Work in Progress: Let's Play — Improving Our Teaching by Reversing Roles and Being a Learner with Board Games

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Abstract

The focus of this work-in-progress (WIP) paper is on the creation and evaluation of a faculty development activity to improve teaching through reflection and empathy. Our intervention takes the form of a Faculty Learning Community (FLC) where staff and faculty participants have frequent opportunities to experience role reversal through being a learner again. Participants become active learners by playing board games that help them remember the experience of being a learner again. By choosing different types and styles of games we are able to provide a space for the participants to discuss broader teaching practices such as the importance of technical vocabulary, scaffolding ideas as we teach them, and the benefits of student-centered learning approaches. Another critical aspect of this intervention is that we hope to use role reversal to remind teachers how hard it is to learn in the hope that teachers will have more empathy for their learners.

In this paper, we describe our FLC organization, which we are conducting over the 2022-23 academic year with 9 participants and 2 facilitators. We begin by briefly describing the FLC meetings completed and planned for over this time frame, followed by a detailed description of how we are investigating the impacts of this intervention. We will present the design of our qualitative study which includes evaluating participant feedback. We are collecting feedback within each session, as well as over the complete experience. Additionally, we plan to collect data from our participants' students in their Spring semester classes to examine potential impacts made by our members' application of concepts gained through the experiences of the FLC. We conclude by describing our hypothesized expectations for this work and look forward to feedback from the community on these efforts.

Introduction

It is a major challenge to convince faculty that they should improve their teaching, and we argue that the majority of professional development for teaching is focused on the mechanics of teaching in Higher Education and includes applying small interventions to improve our teaching. We note that continued professional development is fundamental for all teachers, but the question is how can we provide the right experiences to help faculty further improve their teaching skills?

Before describing our current intervention in this space, we identify some stereotypes of faculty

and their teaching. While these stereotypes are not universally true, these ideas generalize to some weaknesses faculty experience with respect to improving their teaching. First, teachers during their own education were, typically, on the upper tier of their peers from a class performance perspective. Because of this, when faculty were learners they had a higher likelihood to attend, pay attention, complete tasks on time, and be more successful overall. Second, faculty tend to organize and teach their courses based on their previous experiences as a student in similar courses. This is a completely sensible approach as a faculty first learned the ideas and skills from a previous course, and therefore, the teaching approach has proven successful in teaching. This approach, however, should be critically evaluated, since just because they successfully learned the material from that course does not mean it is a good approach to teaching a broad audience.

In reality, to improve our teaching we need to consider how to break these teacher mindsets and look deeper into the process of teaching and learning. For this reason, we have developed a teaching intervention at Miami University that takes the form of a faculty learning community (FLC). FLCs provide a development space for faculty on their respective campuses to improve their teaching approaches [1]. Our main idea is to allow staff and faculty, in a shared learning community, to have frequent opportunities to experience role reversal by being a learner again [2]. FLC members take on the role of active learners by learning and playing modern board games to help them remember the experience of being a learner again. By choosing different types and styles of games we are able to provide a space for the participants to discuss broader teaching practices such as the importance of technical vocabulary [3], scaffolding concepts as we teach them [4], and the benefits of student-centered [5] learning approaches. Another critical aspect of this intervention is that we hope to use role reversal to remind teachers how hard it is to learn, and this, hopefully, will allow teachers to have more empathy for their learners [6].

In this paper, we describe our FLC organization, which we are conducting over the 2022-23 academic year with 9 participants and 2 facilitators. We describe the 10 FLC meetings completed and planned over the execution of the FLC. In parallel, we are investigating the impacts of this intervention, and present the design of our qualitative study which includes evaluating participant feedback. Additionally, we plan to collect student-based feedback on how FLC activities/ideas are then adopted in the participants' classrooms. Overall, our goal is to present these ideas and get feedback from the community on our approach.

Background

Our FLC intervention is driven by the idea that role reversal allows a teacher to experience being a learner again. Role reversal, in the literature, is most commonly applied to the education space in language education. Lowe is the first to suggest role reversal as an experiment with training teachers [2], and a number of researchers have extended this idea in small studies including Suleiman [7] and their personal reflection of the role reversal experience. Walter [8] looked more generally at role reversal as a training model for teachers.

Role reversal has been linked to education based on how it develops empathy first by Malkeir [6]. The importance of empathy in teaching is discussed by Jones with his case studies of teacher education in Makerspaces [9]. Meyers *et. al.* further differentiate the concept of empathy to a formalized concept of "teacher empathy" [10] which they attribute to Rogers [11]. In this

collective research space, the claim is that "teacher empathy" is fundamental to the learning process. Meyers *et. al.* provide some suggestions on how to work on improving teacher empathy by communicating empathy to students, learning about individual students, and trying to understand the social context students exist in. In a similar vane, Slater and Inagawa [12] look to role reversal as a means of bridging cultural divides that can exist between teachers and their students.

For this work, our intervention looks at how to provide a space in which teachers can experience role reversal in an attempt to increase their understanding of how hard it is to be a learner, and why some teaching approaches may help in this process.

Let's Play - FLC

Our role reversal FLC is organized around ten sessions where seven of those sessions have the FLC participants (9 staff and faculty members in 2022-23) play games taught by one of the two facilitators using relevant and varied teaching methods. After playing the game, the group gathers and discusses how it was to experience playing the game as related to certain themes in teaching.

Table 1: The seven games played and the teaching theme to be discussed

Game	**Teaching Theme**
Quoridor	- Technical Vocabulary [3] - Filtering Learning Objectives [13]
Whist	- Technical Vocabulary - Working in groups [14, 15] and competition [16, 17]
The Crew	- Working with groups and cooperation
Barnga [18]	- The cultural unwritten rules of the classroom [19]
Dominion	- Managing and experiencing complex systems - Inverted classroom [20]
Castles of Tuscany	- Increasing complexity and learning it for the first time
Grizzled	- Games and the more direct links to what we teach (history example [21])

Table 1 shows the first 7 meetings, in order, indicating the board games played and the themes they aim to highlight. Game complexity typically increases as the FLC progresses, and the hope is that progressing in this way it will help learners increase their experience in learning games. This is a longer-term scaffolding approach [4]. Each of the seven playing activities is accompanied in column 2 with some teaching theme, and we have provided citations where possible to some of these ideas.

The final 3 meetings of the FLC are focused on the participants teaching a board game to a group of 2 others, playing the game as a group, and allowing for a post-critique of the teaching to allow the teacher to get feedback on their teaching approach. We have created a protocol for this approach that we are happy to share.

One key aspect to note about an FLC is the goal is not to provide a specified curriculum that improves teachers by prescribing skills and knowledge. Instead, the goal is for a learning

community to have a focused discussion with respect to a formalized theme (as prescribed by Cox [22]), with the participants helping guide the experiences.

Proposed Evaluation of Intervention

Our FLC organization is the mechanism by which we use board games to enable and guide teachers' experiences of learning again in compartmentalized 2-hour meetings. Our overall research question as designers and facilitators is what positive impacts will the intervention have. Our third author (Dr. Bryan), was recruited to this research work to help us qualitatively evaluate our FLC, and we are presently collecting data. The key research questions we seek to answer are:

- How do teachers describe their experiences of role reversal (while playing board games) in terms of their teaching skills?
- How can role-reversal experiences inform teacher-educator practice?
- What similarities exist in the self-reflections of educators who experience role reversal?
- What are the long-term impacts of re-experiencing learning through role reversal on the self-reflections of educators?

Table 2: The plan for qualitative research of our FLC intervention

Research Activity	**Timeline**
Ethics and Integrity Office Approval	Completed - August 22nd, 2022
Written Pre-interview of participants	Completed
Written Post-interview of each activity	In collection progress
Mid focus interviews	February 2023
Pre-Student Survey	To complete as FLC implements interventions
Post-Student Survey	To complete as FLC implements interventions

Table 2 describes the qualitative data we are collecting for this intervention. The research has been approved by our Office of Research Ethics and Integrity, as it relates to human-subjects research, and currently, we are in the process of collecting data. Once the activity is complete, we plan to analyze the data observing for any emerging themes among the FLC participants and their respective classrooms.

Discussion

In this work-in-progress paper, we have described our FLC called "Let's Play: Improved Instruction through Re-Experiencing Learning using Tabletop Games". The goal of this faculty development is to further improve faculty as teachers by engaging in role reversal and critiquing each other in the role reversal capacity to gain expert insight into our teaching approaches.

The future work for this is two-fold. First, we will complete the pilot version of this FLC, we will collect our research data and will perform qualitative research to answer our research questions. Second, with feedback from various communities, we would like to evolve this faculty

development approach to a form that can be distributed on a broader scale at both our university and beyond. Our initial thoughts are that activities such as these are fun and informative and make for a powerful professional development process that can help us all become better teachers.

One final thought on this work with respect to engineering and computing education is that a key benefit of tabletop games is many of them are mathematical systems that are algorithmic in nature, which closely aligns with the systems we teach about. Initially, we were thinking that an activity such as "roller hockey" would be best suited to force teachers far out of their learning comforts. However, board games, align well with engineering and computing, and are less intimidating for faculty to even attempt to learn. Still, physical learning might be an area of future research in the space of role reversal.

References

[1] A. L. Beach and M. D. Cox, "The impact of faculty learning communities on teaching and learning," *Learning Communities Journal*, vol. 1, no. 1, pp. 7–27, 2009.

[2] T. Lowe, "An experiment in role reversal: teachers as language learners," *ELT Journal*, vol. 41, no. 2, pp. 89–96, 1987.

[3] B. A. Beyerbach, "Developing a technical vocabulary on teacher planning: Preservice teachers' concept maps," *Teaching and Teacher Education*, vol. 4, no. 4, pp. 339 – 347, 1988. [Online]. Available: http://www.sciencedirect.com/science/article/pii/0742051X88900327

[4] J. A. Winn, "Promises and challenges of scaffolded instruction," *Learning Disability Quarterly*, vol. 17, no. 1, pp. 89–104, 1994.

[5] D. Kember and D. Murphy, "Alternative new directions for instructional design." *Educational Technology*, vol. 30, no. 8, pp. 42–47, 1990.

[6] B. Malkiel, "Developing empathy through role reversal: A personal case study," *English Language Teacher Education and Development*, vol. 21, pp. 10–15, 2018.

[7] Y. Suleiman, "On being a learner again: An experiment in role reversal," *al-'Arabiyya*, pp. 29–49, 1992.

[8] O. Walter, "The effects of the 'role reversal approach'on teacher training models," *Support for Learning*, vol. 25, no. 3, pp. 122–130, 2010.

[9] W. M. Jones, "Teachers' perceptions of a maker-centered professional development experience: A multiple case study," *International Journal of Technology and Design Education*, vol. 31, no. 4, pp. 697–721, 2021.

[10] S. Meyers, K. Rowell, M. Wells, and B. C. Smith, "Teacher empathy: A model of empathy for teaching for student success," *College Teaching*, vol. 67, no. 3, pp. 160–168, 2019.

[11] C. R. Rogers *et al.*, *Freedom to learn: A view of what education might become*. Merrill,, 1969.

[12] S. Slater and M. Inagawa, "Bridging cultural divides: Role reversal as pedagogy," *Journal of Teaching in International Business*, vol. 30, no. 3, pp. 269–308, 2019.

[13] G. P. Wiggins, J. McTighe, L. J. Kiernan, and F. Frost, *Understanding by design*. Association for Supervision and Curriculum Development Alexandria, VA, 1998.

[14] W. Stepien and S. Gallagher, "Problem-based learning: As authentic as it gets," *Educational leadership*, vol. 50, pp. 25–25, 1993.

[15] L. K. Michaelsen, L. D. Fink, and R. H. Black, "What every faculty developer needs to know about learning groups," *To improve the academy*, vol. 15, no. 1, pp. 31–57, 1996.

[16] P. Jamieson, "Early project based learning improvements via a star trek engineering room game framework, and competition," in *Frontiers in Education Conference , 2011*, oct. 2011, pp. S4H–1 –S4H–5. [Online]. Available: http://www.drpeterjamieson.com/html_papers/fie_11.pdf

[17] R. R. Murphy, "Using robot competitions to promote intellectual development," *AI Magazine*, vol. 21, no. 1, pp. 77–90, 2000.

[18] S. Thiagarajan and B. Steinwachs, "Barnga," *A Simulation Game on Cultural Clashes*, 1990.

[19] P. Jamieson, L. D. Grace, N. Mizuno, C. Bell, and D. Davis, "A simple multi-player video game framework for experimenting and teaching cultural understanding," in *Proceedings of the 20th International Academic Mindtrek Conference*, 2016, pp. 422–425.

[20] M. J. Lage, G. J. Platt, and M. Treglia, "Inverting the classroom: A gateway to creating an inclusive learning environment," *The Journal of Economic Education*, vol. 31, no. 1, pp. 30–43, 2001. [Online]. Available: http://www.jstor.org/stable/1183338

[21] A. I. Rajkovic, M. S. Ruzic, and B. Ljujic, "Board games as educational media: Creating and playing board games for acquiring knowledge of history," *IARTEM e-journal*, vol. 11, no. 2, 2019.

[22] M. D. Cox, "Introduction to faculty learning communities," *New directions for teaching and learning*, vol. 2004, no. 97, pp. 5–23, 2004.