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Engaging Higher Education Students in Creating Curricular Content to Increase Equity

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Abstract

This study aimed to explore replicable strategies and principles for reimagining higher education students as co-creators of course content through small-scale curricular experiments. The research took place at a broad-access, minority, and Hispanic-serving university that seeks to disrupt patterns of inequity in higher education. In the 2021–22 academic year, Scholarship of Teaching and Learning (SoTL) faculty fellowships were launched to support a university-wide research agenda on equity-promoting teaching practices. Selected fellows formed a team of three, supported by research and faculty cofacilitators. They began by developing a shared definition of equity, focusing on student identity and voice. The research questions for this study focus on the impact of increased student input into course content on student engagement, students' experiences, and faculty members' experiences. Across all instances of small-scale curricular experiments designed to promote co-creation of curriculum, the majority of students reported positive impacts on engagement and experiences in the course. In describing implementation of their strategies, all three researchers found a process of moving from initial challenges in the unfamiliarity of co-creation to greater engagement for themselves and their students.

Keywords: Scholarship of Teaching and Learning, curricular co-creation, equity in higher education classrooms

Research Context and Questions

Using small-scale curricular experiments, this study seeks to learn about replicable strategies and principles for reimagining higher education students as co-creators of course content. The research site is a broad-access, minority, Hispanic-serving university that aims to disrupt patterns of

inequity in higher education. Toward that end, the university has established an undergraduate college designed specifically to increase the success of students who have traditionally been underserved in higher education. At the doctoral level, programs designed to support working adults have helped build highly diverse cohorts of graduates, with almost half, 48%, of 2022 awarded doctorates going to first-generation scholars.

To continually examine and build equitable teaching and learning practices, the university embedded support for Scholarship of Teaching and Learning (SoTL) fellowships into its strategic plan, with SoTL defined as *the systematic inquiry of our teaching and learning practices. This collaborative process includes intentional design, diverse methodologies, and public dissemination of the findings to contribute to the higher education community's understanding of pedagogical practices.* In the 2021–22 academic year, the university launched faculty SoTL fellowships with the goal of supporting faculty in building a university-wide research agenda on teaching practices that promote equity. For one fellowship track, faculty members applied individually, and the selected fellows came together in a team of three to develop and execute an SoTL study over one academic year. The team, supported by the university's research director and a faculty member deeply experienced in practitioner research as co-facilitators, began the work by building a shared definition of equity for students in their classrooms. The structured conversations initially focused on the members' experiences and views, including their vision of equity and their observations on inequity in their classrooms. Subsequent conversations drew on the Illinois state standards for Culturally Responsive Teaching and Leading (CRTL) as this university is in Illinois. Though these standards were developed for K–12 settings, the research site has been examining their relevance for higher education. For the SoTL team, a shared vision of equity came to rest on the concepts of student identity and voice, with equitable classrooms being those in which students could bring and express their full identity and experiences. To enact that vision, the team drew on the CRTL Standard D, which states: Students as Co-Creators—"Culturally responsive teachers and leaders (who fundamentally believe all students are capable) center learning around students' experiences and position them as co-creators, with emphasis on prioritizing historically marginalized students." This shifts power and ownership in a learning community and supports authentic connection between students' knowledge and culture, and academic content.

The resulting research questions for this study were as follows:

1. Does increasing higher education students' input into course content increase their engagement in the course?

2. How does increasing higher education students' input into course content impact the students' thinking about and experiences within the course?

3. How does increasing higher education students' input into course content impact the faculty members' thinking about and experiences within the course?

Theoretical Framework

Scholarship of Teaching and Learning

This research is situated within the transdisciplinary field of the Scholarship of Teaching and Learning (SoTL). SoTL is commonly considered to have begun in 1990 with Boyer's publication of "Scholarship Reconsidered: Priorities of the Professoriate." Boyer (1990) made a compelling case that the traditional research tent in the disciplines should include research into the teaching and learning of disciplinary knowledge. This reflects his conviction that teaching and learning is enacted differently in different disciplines, and also that disciplinary knowledge is transformed and extended in the teaching and learning process. In addition, the focus on an SoTL creates a conduit for communication and learning across disciplines. Raffoul et al. (2021) describe this transdisciplinary nature as a "cosmopolitan attitude of belonging to no discipline and informing pedagogical practice in all." Yet, they affirm that it does have "its own conventions, assumptions, models, and literature."

In our current work, the transdisciplinary potential of SoTL has allowed us to bring together a team of faculty from different disciplines and academic levels. Raffoul et al. (2021) describe the transdisciplinary possibilities of SoTL as "a widening of the scholarly 'trading zone' (Galison, 1997) that allows for mutual learning among scholars who might not otherwise interact." This holds the potential of impacting the relationships between disciplines, in general, and between scholars. One of the benefits of transdisciplinary conversations into teaching and learning is the ability to begin to ferret out promising practices that transcend disciplines and those that are more discipline-bound. In our design, this flexibility accounted for a transdisciplinary focus on the co-creation of curriculum but with different strategies and implementation processes within each discipline. It also allowed us to work with colleagues from across the university.

Over the past decade there has been an increased call for SoTL to embrace a role focused on critical or social justice (Liston & Rahimi, 2017). In fact, this is the direction that Boyer himself was moving at the end of his life. David Star-Glass (2011) analyzes the shifts in Boyer's thinking from his initial conceptualization of SoTL in 1990 to a paper published posthumously in 1996, and he notes that

> in his last publication, however, Boyer (1996) reframes the scholarship of teaching with a fresh urgency. It has now become a "scholarship of sharing," in which sharing means active engagement with current students, the scholars of the future. Teaching and its scholarship have become a shared enterprise, a communal act. (p. 4)

This "sharing" of a "communal act" takes place in a space in which social justice can thrive. Keith Trigwell and Suzanne Shale (2004) contend that a communal approach to SoTL requires us to pay close attention to our students and how they experience our teaching. They assert that ideally teaching should be an activity in which students are partners in learning. In their introduction to the book *Promoting Social Justice through Scholarship of Teaching and Learning*, Delores D.

Liston and Regina Rahimi (2017), make the case that the creation of "commons" is fundamental to SoTL, given that teaching is a public act. The goal of publication, which is also essential to SoTL, expands this commons to a dialogue within a larger academic public. Liston and Rahimi (2017) go so far as to suggest that a focus on the commons in SoTL "can move us into a reconceptualization of teaching and learning as a shared endeavor that transforms not only teaching and learning but our relationship to one another and of ourselves to the world" (p. xiii). They suggest that increased accountability, shared purposes, the need for diverse ideas, and encounters with others who have different experiences that are essential to a commons also provide a pathway for an SoTL that works toward social justice (p. xvi). In our current research, our invitation to our students to join us in a broader collaboration involved an invitation to have more input into the course content.

Co-Creation of Learning and Teaching in Higher Education: Engagement as a Core Component

Felton et al. (2013) point to an international focus on increasing student engagement in SoTL. They state that "across the spectrum of these movements, the focus on voice and engagement aims to empower students to take greater responsibility for their learning" in an effort to "transform education from the bottom up through the co-construction of the learning experience" (p. 64). However, they warn that co-creating is not an easy task and can initially cause uncertainty in students (and faculty) who are used to more traditional power hierarchies.

Broadly defined, co-creation is a process in which students take part in designing their own learning experience (Bovill, 2020). In an examination of the impacts of co-creation in higher education, Cook-Sather, Bovill, and Felton (2014) found multiple benefits that include increased engagement, motivation and learning, a stronger sense of student identity, and enhanced teaching and classroom experiences. Iversen and Stavnskaer Pedersene (2017) define co-creating as "an opening towards re-designing and re-inventing the shared space of teaching and learning" (p. 17). While traditional student roles often involve students in more passive and compliant roles, co-creation requires active student engagement. Bovill et al. (2016) provide a broad overview of issues, practices, theory, and research related to co-creating, learning, and teaching in higher education. They point to the essentiality and complex nature of student engagement:

> Student engagement is both a requirement for and an outcome of partnership. This complex phenomenon encompasses student involvement, excitement and persistence (Ahlfeldt et al., 2005), layered and meaningful participation in, and commitment to, learning (Kuh et al., 2010), and emotional as well as intellectual investment; according to Mann (2008), it is the opposite of alienation.

It is widely agreed that there is no clear-cut definition of student engagement. It functions as an umbrella term that covers a wide range of activities across universities (Radcliffe & Dimmock, 2013). To operationalize engagement for this study, we draw on Lenger Kang's (2021) delineation

of engagement as three main pillars: academic, intellectual, and social-emotional. We consider the academic as interest and connection to course content, the intellectual as the positive challenge and ownership of learning, and the socio-emotional as connection to one's identity and to others in the learning process. Stefan Popenici (2013) describes students' life experiences as the anchor of this trifold process:

> Students relate to the world they experience in the living of their lives, and this also determines their position towards the significance of learning and their levels of engagement. The profound significance for learning is that academic life can be seen as a mediated action with meanings associated by students in a social context. (p. 31)

Popenici (2013) draws on the importance of self-determination in students deciding to engage with their studies. This supports a connection between the co-creation of learning and teaching and student engagement as students are given opportunities for agency. Bovill (2013) suggests that co-created curricula can result "in students being able to choose content, structures, processes and experiences that are more likely to be relevant and motivate students to adopt deeper and more active approaches to learning" (p. 469).

Mode of Inquiry: Small Experiments

In the winter term of 2022, each of the three faculty members designed and implemented a strategy to increase students' opportunities for input into the curriculum within each faculty's course. The three courses in this experiment offered a wide range in contexts: a synchronous online doctoral course in educational leadership, an asynchronous master's course for teachers working toward special education certification, and an in-person undergraduate beginning composition course.

The demographics also varied by course. For the undergraduates, across two sections, there were approximately 40 students ranging from 18–21 years old. One section of students was primarily Pell Grant–eligible, first-generation, Black and Latine, with approximately 50% male, 50% female. This was a "retake" opportunity class: all the students had not passed the course in the fall term. The second undergraduate section was primarily international students, from India, the Middle East, and Russia, again all of traditional undergraduate college age. The master's level students were 25 certified general education teachers or Master of Arts in Teaching (MAT) students seeking a special education endorsement; approximately 70% were females, and all were above 21, with the majority being white. In the doctoral course, there were 16 students, 75% female, 25% Black or Latine, and the remaining white; the average age was 40 and above.

The strategies used by each faculty member were the following:

Undergraduate level: In two in-person sections of an introductory composition course, a standard assignment of exploring and writing about an abstract term was redefined as a shared inquiry question. Students worked together to choose the term and then brought in resources that illustrated their understanding of the term or raised questions that explored the term further. The resources

the students curated, along with notes and diagrams from students that captured their thinking as they compiled and connected resources, were recorded in Padlets (an online tool that allows for sharing, collaborating, organizing, and storing ideas). The Padlets were used extensively by students as they wrote about the term.

Master's level: This was an asynchronous online special education methods course on curricular adaptations for in-service early childhood teachers obtaining their endorsements in special education. For the SoTL study, each of the weekly discussion board assignments was enhanced by creating a Padlet and asking students to add their own content on methods and materials that they found useful in working with their students. The instructor and the students engaged and responded directly to this content in subsequent discussions and within the Padlet so that student-led content was integrated into the course.

Doctoral level: In a doctoral course in educational leadership, the instructor specifically posed the question of how to increase student voice throughout the class and revised two standard assignments. For a case study paper with a prescribed format, students were invited to critically examine the format and describe other strategies that could be employed to increase the impact of lessons learned from the case study process. For an article review assignment that focuses on change management and typically draws on articles from the Harvard Business Review, the instructor instead asked students to think of a book or film (or any other media source they chose) that showed a depiction of change, one that either worked well or did not work well, and explain why or why not.

Throughout the implementation of the strategies, the researchers met weekly to discuss ways in which we were intentionally planning to increase student voice across all courses. Researchers were able to provide feedback to each other and share best practice ideas. These sessions proved to be an invaluable source of ideas, motivation, and sharing.

Data Collection and Analysis

There were three forms of data collection:

1. **Researcher-designed survey on students' perspectives on increased opportunity for input into course content.** Drawing on literature on student engagement, the research team developed a post-implementation survey to gather data on students' experiences during the activities designed to increase student input into course curriculum. The survey (Appendix A) consisted of eight questions with a five-point agree-disagree set of response options and four open-ended questions. The questions operationalized engagement through six dimensions: interest in the content, interaction with others in the course, enjoyment in learning, positive challenge, connecting the course material to lived experiences, and the level of absorption in the learning tasks.

2. **Analysis of student work, written and verbal, completed during experimental activities.** Assignments differed greatly across the classroom contexts of the research team, as did grading and data collection practices. Analyses of student work differed accordingly, with the common focal points of considering completion rates, depth of integration of course content and students' experiences, and quality of the work as measured by course-specific assessment tools.

3. **Researcher reflective journals and notes.** Each of the researchers kept a reflective journal, in which they described the implementation of their strategy, their own responses to the process, and their students' responses. Time for entries into the journal was sometimes allotted during team meetings; the researchers also often journaled on individual time. The journal entries were considered private to each researcher to allow for full expression of their process. As part of the data analysis, each researcher wrote a synopsis of their journal using the following headings as prompts:

   - **Implementation**: What did it bring up for you? What challenges did you encounter personally? What did you learn? What mindsets shifted for you?

   - **Impacts on instruction and impact you saw on students**

   - **Reflections on SoTL process**: What did you see as the impact of being in a group for SoTL? How did the process impact, or not impact, your instruction? How did the process impact, or not impact, your professional and/or personal identity?

One of the group's cofacilitators then read and synthesized themes in these synopses.

Results

Impact on Student Engagement and Course Experiences

A subsample of 47 students across the three contexts completed the survey asking about their experiences during the experimental strategies. The respondents were distributed almost equally across the three instructional contexts, with 15 doctoral, 15 master's students, and 17 undergraduates.

The survey responses were analyzed to address research questions 1 and 2:

1. Does increasing higher education students' input into course content increase their engagement in the course?

2. How does increasing higher education students' input into course content impact the students' thinking about and experiences within the course?

The responses to scaled questions on the survey are summarized in Table 1; initial analyses of responses to open-ended questions are reported within the discussion that follows the table.

Table 1: Students' Self-Reports of Experience During Curricular Experiment (N=47; 15 Doctoral, 15 Masters, 17 Undergraduate)					
Question	**Much More**	**Some More**	**About the Same**	**Somewhat Less**	**Much Less**
Felt they had more or less input than in other activities	40% (n=19)	34% (16)	21% (10)	0	2% (1)
Question	**Strongly Agree**	**Agree**	**Neither**	**Disagree**	**Strongly Disagree**
Increased interest in content	49% (23)	40% (19)	6% (3)	0	0
Increased interaction with peers	51% (24)	38% (18)	6% (3)	0	0
Increased enjoyment in learning	53% (25)	34% (16)	11% (5)	0	0
Connecting material to my lived experiences	55% (26)	32% (15)	11% (5)	0	0
Increase in positive challenge	55% (26)	36% (17)	4% (2)	2% (1)	

Feeling so absorbed that time flew by	47% (22)	28% (13)	19% (9)	2% (1)	2% (1)

In all categories, the majority of students reported positive impacts. First, we asked whether the activity had in fact given them more input than the rest of the course. The majority (74%) said "much more" or "some more." Across all contexts, students gave high ratings to all aspects of engagement. The majority strongly agreed or agreed that the activity in which they had input in the curriculum increased their interest in the content (89%), increased interaction with their classmates (88%), increased their enjoyment in learning (87%), and increased the level of positive challenge in the course (91%). When asked if they felt so absorbed that time flew by, three quarters (75%) strongly agreed or agreed. In response to the question of whether the activity increased the connection between the course material and their lived experience, 87% of students agreed or strongly agreed.

The homogeneity of the positive responses is particularly notable when the range of contexts is taken into account. The curricular changes were small, the students very different, and the modalities considerably varied. Yet the students reported positive experiences. Of further note, for four out of the seven questions posed, no students responded in the "disagree" or "strongly disagree" categories. These questions dealt with increased interest, increased interaction levels, increased enjoyment, and connecting material to students' lived experiences. These questions align with the goal of touching the academic, intellectual, and social-emotional connections the researchers sought to enhance.

The survey also included open-ended questions that asked students how they felt about the experimental strategy, their main takeaway, and personal connections they made to the content. The analyses of this data are ongoing; we draw on them selectively here. As well as speaking to the aspects of engagement that were visible in the quantitative data, the students' responses pointed to the impact they found in the increased interaction with peers. For example, responses from the undergraduates included:

> *I really enjoyed it because instead of looking up on the internet what either of the abstract terms meant we got to use what we know and you'll see that some people think differently than others and it amazes me how others view that term.*

> *I got to see my peers' perspective when it came to abstract terms, and when it came to my reading of choice, I got the chance to talk about it. Which I really like to talk about because everyone has different perspective[s] to the situation.*

For the master's students, the sharing they described through discussion postings was particularly notable for a fully online, asynchronous class.

> *There were real discussions and not just book summaries and exit slips.*

> *They [discussions] were more realistic because it was actual teachers sharing their teaching ideas in the enrichment and the Padlet.*

The doctoral students spoke to opportunities for authentic connection.

> *We could engage in a conversation about authentic opportunities for us to grow and change.*

> *It was nice to not be so worried about the output/product. It allowed for authentic conversation.*

As described earlier, the analyses of student work differed according to the course assignments, with the common focal points of considering students' integration of course content with their own personal and professional experiences and considering the quality of the work as measured by course-specific assessment tools.

In addition, the weekly coverage and assignment structure of the undergraduate course allowed for comparison of students' in-class engagement during the weeks of the experimental strategy. The week in which the SoTL–related activity was completed saw a spike in overall in-class grades and a rise in the percentage of students earning an A for their in-class work, both of which were considered measures of in-class engagement.

Across all courses, the researchers saw a rise in students' integration of the course content with their own personal and professional experiences, and a deepening in the levels of analysis. In the undergraduate course, across the two sections with differing student populations, 100% of the students incorporated lived experiences into their essays on abstract terms even though it was not an explicit requirement. One student, who had not passed the class in the prior term, wrote an essay exploring the different definitions of masculinity:

> *I personally grew up with a father that was raised in a "traditional" way. . . . Some of his teachings [included] never shed a tear no matter what. This led to me having to keep my emotions inside of me. It was like a pot of water boiling over.*

The student went on to argue for a change from the "traditional, toxic" version of masculinity to a more "positive" approach:

> *With positive masculinity, you comfort others in hard times. . . . You show that you have matured and can own up to your mistakes.*

Relatedly, the rate at which undergraduate students integrated outside sources for this essay assignment rose in comparison to prior sections of this course, though this was not an explicit requirement.

At the master's level, as the collection of student-curated resources for teaching diverse students grew and was integrated into course discussions, students' postings increasingly spoke to the direct applicability to their professional practice. The impacts went beyond an increase in usable ideas. One student, a highly experienced teacher, wrote about building a shared resource base:

> *This challenged me to reevaluate my current teaching. While I am confident in my abilities and instruction, it has inspired me to make changes and up my game. After teaching for so many years, it is common to get comfortable and to continue using what "works."*

Another teacher wrote about a shift in her understanding of influences on not only her students, but her coworkers:

> *I learned a lot about how to diversify the way I approach my students as well as my coworkers. I was reminded constantly of the situations happening to others outside of the school day and to be respectful and make space for that and realize my students may have bigger things happening than working on their sounds that day.*

In the doctoral course, students were school and district leaders. As part of the SoTL experimentation, the instructor was completely transparent about the goal of increasing student voice and input, and the class had regular discussions about how to change assignments toward that end. A core programmatic assessment embedded in this course was an analysis of a change leadership framework. The instructor's mode of preparing students prior was to have a brief class discussion around students' ideas related to the core concepts of the framework; students would then write individual analyses. In this experiment, students and the instructor decided they would work in small groups to unpack the framework in relation to lessons they had learned in their school contexts. Their papers contain far more detailed application ideas and, as compared to papers from prior classes, greater in-depth analyses of change leadership frameworks.

Impact on Faculty

The reflective journals and notes maintained by the team were analyzed to address the third and final research question:

3. How does increasing higher education students' input into course content impact the faculty members' thinking about and experiences within the course?

In describing the implementation of their strategies, all three researchers found a process of moving from initial challenges in the unfamiliarity of co-creation to greater engagement for themselves and their students. As the undergraduate instructor put it,

> *I did notice that it can still be a challenge to get undergraduate, primarily freshmen students out of prescriptive thinking. ("What exactly do I respond to?" "What do you want me to write?" "Ok, so that's it; am I done?") This was true especially at the beginning of the activity, but with some reassurance, the students seemed empowered. ("I want to choose this story." "I'm interested in this.") I think if activities increasing student input on curriculum were integrated more often in courses across the University, students would become more comfortable with them.*

At the master's level, the instructor spoke of a similar process:

> *What surprised me most when I began to actively seek out student input for my curriculum was that initially the students were not open to adding to the curriculum and were satisfied with the existing discussion prompts and the assignments. However, with more encouragement and the development of the Padlet, they began contributing to the creative process. To me, this was powerful and important to see that they saw themselves as educators in the crafting of successful curricular resources.*

In the doctoral course,

> *There were issues that I did not anticipate, both for me and for my students. Until we really examined the impact of the "power dynamic" at play in our classes. . . . It was a bit difficult for me to figure out where increasing levels of student voice could fit. I think this is because as an instructor, I am the one who historically plans out not only what happens in class, but how it happens. . . . Even though it is counterintuitive to imagine that students would have any issues with increasing their level of input into the process of planning for class, it did cause a bit of angst for some. It appears, they too rely on the power differential at play, particularly by the time they reach the doctoral program level. They too were so used to being told what to do and how it should be done that it was initially difficult for them to assume and act on some of that power being handed to them. In some cases, it took more time than anticipated to discuss the ways in which WE (students and instructor) could make feasible adjustments to assignments as well as to decide the best format for submitted assignments.*

The process led to profound shifts in how the faculty members experienced their role in the classroom. As the undergraduate professor said:

> *During the SoTL activity, I truly felt like a facilitator; students were responding to one another (not talking directly to me), making connections between their ideas, pushing each other to deepen their thinking, and discussion was never stalled. Even the typically quieter students were participating in share-outs. I attribute this to the passion students found for this assignment in particular because they were allowed to curate the reading curriculum. For example, several students brought up the 2021 Adam Toledo case (he was shot by a police officer in Chicago) in relation to the abstract term "justice" and spoke passionately about how this one instance was a reflection of larger issues and injustices facing the communities they belonged to. I also observed students making connections between abstract terms that I had never thought of myself. (Ex: limiting someone's "freedom" out of "love," like a parent might for a child.) I was a learner in the classroom just as much as they were.*

> *[I also found] that the more I shared my voice and lived experience, the more students seemed inclined to share theirs. For example, one essay prompt asked students to write a narrative essay about a lesson learned. I shared an example of a brainstorm I did for the assignment about learning the lesson of prioritization after I missed my grandpa's passing because I was taking a test in high school. Several students opened up in their essays and*

wrote about similar stories of loss, grief, and the lessons they learned from those struggles. It seemed that my willingness to be open and vulnerable with them translated into a willingness on their part to be open and vulnerable with me.

At the master's level,

I learned how to give up some control of the curriculum and to listen to my students as they started to contribute resources in the Padlet. I also learned the importance of being less rigid in planning every aspect of the curriculum and in trusting the learning process. Once I realized the importance of student input in creating an engaging curriculum, I began to focus on the resources that were added to the Padlet and how my students started to respond to each other's posts. Actively seeking out student input changed my approach to curriculum design. It allowed me to pause and develop a deeper understanding of the fluid nature of curriculum development.

At the doctoral level,

I would contend that not only were students more engaged than at times when I previously taught this course, but so was I. This phenomenon could have occurred because we were engaging in learning with and from each other simultaneously, but in addition, I am convinced that actually adding students' voices to the "planning equation" for my course really invigorated us all in new ways for the teaching and learning with which we were charged.

I realized that I have been "transactionally" sound in terms of my instructional practices. I turned in things on time, I was at class when I should be. Through our SoTL research . . . I also began to think in terms of being a "transformational" instructor. My goal was to teach in ways that opened doors for students to be able to choose not only their path and the ways in which they demonstrated their learning but also provided an opportunity to gather feedback, make adjustments, and provide additional opportunities for collaboration.

All three faculty members spoke to the value of their collaboration with each other.

I found being in a long-term professional development cohort extremely beneficial in pushing my thinking about how to increase student input on the curriculum, share power in the classroom, and empower student voice.

Most notably, the process of working within this group forced me to become vulnerable and open up for help when needed. At this level, we all have the ultimate advanced degrees and it appears we were kind of comfortable working in our silos. The walls of my silo melted away. I found a new core group with whom I will continue to share ideas and ask for help. We all shared openly the feedback our students had given us and we strategized together about how to respond effectively to that feedback.

And all three faculty members have carried the work forward, sometimes in ways that surprised them. One initiated a faculty learning community on equity-mindedness, using case studies. As she wrote, *"Thinking about getting my students to co-construct the curriculum propelled me to construct my own DEI initiative instead of just joining existing ones or just participating from the sidelines."* The undergraduate faculty member also started leading a faculty professional learning community, this one on responsive curriculum strategies.

The doctoral faculty member wrote:

> *There were additional impacts that I experienced even after this course ended. I have not been able to stop thinking more deeply about the ways in which I plan and execute class sessions and other interactions with students. I began to realize the impact of how we view the power differential (between professors and students) as well as the power of using [students'] feedback to make adjustments to my instructional practices. I have continued to prioritize instituting practices that foster a feeling of belonging for students. I value my interactions with students differently. I have come to realize the multi-faceted impact of my work with them.*

Discussion

The results of these small-scale strategies continue to build the evidence base on the impacts of co-creation in higher education classrooms. Our questions focused primarily on how students and faculty experienced a foray into co-creation. Based on the survey questions, students reported that that they did indeed feel like they had more input into the curriculum, they enjoyed the learning, increased their interaction with peers, connected learning to lived experience, and were challenged by and absorbed in the learning. In addition, in comparison to other class activities and content, students showed more engagement, more personal connections, and deeper analyses in the sections of the courses in which they co-created curriculum. This is significant because we intentionally started small, and the results were unequivocal.

Our definition of equity underlaid the study: equitable classrooms are those in which students could bring and express their full identity and experiences. The analyses of student work showed an increase in students' integrating their own experiences, both personal and professional, in writings and discussions. This appeared to have two effects: a deepened engagement with course materials and an increased interest in the perspectives of others. A future research question that could develop from this finding is this: Does inviting students to share their own experiences lead to an increase in students' listening to and learning from others' experiences?

In addition to the impact on student learning, SoTL focuses on faculty learning with and from each other and their students. We experimented not only with the co-creation of curriculum but also with a transdisciplinary group of faculty and staff who worked regularly together for over a year within the overarching framework of SoTL. Within this framework, the faculty determined definitions of *equity*, created research questions, decided on data sources, created surveys,

collaboratively analyzed findings, wrote a report, and wrote a paper. We shared experiences, knowledge, concerns, insights, and learning. We developed deeper relationships. We gained confidence in our ability to co-create, and the group helped us each feel supported and less vulnerable.

In building our theoretical framework, we deliberately wove together the principles of SoTL and of the co-creation of learning and teaching. This is because they share underlying values, beliefs, processes, and assumptions about learning. In both cases, there was a commons, or group, that was learning together and sharing in the creation of teaching and learning. The group of SoTL faculty, rather than each member creating their own research, came together and co-created research on co-creation with their students. Then, they entered into the commons of their classrooms, invited students into co-creation, and carefully watched (researched) what happened.

Edward Brantmeier (2013) describes co-learning as one of the ingredients in a pedagogy of vulnerability. He tells us that this requires an act of courage, as student-teacher relationships are fraught with power assumptions. Teachers often feel the pressure to know all the answers about the topic they teach, and students often assume that due to this shared assumption, the teacher is exclusively in charge of creating curriculum. Therefore, a movement toward inviting student voice in curriculum can counter some of those common top-down power dynamics, which Freire (2000) contends are incompatible with emancipatory education.

Near the end of his life, yet still early in developing our beginning notions of SoTL, Boyer (1996) shifted his emphasis to a "pedagogy of sharing" (p. 4). This pedagogy of sharing is both what allows us be vulnerable and allows us to grow. Vulnerability is a state of being open to learn, but we have to be safe in order to learn in vulnerability. Co-creating is vulnerable for faculty as well as students. In this work, we were able to use an SoTL framework to support one another.

Limitations of the Study

Felton et al. (2017) stress that in order to counter existing social hierarchies, the equitable inclusion of diverse student voices must be carefully considered, given the complex intersectional identities through which students engage. Our ultimate goal was to support faculty in building a university-wide research agenda on teaching practices that promote equity. While faculty spoke about their own intersectional identities as teachers and researchers, we did not ask students to address the impact on their own intersectional identities. Our survey questions didn't directly address equity issues. We believe students should be brought into this discussion and also understand our goals related to equity.

Another limitation of the study, in light of trends in SoTL, is that we did not invite students into the creation of the research questions or the analysis of the data. As our first venture into SoTL, we intentionally started small. We focused on co-creation of some aspect of the class content or curriculum. We did not invite students in as coresearchers. This may have yielded different types of co-creation processes.

Finally, while the overall research process from conception to report took well over a year, the data-collection process took place over a period of weeks. This limited a number of possibilities related to research design. For example, we did not collect baseline data, which did not allow us to collaboratively plan next steps as is common in cycles of participatory action research. In addition, the time constraints of the fellowship period limited our analysis of the qualitative data collected in the study.

While fully acknowledging these limitations, and realizing there are others, we close with the words of an undergraduate student on the benefit of having input into the content of an assignment:

> *I think it overall allowed me to BE part of the definition rather than have it just given to us. It involves us.*

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