



## Mathematics Learning Centers – Not Just for the Elementary Classroom

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## Mathematics Learning Centers – Not Just for the Elementary Classroom

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### Abstract

Given the recent trajectory of secondary mathematics performance in the United States, as compared to international counterparts, this design and development case study aimed to explore the varied pedagogical practice and its impact on mathematics proficiency. This study sought to improve mathematics proficiency through varied instructional practices. During one algebra unit, two instructional modalities were employed, by the same instructor, to two separate groups of students. Quantitative measures were captured through the descriptive statistics of Pre-test, Post-test, and Reaction Survey results. The Kirkpatrick Model (Level I and II) was also employed. In addition, qualitative data were obtained through Researcher Notes, Researcher Experience Journal, and Participant Journals. Findings suggested the effectiveness of a learning center pedagogical design, including peer collaboration, technology, and small group, as it yielded higher proficiency than traditional direct instruction. Pre- to Post-Test scores revealed a 1.727 higher mean growth in the experimental group over the control group (Culleny, 2021).

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### Introduction

Regardless of outcome, lecture and direct instruction tend to be the default instructional practice of mathematics teachers across all grade levels (Achuonye, 2015). Despite high incidents of student passivity, this model of instruction is often favored for its organization and efficiency; it allows for a substantial amount of information to be delivered in a restricted amount of time. However, the efficacy of these traditional models of mathematics instruction are to be questioned. For nearly 25 years, over 70 countries have taken part in the Programme for International Student Assessment (PISA). This assessment evaluates 15-year-old students in the areas of mathematics, science, and reading on a three-year rotation. The most recent assessment was conducted in 2022. Results from the United States revealed the lowest mean mathematics performance in their PISA history, further highlighting a declining trend since 2003 (OECD, 2023). The United States currently ranks below the OECD average performance in mathematics. More than a comparison of international teenagers' test results, these measures of proficiency are known to have notable implications. Countries with emerging economies rely heavily on mathematics proficiency for career mobility and societal advancement (Bosman & Schulze, 2018). Furthermore, performance in this subject area has correlated to a student's future earning potential, thus emphasizing importance far greater than school success (Bregant, 2016; Sharp, Bonjour, & Cox, 2019). As such, researchers are on a continual quest for teaching methods that promote more equitable student understanding (Boaler, 2002).

The National Council for Teachers of Mathematics (NCTM) has called for changed pedagogical practice to support all students' learning. These recommended efforts include shifting from a procedural focus with fact recall to that with improved conceptual understanding, application, and problem solving (NCTM, 2014). Rules, memorization, and regurgitation often associated with a mathematics teacher's direct instruction fail to promote discovery, collaboration, or reasoning (O'Meara, Fitzmaurice, & Johnson, 2017). Traditional mathematics instruction provides limited opportunities for students to process; alternatives are needed to aid students' connection of procedures and concepts (Alam, Zaman, & Khan, 2014).

Following two of NCTM's six *Guiding Principles for School Mathematics*, best practices within mathematics must focus on teaching and learning, as well as tools and technology. "An excellent mathematics program requires effective teaching that engages students in meaningful learning through individual and collaborative experiences that promote their ability to make sense of mathematical ideas and reason mathematically" (NCTM, 2014, p. 5). In addition, "an excellent mathematics program integrates the use of mathematical tools and technology as essential resources to help students learn and make sense of mathematical ideas, reason mathematically, and communicate their mathematical thinking" (NCTM, 2014, p. 5). Both of these principles mirror the need for mathematics students to cultivate their creative problem solving skills (Peters, Kruger, & Fitzpatrick, 2018).

Converse to the teacher-centered approach of direct instruction, mathematics calls for a more active, student-centered modality. One such model can be found through learning centers. Also known as learning stations, centers provide students with the opportunity to work collaboratively on various activities within a given class period (Aydogmus & Senturk, 2019). This model of instruction allows for differentiated opportunities, specifically in the area of learning processes (Badger, 2016). As defined by Tomlinson (2014), differentiating the learning process allows for students to make sense of content through varied presentation. Learning center instruction allows students to experience multiple learning opportunities, all surrounding the same content or skill. Centers might be designed in accordance to preferred learning styles or to appeal to multiple intelligences. By rotating through each center, students experience various conditions for a focused objective. While limited to implementation within elementary classrooms, mathematics learning center research has suggested increased student reflection and autonomy (Badger, 2016), as well as improved confidence with mathematical literacy and problem solving (Pho, et al., 2021). Tangential to the active learning found within center-based instruction, blended learning has also proven effectiveness. This model integrates technology and e-learning with the traditional classroom (Lin, Tseng, & Chiang, 2017). When implemented within the mathematics classroom, the blended learning model has revealed improved students' mathematics achievement and attitude (Awodeyi, Akpan, & Udo, 2012). Combining learning centers with blended learning has also suggested increased curiosity and active learning (Mahalli, et al., 2019).

### **Purpose of the Study**

As suggested by Achuonye (2015), methodology is a key contributor to teaching and learning problems that surface through students' academic struggles. A model of instruction that is found effective in one subject area may not be effective in another (Achuonye, 2015; Bosman & Schulze, 2018). Furthermore, education often

follows a cyclical pattern as teachers tend to teach based on their own learning experiences (O'Meara, Fitzmaurice, & Johnson, 2017). Given current shortfalls of mathematics performance within the United States, there is an evident need for more effective teaching practices. Prior studies have explored the impact of learning centers within a variety of primary grades. However, the instructional model has limited exploration within mathematics and higher levels of education (O'Meara, Fitzpatrick, & Johnson, 2017; Truitt & Ku, 2018; Aydogmus & Senturk, 2019). As such, the purpose of this study was to determine if upper-level mathematics instruction through learning centers yielded higher proficiency than traditional, direct instruction.

## **Method**

A qualitative design and development case study was employed within a mathematics course at a northeast American public university. This research method was chosen for its alignment to practical application, the researcher's ability to serve in a dual role as practitioner and researcher, and the potential to generalize through interpretation and inference (Richey & Klein, 2007). The study's traditional instruction and learning center instruction were defined, designed, and implemented by the researcher. The control group was taught a three-week algebra unit through the means of traditional instruction; the experimental group was taught the same mathematical standards through a learning center modality. Traditional instruction consisted of a direct model inclusive of a gradual release of responsibility from instructor to student. Teacher modeling of new concepts was followed by guided practice and then independent practice. Conversely, learning center instruction revolved around three separate pedagogical approaches. Following a brief concept introduction to the whole class, students were broken into three small groups. Each group visited each center once, rotating every 30 minutes until all three centers were completed. One center presented the week's concept through technological means: interactive and responsive online programs, graphing technology, and visual representations. A second center consisted of higher-level thinking problem sets which required student collaboration and verbal discourse. A third center involved small group instruction, for needed enrichment or intervention, with the instructor (practitioner researcher). The goal of the study was to determine if nontraditional mathematics instruction could improve student proficiency in grades outside of the elementary level.

## **Research Questions**

The study sought to answer three questions: How were learning centers designed and developed? What is the comparison of students' mathematical proficiency following traditional, direct instruction versus that following learning center instruction? What differences existed between the control group and experimental group as a result of their learning experiences?

## **Sample**

As common with design and development methodology, a convenience sample was employed (Richey & Klein, 2007). All 42 participants were enrolled in the same mathematics course, focusing on numerical operations, algebra, geometry, and data-analysis, at a mid-sized public institution in northeast United States. As a fulfillment

option for their major's mathematics requirement, students self-enrolled in the course approximately six months before the study. Each week, the course met in person for two hours, followed by two hours of asynchronous learning, practice, and reflection. Both sections of the course met on the same day of the week, one immediately following the other. All students in the course were liberal studies majors with a concentration in either early childhood or elementary education. Students ranged from 18 to 30 years of age but were all within their first two years of an undergraduate program. The first course section ( $n = 19$ ) was assigned as the study's control group. Within this group, 18 students were female, and one was male; 74% were White, 21% were Hispanic, 5% were African American. During the three-week algebra unit, instruction was delivered to this control group via traditional, direct instruction. The second course section ( $n = 23$ ) was assigned as the experimental group. Within this group, 22 students were female, and one was male; 66% were White, 17% were Hispanic, 13% were Asian American, 4% were African American. During the same three-week unit, instruction was delivered, by the same instructor/practitioner researcher, via a learning center model.

### **Data Collection and Analysis**

Data were collected throughout a three-week unit on algebraic concepts which was taught from the fifth to the seventh week of a 15-week semester. Instruction focused on expressions and equations, properties of exponents, solving linear equations and inequalities, factoring, and linear graphing. Over the course of the study, six instruments were implemented. The first instrument, administered prior to the study's instruction, consisted of a 15-question, multiple choice pre-test. All test items were aligned to those from released questions on the state's standardized certification assessment. The purpose of this instrument was to document students' foundational knowledge of algebraic concepts. Students took the pre-test during class and were timed in accordance with the limits of the actual standardized assessment. One point was allocated for each correct answer.

The study also relied on three instruments implemented during the three-week instructional period. The first was student-generated in the form of a Participant Learning Journal. Following each week's in-person class, students documented their learning progress and experiences within an online, anonymous journal. While open-ended, participants were prompted with several questions to guide their 200-word, first-person narrative. Prompts included the following: (1) Do you understand the concepts that were discussed in this week's lesson? (2) Would you feel confident teaching another person the new concepts or do you need more instruction? (3) Did you take advantage of opportunities to ask questions, or did not enough opportunities exist? (4) What part of the lesson was most helpful? (5) What part of the lesson was least helpful? (6) How will you continue to practice the new information between now and the next class session? As a means to maintain research integrity, the practitioner researcher did not review these journal entries until the conclusion of the study. Analysis was completed through NVivo software to determine themes and patterns.

The two remaining instruments utilized during the study were completed by the practitioner researcher. At the conclusion of each lesson's delivery, Researcher Observation Notes were recorded on an observation guide. The template provided space to tally each student's participation frequency, record incidents of student: teacher and teacher: teacher interaction, and document opportunities for varied learning experiences. A Researcher Experience

Journal was a second instrument used by the researcher to capture qualitative notes regarding ideas and experiences throughout each stage of the study. NVivo software was utilized to identify additional themes and patterns among data generated from this instrument.

At the conclusion of the three-week unit, two final instruments were administered. A post-test, mirroring the same algebraic concepts and format as the pre-test, was delivered during the eighth week in the semester, after all instruction had concluded. Serving as a Kirkpatrick Level 2 learning survey (Kirkpatrick & Kirkpatrick, 2016), the post-test provided proficiency data to be compared to pre-test results. Descriptive statistics were generated from this raw data. Measured through a five-point Likert scale, students also completed a Kirkpatrick Level 1 reaction survey. Ranging from responses of “strongly agree” to “strongly disagree,” participants reacted to ten posed questions about their three-week learning experiences within the mathematics course. Descriptive statistics were once again generated to identify findings.

## **Results**

### **Design and Development of Course Content**

In response to the study’s first research question, instructional models and lesson plans were designed and developed for the control group’s direct instruction, as well as for the experimental group’s learning center instruction. Both groups were taught identical standards during the same weeks of the semester. The first week of the study included the topics of algebraic expressions and equations, properties of exponents, and multiplying binomials. The second week of the study covered solving equations and inequalities. The final week of instruction presented factoring and linear graphing. Class sessions were 100 minutes in length for both groups.

#### *Direct Instruction*

Following a direct instruction model with a gradual release of responsibility, the control group followed a consistent structure of learning. A guided notes sheet was distributed to students at the start of each class session. The first 10 minutes of the lesson were dedicated to the completion of a warm-up problem. Following this review, students followed their guided notes as the practitioner researcher defined and modeled the lesson’s new math concepts via a document camera and color-coded annotations. Once all concepts were introduced, the lesson moved to guided and independent practices. During guided practice, students were encouraged to contribute to the practitioner’s completion of the problem. Students were also directed to discuss specific questions with their nearby classmate. Throughout the independent practice, the practitioner circulated the room to support students who needed assistance. The last 10 minutes of the session consisted of the independent practice’s review, a lesson closure, and the answering of any student questions.

#### *Learning Center Instruction*

While presented with a different approach than the control group’s direct instruction, learning center instruction with the experimental group also followed a consistent routine. A guided notes sheet was once again distributed

to students at the start of each class session. Definitions, properties, and basic concepts were presented via a slide deck during the first 10 minutes of the period. The remaining 90 minutes of the period were broken into three 30-minute segments. Students were divided into equal groups and assigned a starting location of Technology Center, Small Group Center, or Peer Collaboration Center. The practitioner directed rotation to a new center every 30 minutes. Within the Technology Center, students worked independently to explore new concepts through prescribed online programs. This center focused on procedural fluency; all programs were enabled with responsive technology, offering immediate feedback to students as they worked. Student responses were also recorded for practitioner review and formative assessment. Within the Peer Collaboration Center, students were assigned a higher-ordering thinking task to be solved with the input of their peers. This center focused on mathematical discourse and collaboration, as well as problem solving skills. Activity responses were recorded online for practitioner review after each class. The Small Group Center consisted of focused instruction with the practitioner. This center called upon students' mathematical reasoning skills; prescribed problems demanded conceptual understanding. Given the improved teacher: student ratio within this center, students were frequently called upon to share their ideas and to ask clarifying questions.

### **Comparison of Mathematical Proficiency**

Results of the pre-test, administered before the start of the study, revealed similar mean scores between the groups with 5.3 questions correct in the control group and 5.04 questions correct in the experimental group. The median and mode number of correct responses were both 5 out of 15 questions for each class section. The control group had a standard deviation of 2.029 while the experimental group posted 2.619. The post-test, given after the three-week algebra unit, revealed improved proficiency within both groups. However, results were significantly higher within the experimental group. Most notable, the mean number of correct responses for students learning via direct instruction was 8.631 while that of students learning via learning centers was 10.086. All measures of central tendency were more favorable among the experimental group (see Table 1).

Table 1. Results of Post-Test

Measure	Control Group	Experimental Group
Mean	8.631	10.086
Median	8	10
Mode	6	15
Standard Deviation	2.607	3.489

As predicted, all 42 students in the study improved their score from pre-test to post-test. However, growth among the experimental group was notably higher than that found within the control group. The mean growth among students who learned via learning centers was 5.043 questions, opposed to a 3.316 question improvement found among students who learned via direct instruction. The most frequent growth within the experimental group was

a 7-question improvement however, all measures of central tendency were higher for this group of learners (see Table 2).

Table 2. Growth from Pre-Test to Post-Test

Measure	Control Group	Experimental Group
Mean	3.316	5.043
Median	3	5
Mode	2	7
Standard Deviation	2.335	2.286

### Difference of Direct and Learning Center Instruction

The third research question sought to describe the difference between the direct instruction learning experiences of the control group and the learning center learning experiences of the experimental group. Through the results of an anonymous Participant Reaction Survey, the firsthand input of student participants was captured. Following three-weeks of their respective learning, all 42 students answered 10 Likert-scaled questions regarding their experiences. Questions included their reaction to opportunities to work with their peers in the class, their instructor, and technology. The survey also asked students to reflect on their effort and performance during the present unit, as well as in comparison to previous units. Measures of central tendency and variability were calculated to compare the reactions of the control group to those of the experimental group. While most questions revealed similar results among both groups, there were a few remarkable findings. The first surprising result revolved around opportunities to work with technology. As expected, the experimental group (4.455) reported a higher level of agreement than the control group (4.095). However, the only interaction that the control group had with technology over the course of the three-week unit was with a four-function calculator; it is unclear how control group students interpreted their lessons as technology-based. Another surprising finding resulted from the survey of students' opportunities to ask questions. Despite the instructional design of small group time with the practitioner within the learning center model, more student participants from the control group (direct instruction) responded favorably to this question.

Differences between the two learning experiences were also captured through Participant Learning Journals. Once uploaded to NVivo, data was analyzed to identify themes. Preliminary start codes revealed several common themes (questions, visual, teamwork, and discovery), but the two groups' sentiments often differed. Students in the control group agreed there were opportunities to ask questions but they did not always take advantage. The major difference among groups, in terms of the question theme, was the experimental group's ability to reference specific points in the lesson when they benefitted from asking questions. Consistent within both participant groups, a second theme of visual learning emerged. Comments indicated that the provided guided notes were



helpful in the learning process, specifically in terms of color coordinated modeling. A third theme of teamwork became apparent, presenting one of the most contrasting results between the two participant groups. While there were five references to teamwork within the control group, they were surface level. In contrast, the theme of teamwork was more clearly defined by the experimental group participants with examples on how they learned from their peers. Finally, a notable theme of discovery resulted from this analysis. While there were zero references to discovery learning within the control group's journal entries, there were eight among the experimental group. Given the teacher-centered instructional design for the control group, this was not a surprising finding.

Comparison of direct instruction and learning center instruction was also captured through the Researcher Experience Journal. Notes were separated for the control group and experimental group. Once again, preliminary start codes were used to establish themes through NVivo. This instrument did not reveal any themes not already established by the Participant Learning Journals, but results did align to existing data identified by students. Like participant data, the researcher's notes on questions indicated that students within the experimental group were more willing to ask questions than in the control group. The theme of visual learning was also evident in the researcher's experience, revealing at least three references to this finding. Regardless of instructional modality, participants in both groups were observed mimicking the color-coding strategies used in the lesson. In terms of teamwork, there were some opposing results. While several entries from the control group's Learning Journals indicated that comparing answers with their peers was helpful, the practitioner researcher noted that participants were generally reluctant to engage in conversation each week. While this sentiment was gathered from the control group, the Researcher Journal indicated effective notes of student interaction among the experimental group, particularly throughout the Peer Collaboration and Small Group centers.

Finally, differences between the two learning experiences were documented through the Researcher Observation Guide. One of the most revealing aspects of this measure was the frequency of student participation. Voluntary participation was more prevalent within the experimental group. Each week, an average of 13 more students voluntarily contributed to class discussion in the experimental group than within the control group. This opportunity typically presented itself within the Small Group Center. During these dedicated 30 minutes each week, every student was vocal at least once; majority of students contributed more than twice. Students used small group time to provide solutions to presented problems, confirm their solutions, and/or ask questions. However, given the nature of direct instruction, opportunities for students in the control group to participate were in different forms. Students were routinely asked for solutions during the guided practice portions of the lesson, often in the form of choral response.

In addition, students were continually encouraged to ask questions. While some students took advantage of these opportunities, it was not general practice. For instance, four students in the control group did not participate at all during the first week of instruction. To encourage more discourse, the practitioner adopted a wide-spread cold call strategy during the second week of the study. During guided practice, each student was called upon and then prompted to answer one portion of a presented problem. If the student was unsure of a response, support and direction was provided. Without the cold-call questioning strategy in place during the third week of instruction,

many students went back to passive learning; during this final week, there were six students who were not vocal at all during the 100-minute class. Conversely, all 23 students in the experimental group contributed to class discussion during the study's final week.

## **Discussion**

Motivation for this study stemmed from the ongoing mathematics performance decline found among American students. Following the recommendations of previous research, mathematics educators need to actively contribute to improved instructional practices (Herbst & Chazan, 2020). Pilkington (2009) further suggested the power of practitioner research in terms of instructional preparation and professional development. Findings from the present study revealed promising implications from nontraditional mathematics instruction. The design and development of learning centers within a college mathematics offered unique learning experiences for pre-service teachers, including increased interaction with their peers, instructor, and technology. After a three-week algebra unit, learning center instruction yielded higher proficiency for students in this setting than for students who experienced traditional, direct instruction. The study also revealed a higher participation rate among students within learning center instruction which in turn allowed for more discovery, collaboration, and problem solving opportunities. While research remains limited for mathematics learning centers beyond the elementary classroom, findings were consistent with existing center-based instruction. Participants' positive response to learning centers was echoed in a third-grade mathematics Station Rotation study; students enjoyed the variation of instruction and interaction with technology (Truite & Ku, 2018). Similarly, Fazal and Bryant (2019) found sixth-grade students in a blended learning environment were able to outperform their traditionally taught peers on a mathematics assessment.

In addition to the investigation of improved mathematics instructional practice, to be implemented within K-12 classrooms, the present study offered new insight on learning center use at the college level. Research that includes pre-service teachers as participants can provide tremendous insight to educational practice problems (Farrell, et al., 2019). More stimulating than lecture, this method allows adult learners to fully engage and expand their existing knowledge (Judson, 2019). This is especially important for college students who are preparing to lead their own classroom. Research has proven that teacher candidates tend to adopt their former teachers' practices (O'Meara, Fitzmaurice, & Johnson, 2017). Therefore, future teachers' exposure to new models of instruction is exceedingly important. Not only must they learn about varied pedagogy, they must also experience it; they must see the benefits firsthand.

The problem to be explored within the present study was declining mathematics performance within American K-12 schools. Therefore, a limitation of the research was the non-inclusion of K-12 students. Less specific than the problem statement, the study's purpose was to compare mathematics proficiency within learning center instruction to that within direct instruction. As such, this study was limited to a three-week algebra unit within a college mathematics course. Longer duration and a wider scope of content and/or courses would add valuable perspective to the identified problem. An additional limitation of the present study was participants' volunteer status and the researcher's limited control over absenteeism. To counter student absences, the practitioner researcher posted notes and activities to encourage sustained learning. However, recreation of either learning

experience, especially that within learning centers, was not possible.

## **Conclusion**

On a macro level, society acknowledges the value of mathematics proficiency (Bregant, 2016). However, even with two decades of mathematical performance on the decline, there has been little change to instructional practice within American classrooms. The purpose of this qualitative design and development case study was to determine if mathematical proficiency would improve by student participation in learning center instruction versus traditional direct instruction. Without a scripted instructional strategy to employ for a college mathematics course, the first step of the study was to define and plan a three-week algebra unit. Prior to instructional delivery, baseline knowledge for all participants was determined through an algebra pre-test; comparable mathematics proficiency was confirmed at this stage. When teaching the control group (n=19), the practitioner researcher followed a direct instruction model, consisting of traditional gradual release of responsibility from practitioner to participant. The experimental group (n=23) was taught the same algebra unit, by the same practitioner, via learning center instruction.

The study highlighted three major findings. The first research outcome presented a comprehensive learning center instruction design, inclusive of a four-part time allocation. Within the first 10 minutes of a 100-minute class module, the practitioner presented the definitions and modeled basic concepts. During the remaining 90 minutes, students were divided into three equal sized groups, rotating every 30 minutes to each of the following centers: peer collaboration, technology, and small group (Culleny, 2021). Learning center and direct instruction models were delivered, respectively, to the experimental group and control group over a three-week unit; a post-test was administered to all participants in the subsequent week. The comparison of pre-test and post-test results revealed the second research outcome. Student participants taught through learning center instruction presented higher mean proficiency and growth than students who were taught through a direct instruction model. Lastly, the difference between the learning experiences of students in the control group and the experimental group served as the third research outcome. These variation descriptors were generated from a Participant Reaction Survey and qualitative analyses from Participant Learning Journals, Researcher Experience Journal, and Researcher Observation Guide. In summary, the survey suggested that students in the experimental group appreciated new opportunities for peer, instructor, and technology interaction whereas students in the control group benefited from the comfort of a familiar learning modality. Themes of question opportunities, visual learning, discovery, and teamwork emerged, with varying degree and sentiment, from the remaining qualitative measures.

## **Recommendations**

To maximize findings and improve generalizability, future studies may include the design and development of additional versions of learning center instruction for various levels of mathematics. Repeating the present study with an educator separate from the practitioner researcher is also recommended to determine if findings are consistent. Finally, extension of the current study for longer units of study, or over the course of multiple units, might offer insight on students' familiarity and yielding comfort with an instructional model.

The results of the present study on learning centers offer additional suggestions. Primarily, mathematics instruction for any grade level should incorporate some form of small group instruction. Students who experienced small group instruction through learning centers outperformed students who learned only through whole group instruction. All students from the experimental group participated in class discussion and asked questions during small group instruction, thus increasing their discourse levels. On the contrary, multiple students from the control group remained passive and avoided class discussion within direct instruction.

The second recommendation for practice is to incorporate non-traditional instruction, including peer collaboration and math-based technology, which challenges students to discover and apply concepts. This study revealed that students who experienced non-traditional instruction, through peer collaboration on inquiry-based tasks and via technology-based practice, outperformed students who learned through traditional direct instruction.

The third recommendation is for educators to incorporate metacognitive practices for their students. Data from the Participant Learning Journals revealed detailed reflections each week of the study. Students admitted to not taking advantage of question opportunities, identified which lesson aspects were most or least beneficial, and communicated concepts that were unclear.

The final recommendation is for ongoing, sustained professional development for mathematics educators on constructivist practices. When defaulting to lecture-based and direct instruction, students are not afforded autonomy nor the ability to solve mathematics in a collaborative or creative sense. Instruction which focuses solely on procedural fluency, ignoring conceptual understanding, mystifies mathematics and denies students of connective processes. Mathematics educators who take a step back will ultimately help students take a step forward in their learning.

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