Annual Report Brief

2019-2020

Transforming Undergraduate Education in STEM Through Culturally Relevant Pedagogy and Community Engagement

## NSF IUSE HSI Project
UTRGV

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by

BURD'S eye view
RESEARCH & EVALUATION

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Overview

In Fall 2018, the University of Texas Rio Grande Valley (UTRGV) launched the *Building Capacity: Transforming Undergraduate Education in STEM Through Culturally Relevant Pedagogy and Community Engagement* project with funding from the National Science Foundation (NSF) through the Improving Undergraduate STEM Education (IUSE) Hispanic Serving Institutions (HSI) Program. The five year project aims to improve student learning, retention, and graduation rates in the College of Sciences (COS) and to increase the number of STEM majors. Among the strategies to achieve these goals is faculty training in culturally relevant pedagogy that is bicultural, bilingual, and biliterate.

Figure 1 presents the Theory of Change (ToC) and the logic linking the project's strategies and expected results that stakeholders originally held. This report brief focuses on two of the three strategies represented in the Theory of Change, primarily the training of faculty in culturally-relevant pedagogy and the delivery of culturally responsive curriculum and instruction as well.

Figure 1. Theory of Change
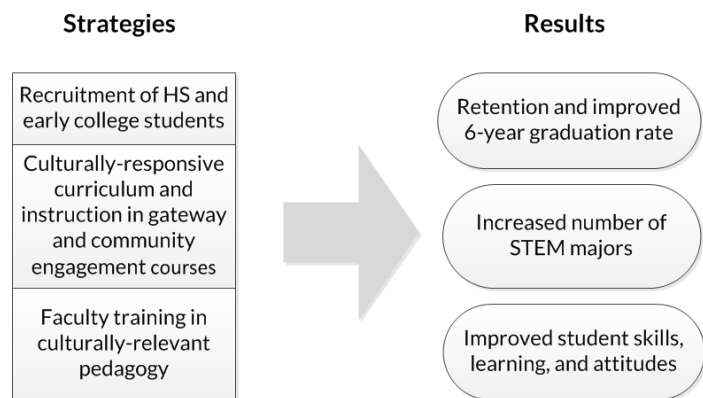
With the support of University leaders, the project team piloted faculty workshops in Spring 2018 and honed the structure in Spring 2019. In response to evaluation findings in the first year, the project decided to redesign the faculty training by adding a weekend long retreat and immersing faculty members in the culture, history, and language of UTRGV students. On the "bus tour" piloted in October 2019, faculty members visited sites in the region to delve into historical events, to examine local economic and social structures, and to understand the lived experiences of students and their families. (For an in-depth evaluation of the retreat, see Burd (2019).)

This annual report brief builds on the findings and insights of the interim report and examines the online conversations from three of the four faculty workshops implemented in Spring 2020. The first faculty workshop occurred in February 2020 before the pandemic and instruction moved online in March 2020. The project team and faculty participants of the second cohort decided to continue meeting via Zoom in the context of stay at home orders. On the basis of the

findings, this report brief provides evaluative judgments about performance and explores implications to help the project team consider next steps.

Evaluation

This evaluation addresses the following questions.

1. What is the quality of design and implementation of the project?
2. What is the value of the project to students, faculty, UTRGV administrators, and community?

Methodology

The methodology of the evaluation includes a set of criteria that stakeholders developed for this project that the evaluator uses to make judgments about the performance of the project processes and outcomes (Davidson, 2005). Previous evaluation reports provide detailed information about the development of the evaluation rubric (Burd, 2019). In this methodology, the evaluator draws conclusions from data sources, summarizes findings, compares them to the criteria, and rates them on a scale from "poor" to "excellent" (Oakden, 2011).

Data

This report brief consists of several data sources: Transcripts of the three faculty workshops conducted on Zoom in March, April, and May 2020; notes from the chat box on zoom for the three workshops; agendas for the workshops; and attendance records for faculty training events during the 2019-2020 academic year. Project staff transcribed the dialogue of the audio-recorded workshops. The evaluator coded and analyzed the transcripts thematically (Strauss & Corbin, 1990). Findings from the interim report of the faculty retreat in October (Burd, 2019) guided the analysis.

Context of Project

UTRGV is located in the lower Rio Grande Valley where about 90% of the people are Hispanic and unemployment and poverty rates are high. The four-and six-year graduation rates are around 20% and 40% respectively (see grant proposal). It is a border community where international culture, language, and commercial exchange are a way of life.

In addition, no one can take lightly the changes and uncertainty that the coronavirus wrought in the world in the 2020. In March, colleges in the U.S. shut down their campuses and, like many, the UTRGV administration decided to deliver classes online. Some UTRGV students do not have reliable Wi-Fi connections at home, and thus, this decision and stay-at-home orders could prevent them from accessing their classes and completing the spring semester.

Findings

What is the quality of design and implementation of the project?

Faculty training for the 2019-2020 academic year included six events presented in Table 1. The first was the weekend retreat in October, which the project followed up with a winter gathering where participants met as a community to eat and share their current thoughts regarding culturally relevant pedagogy and their students. The training continued with four half-day workshops that the project called Community Learning Exchanges. Three of the four workshops were online and constituted the main data sources for this brief. As seen in Table 1, the workshops held after courses went online due to the pandemic in March were well attended: Either 11 or 13 of the 14 faculty participated in each.

Table 1. Faculty Training Events

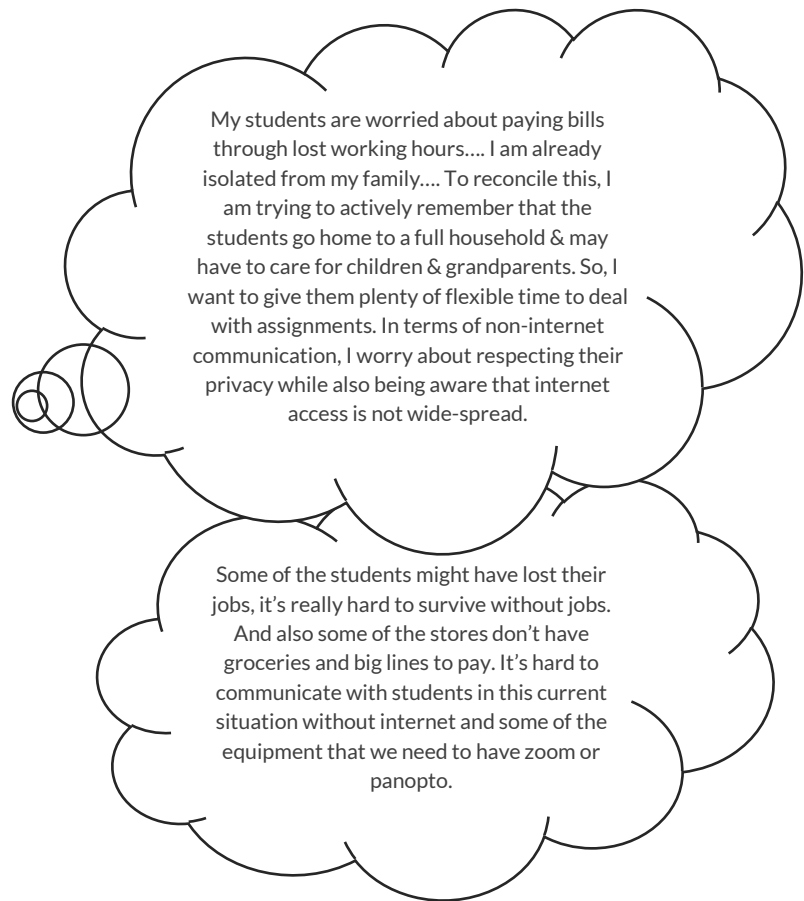| Event	Retreat	Winter Gathering	Community Learning Exchange			
			#1	#2	#3	#4
Date	10/23/2020	12/19/2019	2/21/2020	3/20/2020	4/10/2020	5/1/2020
No. of participants	14	6	10	11	13	11

Source. Project Attendance Documentation, 2019-2020

Workshop Design

The interim evaluation report on the faculty retreat in October 2019 laid out three components of the project design for faculty training. These components were:

Reflective practice, where facilitators welcomed faculty members to reflect on, make sense of, and locate themselves and their students in stories, artifacts, and places;

Active, situated learning, where faculty members explored natural and historical sites, and engaged in dialogue with community members at the Colonias Proyecto Juan Diego; and

"In-your-face assets-thinking" to counter negative experiences and deficit thinking about UTRGV students, the community, and the history of the region and its peoples.

With the first workshop held online in the context of the pandemic, the project team continued the reflective practice. The meeting launched with the question to reflect on the current environment with the pandemic looming large, how it affects students culturally, how it affects faculty members themselves, and how do they reconcile the two factors. The faculty members took several minutes to post their responses in the chat box. They pointed to immediate economic hardships for students, their living in three-generational households, and limited internet access. The comments in the thought bubbles typified their responses.

> My students are worried about paying bills through lost working hours…. I am already isolated from my family…. To reconcile this, I am trying to actively remember that the students go home to a full household & may have to care for children & grandparents. So, I want to give them plenty of flexible time to deal with assignments. In terms of non-internet communication, I worry about respecting their privacy while also being aware that internet access is not wide-spread.

> Some of the students might have lost their jobs, it's really hard to survive without jobs. And also some of the stores don't have groceries and big lines to pay. It's hard to communicate with students in this current situation without internet and some of the equipment that we need to have zoom or panopto.
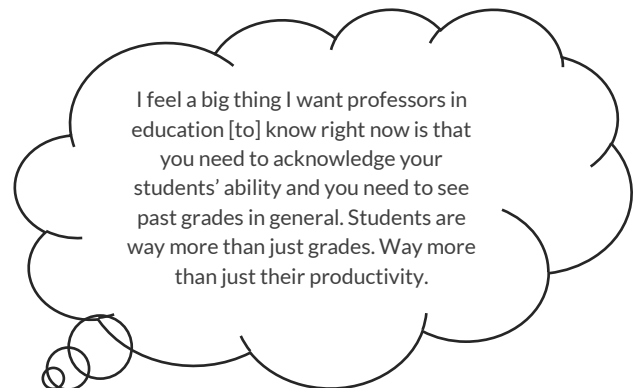
The project team adapted in the context of the Covid-19 and continued active, situated learning. While face-to-face interaction prohibited visits to community sites, community members joined the workshop online. In the second workshop, they invited several women from Proyecto Juan Diego to talk about educational model of Promotoras, the needs of students and their families, and how faculty can be responsive to their realities. In the third workshop in April, community partners from ARISE/ La Union Del Pueblo Entero (LUPE) joined the zoom call to discuss lessons learned working with faculty from the previous cohort in the pilot who were implementing Community Engaged Scholarship And Learning courses (CESL).

In the second workshop, one activity built on faculty experiences during the weekend retreat in October 2019. Proyecto JD was the highest ranked site out of 10 sites in its importance to their learning about the language, culture, and history of immigrants the people who live in RGV (Burd, 2019). Topics that came up in the online discussion included language barriers; the preference assembled family for students to pursue jobs, rather than higher education; financial constraints of documented students; struggles with transportation and so on.

Most germane to the moment was the discussion about connectivity. As discussed in the October retreat, some students worked around the lack of internet in their homes by visiting McDonald's to use the Wi-Fi and do their schoolwork. The community members explained that students who live in Brownsville near the border with Mexico had issues with connectivity because of the crossover between US and Mexican signals. Here faculty members got engaged in the conversation by problem-solving in the context of online instruction and social distancing. Some faculty members pointed to hotspots of the UTRGV parking lot, free connections from Spectrum.

One faculty member expressed that a poll in one of his/her large classed indicated that 1% to 2% of the students did not have an internet connection or a computer, implying that the number was small. The community member shot back with, "1% is 1% and we need to pay attention to those needs." The facilitator Francisco pointed to the disconnect between the University's decision to go online and the fact that the decision disenfranchises a whole group of students.

An example of the in-your-face assets thinking to counter negative ideas about UTRGV students emerged in the activity with students at the second workshop. In this workshop, three students attended each to respond to the questions of what they would want professors to know about them on their first day of college and how professors can be responsive to them and their life's realities.

> I feel a big thing I want professors in education [to] know right now is that you need to acknowledge your students' ability and you need to see past grades in general. Students are way more than just grades. Way more than just their productivity.

One former student described living on his own, supporting himself, and a counselor saying "that I shouldn't be working anymore, because I was slacking in my classes, but that really wasn't an option for me." The thought bubble illustrates his assertion of assets thinking. Moreover, he lacked family support: "My family oftentimes said, 'You don't need college. You don't have to go to college. You can keep working on what you're working on now…. '" In his own words, the student faced deficit thinking and pulls against his intention to earn a degree. Nevertheless, this UTRGV graduate was at the time fully employed pursuing a career for which the degree prepared him; this achievement and his determination to get there demonstrated definitive assets.

Workshop Implementation

The interim evaluation report on the faculty retreat in October 2019 noted four different modalities implementation of the project for faculty training. These modalities were:

Providing safe context, fellowship, characterized by "open dialogue without fear of condemnation," telling personal stories openly and honestly;

Modeling and making explicit the pedagogy, where facilitators used strategies, such as circles, and explained that they create "egalitarian, not hierarchical" spaces for instructors and students;

Disempowering "otherness," by disarming bias, finding out people's stories and drawing connections to their own, rather than emphasizing differences; and
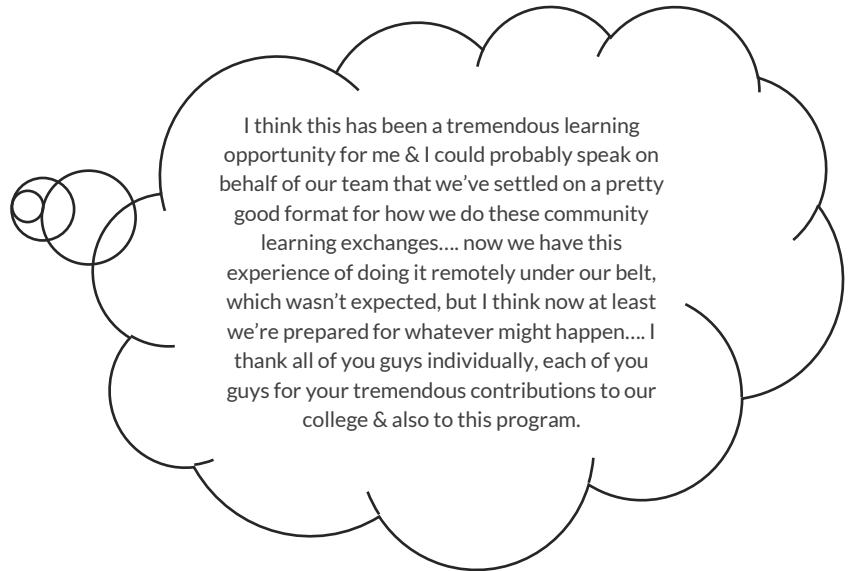
Laying bare deficit thinking, by countering judgments with facts and realities of life.

One example from the fourth workshop demonstrates all four modalities of this implementation. A guest facilitator guided a conversation about how faculty members could lay the foundation for their courses by putting their teaching values into their syllabi. The project team modeled a learner-centered strategy by implementing breakout rooms in Zoom. This strategy allowed faculty members to participate in the conversation and then ponder together the implications for their teaching and students when one shared a poignant story with the larger group.
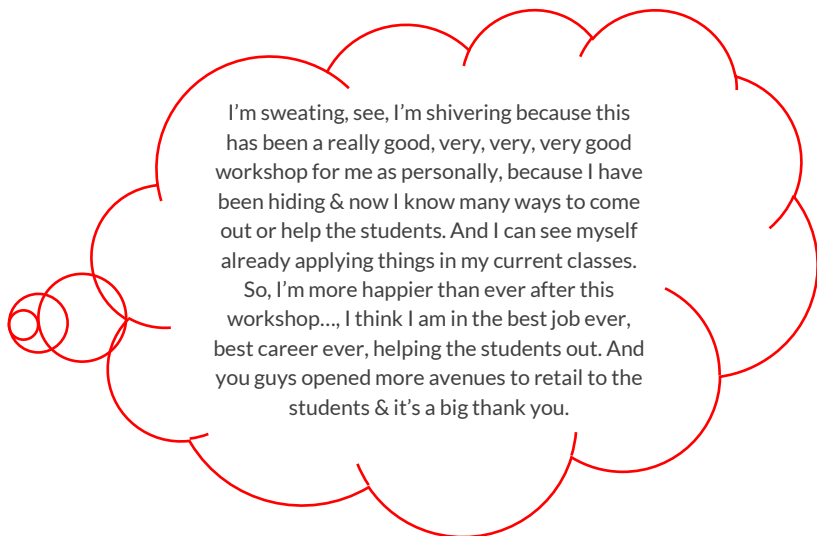
The story the faculty member told paralleled the experiences of some students in the Valley under the current conditions of the pandemic. The faculty member grew up in a developing country and his family had limited resources. After one natural calamity, a hurricane, everything shut down, including schooling for a year, and children lost ground in their learning, similar to these times. The facilitator pointed out that story disarms differences and could be a tool to make connections between instructor and students . The way the workshop was laid out, the faculty member felt safe, and honestly shared the story, that he had not told before. This faculty member's parents encouraged he and his brothers to stick to their plans and goals. The story demonstrated that the fact of a natural disaster or limited family resources did not make the person: by focusing on assets, he has persisted.

What is the value of the project to students, faculty, UTRGV administrators, and community?

This report briefs addresses only the value of the project to faculty members in my the concentration on their training. The PI expressed the value of the six part faculty training in wrapping up the fourth workshop. Personally, it was a learning opportunity, and the team solidified a format, even interrupted by the pandemic , expressed in the thought bubble.

> I think this has been a tremendous learning opportunity for me & I could probably speak on behalf of our team that we've settled on a pretty good format for how we do these community learning exchanges…. now we have this experience of doing it remotely under our belt, which wasn't expected, but I think now at least we're prepared for whatever might happen…. I thank all of you guys individually, each of you guys for your tremendous contributions to our college & also to this program.

Just before the Zoom call of the fourth workshop ended, one faculty member communicated an emotional appreciation that detailed the personal transformation in relating to UTRGV students. She had already observed changes in her teaching. The red thought bubble presents this faculty member's remarks.

> I'm sweating, see, I'm shivering because this has been a really good, very, very, very good workshop for me as personally, because I have been hiding & now I know many ways to come out or help the students. And I can see myself already applying things in my current classes. So, I'm more happier than ever after this workshop…, I think I am in the best job ever, best career ever, helping the students out. And you guys opened more avenues to retail to the students & it's a big thank you.

The final notes in the chat also freely expressed what participants valued about the workshops. Table 2 presents the comments made. In addition to several general appreciations, faculty members were grateful for the learning opportunities, the organization and job well done, as well as the community building. Two faculty members expressed sadness at the ending.

Table 2: Comments in Chat Notes for Fourth Workshop

Thank You Alyssa
Thanks for good information.
I am sad that this is going to be the last workshop :(
I will miss you all :(
Great work Cris for arrangement of workshops.

I am glad I got to know my same sided peers and colleagues
Thank you Alex for your support.
Thank you NSF Team for the great learning opportunity
Thank you NSF Team for outstanding job!
Thank you everyone!

Source. Zoom Chat Notes, May 2020

Key Findings and Implications

In October 2018, key stakeholders assembled and determined that the faculty workshops in culturally-relevant pedagogy would meet the following criteria. Faculty would:

> attend workshops;
>
> engage in respectful, open-minded dialogue; get exposed to students' language, culture, life history as immigrants; look into their own implicit biases and explore student language and "cultural capital" as assets, not deficiencies; confront racism and micro-aggressions (e.g., through diversity training); and
>
> explore new ways of teaching and learning; experience challenges to the way they traditionally teach students (e.g., discuss why language is important).

As the evidence demonstrates, the project continuedd to perform at the very good to excellent levels in all of these areas. The addition of the retreat laid the groundwork for reflection and making connections to UTRGV students, their culture, language, and history as immigrants.

The design of this project to change STEM instruction and learning at UTRGV involves several change strategies (Borrego & Henderson, 2014; Henderson, Finkelstein, & Beach, 2010). First, the project invites and teaches individual faculty members to figure out what works in their classroom as far as implementing culturally relevant pedagogy. It also builds a faculty learning community whereby a group of instructors "support and sustain one another's interest, learning, and reflection on the teachings." The expectation is that through their own personal exploration and in collaboration with peers, they will make changes to their instruction. Finally, the project develops a learning organization. With the support and vision of administrators and the project team, formal and informal communities of practice should develop and share knowledge organizationwide about their teaching with respect to culturally relevant pedagogy for the betterment of the students.

Clearly, the project has established a design and methods of implementation for successful faculty learning. The question is how will we know that that faculty training has had an impact on curriculum and instruction in gateway courses and in CESL courses. The results in the Theory of Change in Figure 1 focus on students. The vehicle for having an impact on students is what goes on in classrooms. The degree to which these faculty members change their curriculum and instruction is the degree to which it will be culturally responsive. Already, some of the faculty participants in the training described specific changes they have observed in their own relationships with their students or specific activities that have implemented in the classroom. To truly know what the instruction looks like, one needs to look at the classroom. Through K-12

initiatives as well as instructional changes in Higher Ed, we know that what we say is not necessarily what we do (Ebert-May, Derting, Hodder, Momsen, Long, & Jardeleza, 2011). Adding another strategy to the project design such as an adaptation of a tool like the Classroom Observation Protocol for Undergraduate STEM (COPUS) might be a way to learn about classroom implementation. By using COPUS Analyzer[1], STEM faculty members could study their own instruction or collaborate with peers to assess one another's implementation of culturally responsive pedagogy. We need to know that changes in instruction are occurring to know whether or not we can expect changes in the students' skills, knowledge, attitudes, and behaviors.

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[1] http://www.copusprofiles.org/

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