thus breaking away from the “grand narrative” of the West. As a postmodern perspective, *testimonio* examines subaltern cultures to understand how agency develops in a postcolonial context in Latin America [5]. *Testimonios* are not meant to represent an entire group of people but rather to highlight how individuals are marginalized, repressed, and exploited [5], aiming not just to interpret the world but also to change it.

*Pláticas* and *Testimonios* amplify minoritized voices by providing platforms for authentic storytelling [16, 17]. These methodologies empower marginalized individuals to reclaim their narratives and challenge dominant discourses in academic settings [17]. *Testimonios* enable critical reflection on experiences of marginalization, oppression, and resistance, fostering broader social change [18,19]. Centering these voices challenges power structures and promotes inclusivity in academia [16, 19, 20].

By integrating *Pláticas* and *Testimonios*, researchers co-construct knowledge through inclusive dialogue, enriching research landscapes with diverse forms of knowledge production and representation [10,11]. Chicana Feminist Epistemology challenges conventional research paradigms, advocating for inclusivity and cultural intuition in academia [12-14], which are particularly significant in research with minoritized populations. These methodologies support intersectional approaches to understanding the sociopolitical realities of marginalized individuals, promoting social justice and transformative dialogues across research, practice, and policy [15], especially for engineering education research.

#### B. *Multimodality in Research and Pedagogy*

Multimodality, encompassing symbols, equations, visual aids, writing, and simulations, plays a crucial role in conveying sociopolitical complexities affecting marginalized populations [21]. Integrating multimodal literacies enables researchers to articulate diverse realities and systemic issues that single modes of representation may overlook [22, 23]. For instance, multimodal approaches in education, like video production in teacher training, enhance critical digital literacy and offer varied modes of meaning-making [23]. Multimodal ethnography provides insights into young children's communication in sociocultural contexts [24] while digital game-based learning supports literacy among marginalized groups like children of migrant workers [25].

Critical multimodal literacy research promotes equitable classroom practices and enriches learning experiences through systemic functional linguistics [26, 27]. Innovations in arts and literacy education highlight multimodal strategies' transformative potential [28] addressing health disparities by catering to diverse community needs [29].

The integration of *Pláticas*, *Testimonios*, and multimodal tools revolutionizes research dissemination by effectively communicating sociopolitical complexities [21-23]. Animator videos exemplify the potential for this approach, transforming qualitative data into dynamic narratives that enhance accessibility and engagement [30]. Visual storytelling through Animator bridges academic insights with public understanding, making intricate concepts more accessible and emotionally resonant [31]. Therefore, the use of multimodalities facilitate understanding and communicating research while demonstrating the complexity of engineering experiences through *Pláticas and Testimonios*.

### IV. RATIONALE AND NOVELTY

This session introduces a novel approach by challenging conventional Westernized research paradigms in engineering education research. By foregrounding Chicana Feminist Epistemology and associated methodologies, it offers a transformative lens that not only acknowledges but also celebrates the strengths and contributions of underrepresented groups in engineering. This session advocates for the decolonization of research methodologies in engineering education while promoting a multimodal literacy approach that

extends Paulo Freire's concept of emancipatory literacy. Through this approach, stakeholders in engineering—researchers, students, administrators, and the broader public—can cultivate critical consciousness and deepen their understanding of the sociopolitical realities faced by minoritized populations. Thus, the session aims to enhance research comprehension and communication while illuminating the multifaceted experiences within engineering.

## V. AGENDA AND WHAT TO EXPECT DURING SESSION

The agenda for this special session is designed to provide a comprehensive understanding of Chicana Feminist Epistemology within engineering education research and to explore the application of *pláticas* and *testimonios* using multimedia tools like Animaker to create multimodal artifacts for research purposes.

The session will begin with an introduction to Chicana Feminist Epistemology, highlighting its relevance and application in engineering education research (10 minutes). This segment will provide a brief historical overview, define key concepts, and discuss how this epistemological framework challenges traditional narratives in engineering education. Attendees will gain an understanding of how Chicana Feminist Epistemology centers marginalized voices and promotes inclusive research practices.

Following the introduction, the session will delve into the theoretical foundations and principles of *pláticas* and *testimonios* (15 minutes). This segment will explain the cultural significance of these methods, their roots in Latino/a/x and Indigenous traditions, and their role in qualitative research. Participants will learn about the unique aspects of *pláticas* and *testimonios*, such as their informal, relational nature and their ability to capture rich, contextualized experiences. Examples of how these methods have been used in previous research will be presented to illustrate their practical application.

Next, attendees will watch and analyze Animaker videos created from vignettes of Latino/a/x engineering students' *pláticas* and *testimonios* (20 minutes). These videos will portray real-life scenarios and challenges faced by these students, providing a visual and narrative representation (i.e., multimodal) of their experiences. The analysis will focus on identifying key themes and insights that emerge from the vignettes, discussing how they reflect broader issues within engineering education. Participants will be encouraged to consider how multimedia tools like Animaker can enhance the storytelling and dissemination of research findings through multimodal artifacts.

An interactive discussion and reflection session will follow the video analysis (10 minutes). Participants will engage in a guided conversation about the potential of incorporating *pláticas* and *testimonios* through Animaker in their own research and educational practices. This segment will foster a collaborative environment where attendees can share their thoughts, experiences, and ideas on how to effectively use these methods and tools to enrich their work.

The session also includes a Think-Pair-Share activity focused on the incorporation of multimodal approaches in research dissemination and pedagogy (15 minutes). Participants will first individually reflect on how they can integrate various modes of communication (e.g., visual, auditory, textual) into their work. They will then pair up to discuss their ideas and finally share their insights with the larger group. This activity aims to stimulate creative thinking and provide practical strategies for implementing multimodal methods in both research and teaching.

The session will conclude with a Q&A segment, allowing participants to ask questions and seek further clarification on the topics discussed (10 minutes). The facilitator will provide closing remarks, summarizing the key takeaways from the session and encouraging attendees to apply the concepts and methods learned in their own contexts. This final segment will ensure that participants leave with a clear understanding of how to incorporate Chicana Feminist Epistemology, *pláticas*, and *testimonios* into their work, as well as the potential benefits of using tools like Animaker for research and education.

## VI. EXPECTED OUTCOMES

This highly interactive session is designed for researchers, educators, and practitioners in engineering education who seek to explore innovative methodologies rooted in Chicana Feminist Epistemology. Participants will gain practical insights into using Animaker to amplify research participant voices and incorporating *pláticas* and *testimonios* to center marginalized student experiences in engineering education. The session aims to deepen understanding of Chicana Feminist Epistemology and its application in educational research, empowering attendees to adopt inclusive research practices. By discussing multimodal literacy's integration, participants will develop strategies for enhancing research dissemination and pedagogical effectiveness, fostering a more equitable academic environment that values diverse forms of knowledge and representation.

## VII. ABOUT THE FACILITATOR

### A. Authors and Affiliations

Dr. Joel Alejandro (Alex) Mejia is an Associate Professor with joint appointment in the Department of Biomedical Engineering and Chemical Engineering and the Department of Bicultural-Bilingual Studies at The University of Texas at San Antonio. Dr. Mejia has 9+ years of experience teaching engineering courses on user-entered design and social justice in engineering contexts. His research focuses on analyzing and describing the assets, tensions, contradictions, and cultural collisions many Latino/a/x students experience in engineering through *testimonios*. He received a CAREER award in 2020 to explore the career pathways of Latino/a/x engineering students. Dr. Mejia received his BS and MS in Metallurgical and Materials Engineering and his PhD in Engineering Education.

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