

Board 126: Work in Progress: Investigating Faculty Development Experiences in the Context of a Teaching-focused Book Club

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WIP: Investigating Faculty Development Experiences in the Context of a Teaching-Focused Book Club

Short Abstract

This research Work-in-Progress paper investigates STEM faculty's perceived effect of participating in a teaching-focused book club at a very high research activity university. Due to the intensive nature of faculty professional careers, teaching often takes a backseat to research. Faculty also lack time to attend workshops on teaching and learning. Book clubs are an alternative to support faculty development. A teaching-focused book club was designed to create a social forum where STEM faculty members could share and innovate their teaching practices. Post-participation semi-structured interviews were conducted with four book club participants to investigate their experience during the book club and how they have implemented the book club learning in their classroom. The data was qualitatively analyzed, looking for emergent themes. The book club participants reflected on improvements related to faculty-student communication and student feedback; and appreciated connecting with other instructors who shared the goal of improving student learning by reflecting on their teaching practices.

Introduction

The intensive nature of faculty professional careers in highly intensive research institutions (hereafter R1 universities) can result in prioritizing research over other faculty activities (i.e., teaching and service). The lack of time and disconnection between content and faculty discipline have been reported as reasons faculty members do not participate in faculty development and implementing research-based teaching strategies in their classrooms (Matusovich et al., 2014; Medina et al., 2010). An alternative to address this issue is through professional development book clubs. This professional development strategy offers faculty a social space where participants can share and reflect on their experiences and learn as a community (Grierson et al., 2012; Lyons & Ray, 2014; Porath, 2018).

Considering practical aspects of professional development interventions (Felder et al., 2011), online book clubs can offer a learning community characterized by low-cost implementation (Zagar et al., 2019), discipline-focused interaction, and access flexibility, which may be critical in multi-campus institutions. Book clubs have been used to facilitate reflection and discussion on a variety of topics in engineering education, such as Diversity, Equity, and Inclusion (DEI) (Ramsay-Jordan & Jett, 2020), teaching (Jones, 2018), and technical development (Schneider et al., 2020). This work-in-progress reports the experiences of a group of faculty who participated in a book club at an R1 university in the west of the U.S. This R1 institution's Engineering School Learning and Teaching Hub (LTH) designed and facilitated the reported book club to support engineering faculty in improving their teaching.

Follow-up interviews were conducted with the book club participants to investigate their experiences during the book club sessions. As Felder et al. (2011) suggested, faculty development should be followed by assessing its effectiveness. Kirkpatrick and Kirkpatrick (2016) also highlighted the importance of program evaluation. They justified it as a way to 1) continue to improve the program, 2) maximize the effectiveness of learning in practice, and 3) demonstrate the program's value to the institution. Therefore, this study aims to analyze STEM faculty's perceived effect of participating in a teaching-focused book club.

Methods

The Kern Entrepreneurial Engineering Network (KEEN) funded a book club through an annual support package that allows institutions to develop and promote an entrepreneurial mindset (EM) in teaching and learning. EM is the "collection of mental habits that influence the way you think about the world and act upon what you see" (*Engineering Unleashed*, 2023) and centers around three core elements known as the 3Cs: Curiosity, which is the main drive to innovation; Connection, which is integrating information from many sources or disciplines to gain insight; and, Creating Value that is related to the understanding of the societal impact of their solution for their stakeholders. The EM, coupled with engineering technical skill sets, prepares

engineering students to be innovative critical thinkers and problem solvers, ready to solve societal problems. In the classroom, entrepreneurial-minded learning and active learning pedagogies reinforce engineering concepts and support inclusion (Bekki et al., 2018). Faculty could not only teach students about EM but also adopt EM in their own teaching practices (cite).

The purpose of the book club was to create a faculty community of practice interested in learning about instructional strategies and EM. Cox (2004) defined a community of practices (CoP) as a group of six to fifteen members engaging in a collaborative activity to improve their Teaching and Learning Scholarship. The book club was held virtually during the fall of 2022 (October - November). The book used as a guiding material was *Small Teaching: Everyday Lessons from the Science of Learning* (Lang, 2021). *Small Teaching* features research-based teaching strategies from cognitive psychology, neurology, and biology to provide educators with simple changes and interventions to improve student learning. The LTH team purchased physical book copies and audiobooks with grant funds to ensure all book club participants had access to their preferred book format. An ebook was also available through the institution’s library.

The three book club meetings were one hour long each and focused on one book section: 1) knowledge (chapters 1-3), 2) understanding (chapters 4-6), and 3) inspiration (chapters 7-9). Each meeting started with a brief overview of the chapters before discussion with participants. Discussion questions centered on what participants were already doing related to the teaching strategies, what they would like to try based on the reading, and how the strategies connected to the entrepreneurial mindset. LTH staff and an affiliated faculty member who served as the meeting facilitator created presentation slides and content. Examples of discussion questions that explored the teaching strategies from the text (in italics) and embedded EM included:

- How do *predicting, connecting, and motivating* cultivate curiosity? How do they encourage learners to make connections?
- How does the concept of considering *alternative pathways to learning* tie into an entrepreneurial mindset?
- How can *explaining* allow students to integrate multiple solution sources of information to gain insight?
- In what ways can *belonging* support students in persisting through (and learning from) failure?
- How does the concept of continual learning as an instructor relate to what we look for and encourage in an entrepreneurial mindset?

Book club members were invited via email to participate in individual semi-structured online interviews via Zoom after the conclusion of the book club. A total of seventeen participants engaged in the book club program across all meetings. Participants were STEM faculty members (n = 10) and LTH staff (academic advising and program developers) (n = 7). Ten of the participants identified as Female, and seven identified as Male. Nine of the 10 faculty members who participated in the book club were teaching faculty, and one had a tenure-track appointment. Four of the ten faculty participants agreed to take part in this research study. Participants' demographics are shown in Table 1. Data collection involved the use of a semi-structured interview protocol designed to understand participants' experience and application of book club learning. Interviews occurred in Spring 2023 via Zoom.

Table 1 - Participants Demographic

Pseudonym	Gender Identity	Position Type	Class Level	Department
#1	Male	PhD candidate working as Instructor of record	1st year	Engineering and Engineering Education
#2	Female	Lecturer	1st year	Math & Natural Sciences
#3	Female	Assistant Teaching Professor	2nd year	Civil Engineering

#4	Female	Assistant Teaching Professor	1st year Graduate level	Construction Engineering
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De-identified transcribed interviews were thematically analyzed (Nowell et al., 2017). Data was analyzed in a two-phase process, which consisted of a round of open inductive coding followed by the consolidation of codes to create themes. The first and second authors conducted the coding process, while the last author supported the process by offering a third voice for coding disagreements. The list of codes created during the coding process is presented in Table 2.

Table 2 - List of codes and themes

Themes	Codes	Description
Experience During the club session	Finding like-minded community members.	Experience of faculty finding other faculty who want to improve their teaching.
	Value of hearing from peers' strategies in practice.	Value of learning from other participants' teaching experiences.
	Value of learning new teaching strategies.	Usefulness of learning teaching strategies during the book study.
	Continued conversations after the book study.	A desire to continue communication or collaboration among participants after sessions or the whole book study.
	Value of applying knowledge.	Value of learning ways to implement teaching strategies is greater than learning what types of teaching strategies exist.
Impact on faculty teaching	Create a welcoming environment.	Excerpts that refer to Faculty reflecting or changing the classroom environment toward a welcoming environment.
	Using an entrepreneurial mindset in the classroom.	Participants use the Entrepreneurial Mindset in their classroom.
	Challenges in implementing.	Challenges the participants faced when implementing teaching strategies learned during the book club.

Results and Discussions

This session presents the preliminary results from analyzing book club participants' post-participation interviews. Results converged around two main themes: 1) Experience during book club sessions and 2) Impact on faculty teaching.

Experience during the book club sessions

This theme encapsulates codes that express participants' experiences during the group club sessions. When asked about their experience during the book club sessions, all participants reported being in a group of faculty who had the same goal of improving their teaching as the most important aspect of the book club experience. In this sense, the book club served as a faculty learning community, motivating participants to continue engaging in the sessions and helping them to reflect critically on their teaching. One example of this is stated in Participant #1's answer when asked about the most valuable aspect of the book club:

“It was a very good, positive experience, to see many faculty members who were interested in implementing the findings of the research instead of just extending that research to another research and publishing papers and getting degrees. They were much more interested in implementing actions and seeing the benefits of it or the lack of benefits of it. I was able to see and connect. I felt like I was within a community that I belonged to. That was a very big motivation factor for me.” (Participant #1).

The impact of this sense of belonging and collaboration resonates with other reported literature in Faculty Learning communities (Liberatore, 2021; Tinnell et al., 2019) and is critical to improving teaching among club members.

Book club participants also reported that the collaboration extended the sessions and continued after the conclusion of the book study. Participant #2 reported a continual conversation with other participants via email:

“And then I made some connections with several people in a couple of them, and we talked. We like had follow-up conversations via email.” (Participant #2).

This continual collaboration could facilitate structural teaching changes by developing a shared vision regarding the importance of faculty development, faculty participation, and resulting teaching improvements (Henderson et al., 2010).

The book also played a fundamental role in supporting faculty reflection by introducing new teaching strategies. It is exemplified in the following statement of Participant #1:

“Another takeaway that I had was those (teaching) strategies that I learned from the book or the techniques that I get from talks or book clubs, or discussions is the flexibility to modify them, and also to reach out to people who are trying to do similar things” (Participant #1).

The book was a central artifact that guided the discussions and motivated participants around a specific topic. Participant #3 indicated that the book also brought new information to the discussion and motivated critical reflection on their teaching strategies. Landry and others (Landry et al., 2022) highlighted the importance of choosing a compelling and relevant text when planning to create a book club.

Even when the topics were not new to the participants, they offered ways to implement them in the classroom. Participant #2 stated that she was aware of the teaching strategies and their benefits but did not know how to implement them in her classroom.

“But I did implement a lot of techniques, some of the stuff that I sound really really helpful. It was sort of stuff that I knew, but I just like didn't know how to implement it” (participant #2).

The participants' overall experience during the sessions was positive; it helped them feel part of a community that shared the same goal and reflected on how to improve aspects of their teaching and student learning.

Impact on faculty teaching

In this theme, we condensed the codes related to implementing the learnings from the book club experiences. The first aspect of implementation was a perception related to students' needs and challenges. For example, Participant #3 shared her concerns about her working students:

“You know they (students) have all these (challenges) nowadays. You know most of them. They work, they have other challenges.” (Participant #3)

This quotation presents evidence that the book club not only created awareness of the technical aspect of teaching but transcended to a critical pedagogical domain, resulting in discussions about students' personal challenges and strategies to increase inclusiveness in the classroom. By recognizing that working students are at constant risk of failing or dropping out (Da Silva Langhaz & Almeida Gill, 2020; Tumin et al., 2020), the faculty can strategically design a welcoming environment in the classroom.

In addition, participants had the opportunity to share the strategies they use to facilitate students learning in different class levels and engineering disciplines. It also helped other faculty members to identify strategies to overcome low student participation in classroom activities. Participant #3 reported how the book helped her to overcome the challenge of students passively waiting for problem solutions. She described how the book helped her implement strategies such as making students retrieve previous knowledge and motivating them to predict material behavior.

“They just want to hear the answer every time from me, and I think that is what I used to be doing. I felt like I had to do it because the students were expecting it from me. But now, after studying the book, I tried to incorporate all these techniques. Like predicting instead of giving them the answer. [...] Now, I kind of take my time, and I use this strategy. I start with: “Do you have any prediction?” or, “What do you retrieve from my previous knowledge?” (participant #3)

Participants could share techniques to improve students' experience outside the classroom. For example, Participant #4 shared how the strategy shared by another participant to increase student participation during office hours could be useful for her future classes:

“He [another participant] said (that) during the office hours he just presents more assignments, more problems. So there are a lot of students coming in.[...] It was an interesting experience for me. I might choose [using] it when I'm teaching those high-level courses.” (Participant #4)

Participants also reported a willingness to connect with their students to understand their needs and interest in learning the course topics. Participant #2 shared a strategy she uses to know more about their students:

“I think that I try really hard at the beginning of the semester to get to know the students. I do this assignment where they have to create a poster infographic. That is them to tell me who they are. What their major is, and their interests.” (Participant #2)

The relationship between student and instructor is critical for a more effective learning environment (Anderson & Carta-falsa, 2002; Hoffman, 2014). The book club served as a catalyst for pedagogical reflection, which resulted in faculty planning and implementing pedagogical techniques that may contribute to student learning and faculty-student relationships. Some of those reflections were motivated by the EM discussions. Participant #2 shared her experience engaging with EM during the book club sessions and how she tried implementing EM in her classroom.

“I also thought it was really cool to learn about some of the other stuff like the [entrepreneur mindset]. It was discussed a lot and that [entrepreneur mindset] was actually new to me. I actually have really tried to incorporate that into a lot of stuff that I am doing at [university campus] now.” (Participant #2)

She continued exemplifying how she incorporated EM into the classroom and the challenges she faced while creating new course materials, specifically assignments, that support students in developing EM learning.

“[entrepreneur] mindset was really inspirational to me. I really have tried to have my students try to use their own experiences and contextualize them into what we are talking about...so I just say [to the students], like in your experience, what are some things that you can do in your situation to help mitigate this [problem]?” (Participant #2)

“One challenge I have is creating assignments that are authentic and that require that entrepreneurial mindset.” (Participant #2)

Those quotes illustrate that besides being introduced to concepts involving EM, participant faculty were also inspired to reflect on ways to help their students learn about EM and ways to implement EM in their teaching practices.

Implications and Future Research

This work-in-progress investigated STEM faculty's perceived effect of participating in a teaching-focused book club at a university with a very high research activity. Using qualitative methods, we identified the perceived self-reported effects of participating in the book club. The outcomes included motivators such as identifying a group of faculty members who share the same goal of improving teaching and a space to share and learn from others about teaching challenges and best practices. Faculty reported their reflections on how the book club helped them to review their pedagogy, which resulted in plans to improve student-faculty relationships in the classroom and strategies to improve office hours attendance. Faculty also shared the implementation and challenges of applying EM. The preliminary findings support the advancement of book clubs as an alternative approach to faculty development initiatives. The benefits of using book clubs as professional development initiatives include having guiding material and a known structure to operate the program, which aligns participants' expectations with the program content. Book clubs also help participants identify a group of other faculty who share an interest in reading and sharing about teaching-related topics. Bookclubs create a sense of accountability in the group since each member is expected to participate during the sessions. The book club continues to be an ongoing professional learning opportunity for faculty and staff in the institution where this investigation was performed. There have been four book clubs to date, and faculty participation has increased with each one. Using the EM to design the book club supported faculty in translating the book content to the classroom. They were able to reflect on teaching strategies to improve students' curiosity in their subject and connect it to other disciplines and real life. Further research is necessary to investigate the applied learnings of the book club participation in the classroom and other ways of connecting the book club with other faculty development modalities (e.i. asynchronous meetings and short videos from specialists with book-related content) and the impact of the book club discussion questions on participants EM development. The research team intends to design similar book clubs and investigate participants' experiences to continue identifying what aspects of the book club facilitate faculty reflection and ultimate change in teaching practices.

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