

# **Lessons learned - Conducting an External Evaluation of a STEM Teaching and Learning Center (Lessons Learned Paper #1 of 2)**

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## **Lessons learned - Conducting an External Evaluation of a STEM Teaching and Learning Center (Lessons Learned Paper #1 of 2)**

This Lessons Learned paper explores the external evaluation of a STEM-focused Center for Teaching and Learning (CTL) from the perspective of the evaluators.

### **Background and Rationale**

In 2020, an external evaluation was conducted of a STEM-focused Center for Teaching and Learning (which we will refer to as The Center in this paper) located in the western United States. Two of the authors (Cutler & Zappe) work in a different engineering-focused center for teaching and learning and collaborated with the director and staff within The Center to identify key stakeholders and questions used to guide the evaluation. The purpose of this paper is to discuss the approach that was taken for the external evaluation, along with the lessons learned from this approach. Our co-authors within The Center have submitted a corresponding parallel paper that details the findings from this evaluation, from the perspectives of members of The Center (Jordan et al., 2022). The process of conducting the evaluation and the results may be of interest to those working in teaching and learning centers who have conducted or have considered conducting an external evaluation.

CTLs provide professional development to faculty, typically focusing on teaching and learning. One of the challenges for CTLs is determining the impact on the institution, on faculty practices, and ultimately on student learning. Additionally, it is often challenging to gather unbiased formative feedback on what should be changed or improved about services offered (POD Network, 2016). To address these concerns, the Director of The Center reached out to us about completing an external evaluation. As faculty within a different engineering-focused CTL, we were excited by the opportunity to complete this evaluation, as we felt that conducting the evaluation would be valuable for our own work in faculty development.

Details for each of these steps are included in this paper, as well as key lessons learned by the evaluation team. A second paper (Jordan et al., 2022) will explore the findings and the lessons learned on the evaluation from the perspectives of the members of The Center.

### **Initial conversation, scoping, and goals for the evaluation**

Initial conversations with The Center on the evaluation began in 2019. The evaluation team was first approached at the 2019 ASEE Conference. The team then visited The Center in the fall of 2019 to generate a more specific plan for the evaluation. The time spent during the meeting was used to generate guiding evaluation questions, identify stakeholders, and possible data sources. In addition, further opportunities for collaboration were identified. Over ten different areas for evaluation and other projects were identified before shifting the conversation to prioritizing certain areas for immediate evaluation versus future evaluation projects. Ultimately, the team decided to explore five specific projects, three of which pertained to the external evaluation. These are described below:

*Project 1: Evaluation of the unexpected impacts of The Center.* The purpose of this project was

to understand how The Center impacted the university in unexpected ways, outside of teaching-related outcomes. This question was being explored as The Center employees recognize that they are often asked to participate in events, committees, and meetings for parallel units on campus that are not directly or are peripherally related to teaching. Stakeholders identified as related to this project included administrators on the university's executive committee and from parallel units.

*Project 2: Study of the baseline administrative perspectives of effective teaching.* The purpose of this project was to conduct an interview study of the university's administrators to gather perceptions about the impact of The Center and perceptions of effective teaching. While both formative and summative information about the impact of The Center was planned to be collected, one of the key take-aways from the interviews will be how administrators define effective teaching and how well this aligns to the newly developed framework being used by The Center. Stakeholders related to this project included the administrators on the university's executive committee and department heads.

*Project 3: Study of the baseline faculty perspectives of effective teaching.* The purpose of this project was to conduct a qualitative study of the university faculty, identified by The Center, to gather perceptions about the impact of The Center and perceptions of effective teaching. As with the approach for Project 2, while both formative and summative information about the impact of The Center would be collected, an additional purpose of the interviews was how faculty defined effective teaching and how well it aligned to a framework of effective teaching that was being developed by The Center.

The overall evaluation approach is summarized in Appendix 1.

## **Evaluation Methods and Timeline**

The primary approach for the evaluation was in-depth interviews with members from the three different stakeholder groups: administrators, department heads, and faculty. Interview protocols were developed by the evaluators (who had extensive experience with qualitative data collection and analysis) and then shared with The Center team for feedback and revision. Two separate protocols were developed – one for department heads and faculty and a separate one for the administrators. A semi-structured interview approach was utilized, which allowed for consistency across the interviews as well as the ability to follow-up with the interviewees to clarify or expand upon their thoughts.

Due to COVID-19, the Department Head and Faculty interview protocol was adapted to include questions about the emergency transition to remote teaching and The Center's role in the transition and the impact of the transition on perceptions of effective teaching. In addition, individuals in leadership who had already been interviewed when the pandemic began were asked to respond to

additional questions that related to the influence of the pandemic on their impressions of The Center.

The timeline for data collection is shown in Table 1. A total of 47 interviews were conducted: 9 administrators, 18 department heads, and 20 faculty members.

Table 1. Evaluation Data Collection Timeline

<b>Data Collection Interviews</b>	<b>Jan-March 2020</b>	<b>March-June 2020</b>	<b>June-August 2020</b>
Administrators (n=9)			
<i>COVID Pivot</i>		Emergency Transition Pause Data Collection	
Department Heads (n=18)			
Faculty (n=20)			

To aid in data collection, an additional consultant was hired by the external evaluators to conduct the faculty interviews during the summer of 2020. All interviews were transcribed and thematically coded by the external evaluators using N-Vivo.

Results were summarized into a comprehensive report for The Center broken out by project; the report also included an executive summary and a follow-up summary table to help to facilitate interpretation of the data. Multiple post-meetings were held between the evaluators and The Center to discuss the results and next steps.

As mentioned above, the findings for this evaluation are discussed in the parallel paper (Jordan et al., 2022).

### **Lessons Learned by the Evaluation Team**

*Lesson #1: Expect the Unexpected.* One of the key challenges faced with this evaluation was the sudden onset of the COVID-19 pandemic just as the evaluation team was preparing for the department head and faculty interviews. The pandemic upended the lives of the evaluation team, with personal needs such as childcare and shifting to remote work, which forced a delay in the overall project work.

This pushed back our timeline for data collection and required us to revise the interview protocol. Additional items about the transition to remote teaching and the impact of the pandemic on perceptions of effective teaching.

Therefore, our first “Lessons Learned” from this evaluation is: *When conducting an evaluation of a Center for Teaching and Learning, it is important to be adaptable and willing to pivot.* While the COVID-19 pandemic was a clear disruption to the original plan, there are a variety of changes that Centers may be working with and considering during normal times. For example, around the time the evaluation ended, the founding director of The Center transitioned to a new role within the University. At our own University, a new strategic plan has been announced that would change much of the focus within our Center. For an evaluation that is scheduled over an extended time period, it is important to critically reflect at the start of each new phase to ensure that the evaluation

results will continue to align with the goals of The Center. While hopefully disruptions as major as the COVID-19 pandemic will not occur again in the near future, smaller disruptions can also require adaptation and flexibility.

*Lesson #2: Snapshot in Time.* Tied to the idea of pivoting, but thinking more longitudinally, it is important to recognize and understand that any evaluation takes place at a specific moment in time. During initial planning discussions with The Center, there was a general sentiment that most of the university faculty and administrators would likely be aware of The Center, but might not be acquainted with specific details or services. However, after the COVID-19 pandemic started, this sentiment changed as The Center was critical in supporting faculty in the shift to emergency remote teaching. The administrator interviews all took place prior to the start of the pandemic, requiring us to collect additional data as sentiments may have changed. Data from faculty and department heads likely yielded quite different perceptions than they would have if the interviews had been conducted several months prior.

Therefore, our second lessons learned is: *Data collected during any point in time may only be pertinent to stakeholder sentiments from that specific time period.* Thus, evaluation data may need to be collected periodically to measure changes in perceptions, to determine the impact of new initiatives, and to account for other larger-scale societal changes, such as the major disruption of a pandemic or perhaps smaller-scale changes such as an increased emphasis on using online learning tools.

*Lesson #3: Stuck in the Middle.* As discussed in more detail in the parallel paper, one interesting finding that emerged in the evaluation were the differing perspectives of the stakeholder groups.

We found that the administrators from the executive committee tended to have a holistic perspective on the goals and responsibilities of The Center, while faculty focused on the “nuts and bolts” of the services offered by The Center. Department head perspectives were somewhere in the middle. They were less regularly in meetings where the broader goals or leadership of The Center were discussed but did not typically reach out to The Center for assistance in their day-to-day activities beyond referring faculty to The Center. In addition, some department heads were more supportive and positive than others in their perceptions of The Center. One of the lessons learned from the evaluation is that the department head role is critical for creating advocates for CLTs.

*Lesson #4: Benefits for us!* One of the really exciting things about conducting the evaluation is that we became very familiar with the services and approaches that The Center used. This was often very helpful for our work in our own CTL. Both the frequent meetings with The Center employees and the interviews with the stakeholders both allowed us to learn new ideas and new approaches that we had not previously used in our CTL. In addition, as both Centers were navigating the new role of providing faculty support for emergency remote teaching, we often traded and shared strategies and approaches. We often discussed different workshops that we were holding or ideas on how faculty can utilize more active approaches in a remote setting. These tips and strategies have been helpful as we continue to pursue different but similar goals in supporting faculty teaching. Additionally, we also are considering conducting our own external evaluation of our CTL in the upcoming months.

One additional benefit is that we now have a clear partner in faculty development initiatives between our two respective CTLs. We continue to meet regularly to discuss different projects and are considering ways that we can formalize our relationship through additional projects or grants. Having a strong partner with a similar mission has been invaluable, a benefit that we did not expect when we originally began in our role as external evaluators.

### **Moving Forward**

From this external evaluation experience and the lessons learned, we have a few thoughts around future work.

First, we are exploring the option of conducting a similar external evaluation of our own center. The results and potential implications for The Center have made us curious about the similarities and differences in perceptions of the two CTLs. As we are at a point of transition to a new Director, an external evaluation could help to inform directions moving forward.

Second, we have also explored the adaptability of the results from The Center's evaluation to our center's practices. For example, how are we communicating with Department Heads? Do they have a clear vision of our center? Questions for our external evaluation.

Finally, we hope to potentially revisit the external evaluation of The Center to capture progress made in The Center's initiatives and explore the similarities and differences captured at a different snapshot in time, again, especially as they are also at a point of transition to a new Director. For more information about the evaluation, please feel free to contact the author team.

### **References:**

Jordan, D., Spiegel, S., Sanders, M., Cutler, S., & Zappe, S. (2022). Lessons Learned: Findings from an External Evaluation of a STEM Teaching and Learning Center (Lessons Learned Paper #2 of 2). American Society for Engineering Education Annual Conference & Exposition, Minneapolis, MN.

POD Network (2018). *Defining what matters: Guidelines for comprehensive center for teaching and learning (CTL) evaluation*.  
[https://podnetwork.org/content/uploads/POD\\_CTL\\_Evaluation\\_Guidelines\\_2018\\_.pdf](https://podnetwork.org/content/uploads/POD_CTL_Evaluation_Guidelines_2018_.pdf)

**Appendix 1.**

