

Supporting Learner Variability in the Classroom through Micro-Credentials

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April 2019

INTRODUCTION

Educators welcome an incredibly diverse set of students into their classrooms daily. Every student brings a unique background, set of experiences, interests, strengths, and challenges. The role of the educator is to understand this variability and account for it while teaching complex curriculum in a way that each student feels supported and successful in school. Accomplishing this is not easy. This is why understanding learner variability is key for educators—it empowers them to make intentional choices designed for each learner.

Learner variability, by definition, must account for the whole child. It implies knowing not only students' academic abilities but also their strengths, challenges, emotions, and background characteristics that influence learning. The recognition that variability exists among learners in the classroom can lead to different decisions being made on how to design classroom environments to support learning. When we understand learner variability in this way, classroom challenges become a design problem, not a student problem.

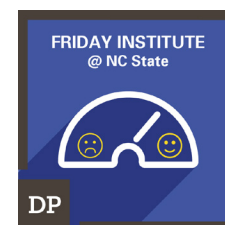
In order to design our classrooms to meet the needs of our learners, educators must first understand the ways in which learners vary. Equally critical is incorporating this understanding into supporting learners in the classroom. The Friday Institute for Educational Innovation and Digital Promise Global's Learner Variability Project (LVP) have committed to building teachers' capacity to address learner variability in their classrooms. We built a set of nine micro-credentials aligned with the LVP Navigator:



Attention



Auditory Processing



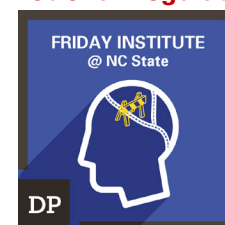
Emotional Regulation



Inhibition



Relationship Skills



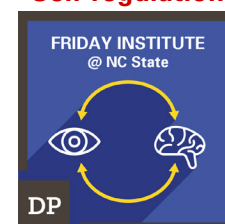
Self-regulation



Social Awareness



Speed of Processing



Visual Processing



In these micro-credentials, teachers identify one student to work with and assess that student's strengths and challenges as they relate to the micro-credential's focus area. Using the student's strengths and input, the teacher identifies a set of strategies to support the student's needs and implements them, providing evidence of the strategies in action. Both the student and teacher then reflect on the experience. For example, if a teacher is working with a student who has a strength in relationship skills but a challenge in attention, the teacher could submit the Attention micro-credential with this student and choose to use a strategy that takes advantage of the students' ability to effectively relate with others.

As we build teachers' capacity to effectively support learner variability in their classrooms, we thought it was important to get a sense of how educators around the country are using micro-credentials in practice to better understand and support each learner in their classroom. We studied twenty-one successful submissions for the Attention micro-credential. We reviewed the submissions in order to identify common themes in the teachers' micro-credential submissions. In the process, five themes emerged:

Common Themes in the Teachers' Micro-Credential Submissions



TEACHER AS RESEARCHER

collecting and using data to determine the best instructional approach



USING EMPATHY

listening and being empathetic to understand students' emotional needs



LEVERAGING PEERS

using peer influence strategically to support students



STUDENT/TEACHER METACOGNITION

using self-reflection to guide improvements



STUDENT OWNERSHIP

allowing space for students to take ownership of their academic strengths and challenges



TEACHER AS RESEARCHER

Often, professional learning focuses on teaching educators one specific strategy rather than working with educators to evaluate the needs of students and to identify the best practices to address them. In the micro-credential submissions, there was consistently evidence of teachers challenging this norm and becoming teacher-researchers to better understand and support the variability among their learners.

A teacher-researcher considers information from a variety of sources in order to understand the full picture. After the data is collected, the teacher implements strategies based on the evidence collected. As one teacher explained:

I am a firm believer that in order to treat or find a solution you have to understand the full picture. Each student is [an] individual and the reason that student is having trouble focusing may be entirely different from another student who had trouble focusing.

Teachers meticulously collected information from and with students to understand exactly what was happening with their students. As a result of this understanding, teachers were able to implement strategies specifically designed for the targeted students' attention strengths and challenges.

For example, one teacher conducted seven observations over five weeks. She collected evidence about the percent of time the student was on and off-task, the type of instruction that was occurring, and the setting of the observation so that she could better understand the specific conditions under which the learner had a challenge related to attention.

Another teacher used data to reconsider what she thought she understood about her student. In the process of investigating what she initially believed to be an attention-related issue, this educator found that "her slow work completion was not a result of inattention. [I]t was due to slow processing of information, particularly with higher level concepts where sequencing and multiple steps are involved to solve problems." Rather than base her perceptions on anecdotal information, the teacher collected data and, through careful consideration of the details, correctly identified the student's needs.

As they thought deeply about learner variability in attention, teachers went beyond initial impressions about student behaviors and relied instead on observable, verifiable information to leverage their students' strengths and support their attention. Educators are constantly collecting data. In these successful micro-credentials, educators used this data strategically to understand their students and then redesign instruction.



USING EMPATHY

Empathy is key to improving a teacher's capacity to understand different students' needs so that they may make better instructional decisions on behalf of their learners (Ladson-Billings, 2006). In the Attention micro-credential, educators demonstrated empathy for the variability of their learners in various ways. For example, teachers asked authentic questions and gauged reactions from students to identify what worked best.

Empathy also played a role in keeping teachers motivated in the challenging work of supporting a variety of learners. Often, teachers noted the positive ways student success empowered them to continue their work. One teacher put it this way:

The best part about leveraging the student's strengths was that it made addressing the attention challenges a positive process. It felt good to be able to address the issue proactively and provide strategies that the student enjoyed using and achieve success.

Another educator shared a moment when she supported a learner through an emotional crisis. This moment was a fitting capstone as the teacher and student had been working together to counteract the student's negative self-concept that resulted from her years of difficulty in school due to her attention-related concerns. The teacher wrote "Seeing a student who typically struggles finally feel good about herself and feel successful is something that every educator strives for."

Educators often rely on instructional expertise and use it to support their students. Taking a step back to be empathetic with students can make the strategies more successful and help teachers to better understand and, therefore, support each learner.





LEVERAGING PEERS

Teachers frequently used peers strategically to support students' attention. Often this strategy emerged because the targeted student exhibited strengths in relating to his or her peers. For example, one teacher working with a student who exhibited frequent off-task behavior explained "[M]y student is fairly active and social. I am going to try to tap into both of these with my strategies." This teacher gave this student the role of "direction explainer" so that he would listen

and internalize the directions before explaining them to a peer with more significant learning needs. The student explained it this way:



[My teacher] also gave me a new job. After she gives directions, I have to explain them to another kid in class. This boy doesn't understand things very well, so I help by telling him what to do before he starts working. This helps him know how to do his work. It also helps me because I know I have to listen to [the teacher's] directions. If I don't, I won't be able to help the boy who I am supposed to help. I like helping him because it gives me a chance to talk and also I feel smart when I do it.



Other educators knew that peer involvement or pressure can be a negative force for student learning and used that information wisely. For example, one speech pathologist, working with a self-conscious learner, noted the importance of choice in fostering adoption of the strategy:



Since SJ is self conscious about her learning difficulties and doesn't want to look different than her peers in class, I felt that it was important to have her decide what strategy she felt most comfortable and motivated to implement.



This student was able to choose a strategy that she felt would not draw attention from her peers. She felt supported by her teacher and was invested in the strategy. Many of her peers brought water bottles, so attaching an image or note to her bottle was a subtle way to remind her to pay attention without drawing attention to her.

Both of these examples highlight the importance of knowing your students in order to select the best strategies. Leveraging peers effectively to support learners only works if you know your student and the way they relate to their peers. Leveraging peers effectively to support learners only works if you know your students and the way they relate to their peers.

Student Reflection

Student's Initials: S J
What strategy for attention did you choose to use in the class?

Water botel Keep on track!

Why did you pick this strategy?

Because water is good for your brain and helps you focus.
I did not have a water botel for school.

Do you think it helped you? ☒ yes ☐ no

How does it help you? When I look at my botel the teacher helps me to focus and pay attention to the teacher. Math is my hard. I looked out the window. now I drink some water. It helps me get back on track.

Why do you think using this strategy helped? My water bottle is always on my desk. I just finished a book for silent reading.

Did you use the strategy outside of school? I can use it at home for home work.



STUDENT AND TEACHER METACOGNITION

Metacognition is critical for learners of all ages to reflect on their progress and learning and to understand their own learning variability. In the Attention micro-credential submissions, we saw examples of both students and teachers using metacognition through self-reflection.

After implementing a strategy for her student, one educator reflected on how the strategy supported the targeted student but hindered many other students in the process.



Work time timer and share sessions: This helped my attention-challenged student but didn't work well for the class overall. I wanted it to be part of the classroom structure so my attention-challenged student wouldn't be singled out, but it was disruptive for other students (the typically focused workers). To make this better in the future, I may have to only use the technique with my attention-challenged student. I could set a quiet (vibrating or visual) timer for him, and when it goes off he could come to my desk to show me what he's gotten done.



This teacher used self-reflection to realize that her efforts to meet this individual student's needs undermined her goal of meeting each student's needs. Metacognition helped her refine her practice and think about how to best meet the needs of all of her students. Instead of using a whole class approach, this teacher realized a more covert signal could effectively meet the needs of the targeted student without compromising the overall focus in the class. As a result, she used a personal timer on her student's desk and worked it out so that he came and showed her when the timer went off. This met his needs and allowed her to meet the needs of all of her learners.

Through metacognitive reflections, students also improved their awareness and understanding of their own learning process. One high school student and her teacher created a plan to use a checklist to self-monitor when she was on-task and off-task. Every five minutes, she made a note of whether or not she was paying attention and what was happening in the class. She reflected:

With the checklist, I have been more conscious of my distractibility and have been more focused overall. I have been better at catching myself when my thoughts start to wander and refocusing on the teacher.

Based on this initial reflection, it would appear that the checklist was a success. She was able to check in and fill out the paper and take note of what was going on. However, she also noted:

Although the checklist helped me to focus if I was unfocused, having to assess every five minutes was distracting if I was already focused on what the teacher was saying or I was completing my homework in class.

Through her metacognitive approach, she realized that, while the strategy "worked" insofar as she was able to complete the checklist, it had an adverse effect on her thinking in class. Rather than helping her focus, it made it more difficult for her to pay attention, making the strategy counterproductive. Through this reflection on the part of the student and the open communication between the student and teacher, the teacher was able to iterate on the plan until the student felt successful.

These examples show that metacognition fosters self-awareness so that students and teachers alike are cognizant of their strengths and challenges and are then better prepared to act in the future taking this new information into account.



STUDENT OWNERSHIP

“Students who own their learning can go beyond simply following teacher directions. They are more likely to complete complex assignments, solve problems that require persistence, and create original or novel work of high quality” (Conley & French, 2014, p. 1019).

As the educators who submitted the Attention micro-credential went through the process, many found that partnering with students ultimately enabled their students to take ownership of the strategy and to use it in other contexts, both in and outside of school. As one educator found:



[The student] thought that the checklist might be helpful to use now at home when she is completing homework after school and in the evening, which is when she struggles more with focusing.



And teachers were not the only participants who remarked on taking ownership. One student reflection highlighted his ability to take ownership of the strategy and then modify it for use in another context:



I had never thought to do this [recording class], and I can't believe what a difference this has made. I am actually excited about it because I'm going to high school next year, where I'll be attending several different classes (as opposed to block scheduling), and the pace will be much quicker. I think this strategy will make a big difference in my learning and understanding of the classroom material.



Student ownership is important for the sustained success of students personally and academically. If we as educators do all of the work to support our students, they will not easily build their skillset to support themselves as individual learners. Giving students ownership and encouraging them to modify, adapt, and propose new strategies is critical for fostering life-long learners who are well-equipped to be successful in the future.

RECOMMENDATIONS FOR EDUCATORS

The submissions we received as part of the Attention micro-credential revealed a lot about how teachers are designing learning experiences to meet the needs of all learners. Even though the classrooms were as unique as the students that fill them, we saw common themes. Teachers acted as researchers by collecting evidence in order to determine the best strategy, and they used empathy to understand students' emotional as well as academic needs. They leveraged peers in the classroom to support students as it suited their students' needs, and both teachers and students engaged in metacognitive thinking in order to guide self-improvement. Finally, students took ownership of the strategies, often making them even more successful. What was clear is that the Attention micro-credential, and by extension the Learner Variability stack of micro-credentials, helped teachers address individual student needs.

Educators working to more deeply support learner variability in their classrooms can take a few lessons from these examples:

- 1. Take time to understand your student.** This might happen one student at a time or through a class-wide survey. Take the time to understand all of your students holistically—including their strengths and their challenges.
- 2. Focus on the strengths.** It's easy to get caught up in noticing the areas in which our students struggle. Taking time to understand, and then leverage the areas in which students excel, can help everyone feel better about the process.
- 3. If at first you don't succeed, try, try again.** Rather than focusing on one strategy, keep collecting data to finetune the approach. As with everything in the classroom, meeting the needs of your individual students is an iterative process and one that will constantly evolve. Rather than think of learners' variability as a burden, consider it a dynamic challenge that you and your students can work toward collaboratively.
- 4. Take time to reflect.** Taking time to think about what's working and why it's working is critically important. Involve your students and encourage them to engage in self-reflection to foster the habit of continuous improvement.
- 5. Involve your students and follow their lead.** Rather than doing strategies to your students, consider talking with your students to create a plan based on their interests and then enacting that plan. Check-in frequently to assess how it's going and how you can work together to improve the approach. Following students' lead and trying out strategies they suggest will encourage them to think metacognitively and develop their skills related to student agency.

Micro-credentials provide opportunities to get to know your students and encourage them to get to know themselves as learners. The process makes you a partner with them in creating learning environments that address learners' needs, leverage their strengths, and empower them to reflect and adjust as needed. Micro-credentials are one important way we can ultimately meet the needs of all learners.



The Friday Institute for Educational Innovation

Since 2007, the Professional Learning and Leading Collaborative (PLLC) at The Friday Institute for Educational Innovation at North Carolina State University has emphasized

leadership in and promoted pedagogical shifts to personalized and digital learning in order to inspire, innovate and coach. We engage educators at all levels to provide research based, job-embedded models and approaches for strategic planning and professional development with the belief that all students deserve access to equitable, personalized learning experiences. For more information visit pllc.fi.ncsu.edu.



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About the Learner Variability Project

Digital Promise Global's [Learner Variability Project](#) translates learning sciences research into accessible learner models through its free, open-source web app, the [Navigator](#), for designing products and practices that meet the needs of diverse learners. Its interconnected framework begins with factors under four pillars of learning: Content, Cognition, Social and Emotional Learning, and Student Background. The project surfaces research-based strategies that support the factors with the goal of informing design and practice.

Sources cited

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Suggested Citation: Acree, L., Lindsay, K., Nobles, S., Pape, B., Lindsay, K., Wolf, M. (2019). Supporting learner variability in the classroom through micro-credentials. The Friday Institute for Educational Innovation. Retrieved from go.ncsu.edu/supportinglearnervariability.