

Engaging Veteran Teachers in Meaningful Professional Development

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Aside from teaching high school mathematics, I also hold a leadership role within the mathematics division that includes supporting new teachers that join our department. I have helped develop and implement various professional development for the new teachers. Four years ago, an instructional coach was hired for the mathematics division in which I work, and had experience participating and leading Learning Walks. Fisher and Frey (2014) describe Learning Walks as non-evaluative, observations of colleagues' classrooms in an effort to gain insight on the participants' professional growth. The instructional coach works quite closely with the new teachers, which led to a natural partnership in our work towards division-embedded professional development and decision to use Learning Walks.

Over the past two years our goal has been to extend the professional development we develop for the new teachers to the entire division. Our school believes strongly in all teachers being life-long learners, as well as willing to adapt to changing practices. The administration supported our idea, however we were disappointed in the lack of participation by our veteran (I am considering veteran as teaching greater than 8 years at our school) teachers when the opportunity was announced.

Purpose

The instructional coach and I send emails to the division, inviting everyone's participation in upcoming Learning Walks. We immediately noticed that we rarely had a veteran teacher interested in joining. There are 45 teachers within the mathematics division, 28 of whom fall into our veteran category. There have been 5 veteran teachers, including myself, that have participated in a Learning Walk over the past 2 years. We also send an email informing the

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division of specific dates and periods Learning Walks are scheduled to take place, therefore we may be stopping to observe for a few minutes if a teacher is teaching a class at that time. We close the email by saying, “Please let us know if this is an assessment or formative day, and we will make other arrangements.” Replies from veteran teachers have included “Busy,” “Skip me,” and “Please do not come to my classroom.” The purpose of my research is to gain insight into what prevents veteran teachers from participating in Learning Walks and other forms of professional development these teachers might find more enticing.

Problem Statement

Education changes at a rapid pace. Instructional strategies, technology, grading policies, student population, and district initiatives are a few examples of elements of education that have drastically changed over the last decade. One way to stay informed, learn new skills, and continue to grow as a professional is engaging in professional development. After two years of offering Learning Walks, a division-embedded professional development, with minimal veteran teacher participation, I am concerned. While some teachers remain committed to their profession, there are others that become complacent and lack interest in professional growth (Dawson, 2014).

Believing all teachers should be life-long learners, I am interested in knowing what is preventing veteran teachers from engaging in our offers for professional development. These teachers are role models for our less experienced teachers. The lack of participation creates missed opportunities for collaboration within the division, and moments of reflection and growth. If teachers are not interested in Learning Walks, I would like to research what other types of professional development teachers would prefer. Perhaps, there are other models more

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members of our division would enjoy, find of greater relevance, and feel provide true inspiration for continued growth and learning.

Research Questions

In an effort to address the lack of veteran teachers' participation in Learning Walks, I will engage in action research. My research will focus on two questions: 1) What barriers prevent veteran teachers from participating in professional development? 2) What types of division-embedded mathematics professional development would be most impactful for teachers?

Literature Review

With a background in providing professional development, Noonan (2019) noticed some teachers had positive, transformative experiences after a professional learning opportunity, while others were disengaged and/or uninterested during the same event(s). While reflecting on the causes of variation of impact and how to improve professional development design and implementation, he decided to consider teachers' professional identity as it impacts teachers' "anchoring beliefs" (p. 527). Noonan focused on two research questions: "How do teachers' accounts of professional learning reflect or contradict the anchoring beliefs underlying their professional identities? What implications for PD design and policy can be drawn from such alignments or misalignments?" (p. 528).

Noonan (2019) published a study on powerful learning experiences (PLEs) as they were described to him via interviews of 25 teachers. He asked the participants to describe one PLE, and provide information regarding their beliefs around professional development. His analysis of the heterogeneity between teachers' favorite PLE as well as their anchoring beliefs provided

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insight towards effective teacher learning and led him to focus on three distinct cases. Each case fell into one of the three learning affinities: content focused (*what*), modeling of what they consider exemplary (*who*), and engagement with colleagues (*with whom*) (p. 529). Noonan found that the teachers, each with a different learning affinity, described PLEs that correlated to their learning affinity. One teacher described her favorite PLE as completing worksheets and tasks within her content-area. Another teacher referred to a professional development facilitator that motivated and inspired him to change his practice. The third teacher reflected on her curriculum work with a colleague and its impact on her professional work.

Noonan (2019) concluded teachers appreciate and grow from professional development that would “appeal to teachers’ sense of themselves” (p. 535). His study points toward the need for personalization when developing powerful professional development. In addition, Noonan notes that teacher’s anchoring beliefs and learning affinity may evolve over time, further necessitating differentiation and teachers’ agency.

Beswick (2014) set out to change the fact there had been little thought towards ways professional learning (PL) providers elicit information from teachers regarding PL needs. In 2014, Beswick published results on three different efforts of collecting mathematics teachers’ opinions of PL needs. Her research prior to the study revealed teachers may be hesitant to share their PL needs due to feeling vulnerable, unsure of potential political agenda, and concerned their opinions won’t really make a difference. Beswick (p. 85) also noted, similar to Noonan’s thoughts, to consider teachers’ needs for PL are subject to change over time, necessitating ongoing communication between teachers and PL developers. Her work focused on finding ways to gather teachers’ PL needs, and why some teachers struggle to articulate their needs.

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Following three PL projects, all conducted in Tasmania, Australia, Beswick (2014) used a written questionnaire to ask teachers about their PL needs using specific prompts: personal understanding of mathematics, resources and concrete materials for mathematics teaching, technology and media in mathematics teaching, understanding students as learners, assessment of students' understanding of mathematics, and teaching mathematics for understanding. Teachers could reply "required," or "not required," and comment, if they desired. The results indicated the most requested PL related to resources, which Beswick pointed out is a response that avoids judgement of a teacher's personal understanding of mathematics and overall competency as an educator (p. 102). Similarly, teachers that did cite personal understanding of mathematics often gave vague comments or shifted the focus to helping students understand. Beswick felt this showcased the challenges of finding clear and specific information about teachers' PL needs (p. 102). This seems to align to Noonan's finding regarding personalization of PL. Possibly, finding a majority option that teachers need, is too broad. Conclusions included that listing options for PL needs help teachers think of things they may not have considered, and may also be a stepping stone of trust for opening up about their needs (p. 104).

Svendsen (2020) stated teacher professional development (TPD) is often not evaluated, which therefore leads to lack of data about the effectiveness of TPD and lack of teachers' desire to engage in the PD (p. 111). TPD is expected to increase professional knowledge and enhance student learning, but understanding and evidence of such transformative learning is sparse. As he set out to understand what makes PD effective, Svendsen focused on a single research question: "How can collaborative inquiry between teachers influence teachers' professional development (TPD)?" (p. 112). His research was conducted using three literature search

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methods of peer reviewed documents between 2009 and 2016: major databased search, citation search, and manual search.

Svendsen (2020, p. 116) categorized his findings regarding beneficial information about TPD and effects of TPD that contributed to further growth of the teacher. They were: sustainability of TPD over time, modes of delivery, professional learning communities (PLCs), relations and trust, and job-embedded with time granted. Notable for the purposes of my research are modes of delivery, PLCs, and relations and trust. The modes of delivery with the highest correlation to effective TPD were those presented in the teacher's content area, and even more so when situated in their own classes and students' learning (p. 117). In addition, TPD that developed through teachers' interest and action, rather than the traditional "top-down" approach, were found to be more effective. Teacher's growth and student learning is shown to be greater when TPD is collaborative in nature. When teachers feel safe and there is mutual trust, they are more willing to try new practices. Finally, when time and space is given for teachers to participate in TPD, the benefits of the PD are found to be higher (p. 123).

There are a handful of commonalities between Svendsen's, Noonan's, and Beswick's findings. One of the most pronounced is the desire for individualized PD. In one way or another, the three researchers found PD to be more effective when it aligned to a teacher's specific content area, specific class, and/or specific learning affinity. Going a step further, two researchers discussed the benefits of a teacher's self-selection and development of PD the teacher felt was relevant and impactful for their work. In addition, two of the three researchers were able to draw conclusions that creating a culture of respect and trust is essential.

Research Methodology/Design

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In an effort to increase validity and reliability, I will use three tools to collect information to answer my research questions. The first tool will be a survey issued to teachers attending Building Mathematics Teaching and Leadership Capacity (BMTLC) by Beswick (2014). The formative data I will analyze is from the quantitative feedback provided by the question and associated prompts for PL needs. The second tool will be three case studies as described by Noonan (2019) as he worked to learn about the relationship between teachers' accounts of PL and their anchoring beliefs. The last tool will be open-ended research questions given to teachers upon completion of Learning Walks (division-embedded PD) offered at my school.

Data Collection

Teachers attending BMTLC were given a survey to encourage reflection on their own professional learning. Amongst the survey questions, the 42 teachers were asked to indicate their PL needs in relation to personal understanding of mathematics, resources and concrete materials for mathematics teaching, using technology and media in mathematics teaching, understanding students as learners of mathematics, assessment of students' understanding of mathematics, and teaching mathematics for understanding. This quantitative data was published in a peer-reviewed journal article by Beswick (2014). Comparison of percentages of teachers feeling each aforementioned category was a "required" or "not required" PL need will highlight PL that teachers feel have the most impact. Analysis of teachers' responses will help answer my research question, 2) What types of division-embedded mathematics professional development would be most impactful for teachers?

After interviewing 25 teachers, Noonan (2019) selected three as case studies to explore in more depth by comparing and contrasting to each other. He describes each case as reflecting a

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different learning affinity, and provides information extracted from the interviews. This qualitative data was published in a peer-reviewed journal. Reading and interpreting the case study interviews, specifically through the lens of veteran versus non-veteran responses, will assist in answering research question 1) What barriers prevent veteran teachers from participating in professional development? Identifying common themes in what the three teachers enjoyed about PD with respect to their learning affinity and anchoring beliefs will help in answering research question 2) What types of division-embedded mathematics professional development would be most impactful for teachers?

The final tool for data collection is a survey using open-ended research questions given to 11 teachers at my school in February of 2019. The survey was given after completion of our mathematics department PD, Learning Walks, when we were looking for feedback on the experience. Questions included, “To what degree did you grow professionally by engaging in Learning Walks? Please explain,” and “Do you have any insight on how to improve today’s professional development?” Qualitative data will be collected by reviewing teachers’ responses, and will help answer my research question 2) What types of division-embedded mathematics professional development would be most impactful for teachers?

Data Analysis

Beswick’s (2014) survey results of 42 teachers attending BMTLC are cited in Table 1. The top three PL needs according to these teachers are resources and concrete materials for mathematics teaching, using technology and media in the mathematics classroom, and personal understanding of mathematics. As noted within the Literature Review, Beswick felt the top two choices were possibly less threatening to their competency as a teacher, and therefore a safer

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choice. Table 1 also displays the fact that no one topic stands as definitively more necessary than others. This may confirm Noonan's suggestion that PL needs are unique to the individual, and PL is not a "one size fits all" activity.

Table 1

Overview of teachers' self-assessed PL needs (n = 42)

	Personal understanding	Resources	Technology and media	Understanding students	Assessments of students	Teaching Mathematics
Required	57.9	65.8	60.6	34.2	52.6	50.0
Not Required	7.9	0.0	5.3	7.9	2.6	2.6
No Response	34.2	34.2	34.2	52.6	44.7	47.4

Note. Numeric values are percentages of the total number of teachers surveyed.

After interviewing 25 teachers, Noonan (2019) chose 3 unique cases to analyze. The focus was on each teacher's beliefs about teaching and learning (anchoring beliefs), compared to their description of powerful professional learning experiences (PLE). What emerged was a distinct pattern of similarity between the two. Noonan states the 3 cases as having learning affinities described as the *what*, the *who*, and the *with whom* (p. 529). The *what* is a professional that is passionate about their content area. This professional explained the best PLE was a workshop focused purely on their content area. The *who* is a professional that views teaching as performing, and described a memorable PLE as having fabulous facilitators. Finally, the *with whom* is a professional that values interaction with peers. When asked about an impactful PLE, this professional spoke of collaboration with colleagues, and the relationship that developed as they worked to develop curriculum.

Noonan (2019) concludes a teachers' anchoring beliefs regarding teaching and learning correlates to their opinion of a quality PLE. Similar to Beswick's (2014) findings, this leads one

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to consider PL should not be rolled out to the masses, but rather PL should cater to each individual teacher. Suggestions included surveying teachers on what they want to learn, differentiating PL choices, and allowing agency over PL (p. 535).

The final data analysis comes from teachers' responses on a feedback survey given after the completion of a Learning Walk. I looked for patterns in types of answers for each of the two questions. The first question asked about professional growth. Nine out of 11 teachers felt they grew professionally as a result of participating in the professional development (PD). The 2 teachers to state otherwise shared, "It would have been more ideal to go to classrooms where our focus typically exists," and "I don't feel like I learned how to really encourage collaboration in my own classroom, so it felt incomplete." Considering Beswick's (2014) and Noonan's (2019) work, it seems the feedback from these teachers aligns to the PD not meeting the specific needs of the particular teacher. They both offer ideas for what they would have preferred, indicating it is not that they don't want PD, but instead desire PD to be something different.

When asked for insight on how to improve PD, teachers' responses fell into one of two categories. The first can be described as wanting a slight modification to the Learning Walk format, such as timing or discussion protocols. Six teachers offered these types of suggestions. The second category is for broad suggestions that indicate the need for a different form of PD. Some examples include, "It's hard to miss school, so I'd prefer to work with a colleague where we meet to discuss planning and then observe each other," and "I'd prefer to talk lessons, tasks, pedagogy, and ideas with more teachers in the division, like during late arrival PD." Four out of 11 teachers gave this type of feedback, again indicating a need for personalization in order for PD to have better impact.

Future Action Plan

Describing, comparing, and contrasting literature reviews, in addition to collecting and analyzing data, has produced two goals for my Future Action Plan. As identified in the Literature Review and confirmed in the collected data, there is a desire for professional development that meets the needs of the individual teacher. Therefore, the first goal is to implement a more personalized approach to professional development for teachers. The objective of this goal is to offer professional development that appeals to all teachers, because it considers learning affinity, anchoring beliefs, and years of experience.

What originally was described as complacency might actually be better described as the fear of a teacher appearing incompetent. To address this problem, my second goal is to elevate teachers' trust and willingness to feel vulnerable in an effort to engage in their own learning and professional growth. The objective of this goal is to increase teacher participation in professional development. These two goals will shape the following force field analysis.

Goals of Action Plan:

1. To implement a more personalized approach to professional development for teachers.
2. To elevate teachers' trust and willingness to feel vulnerable in an effort to engage in their own learning and professional growth.

Objectives:

1. To offer professional development that appeals to all teachers, because it considers learning affinity, anchoring beliefs, and years of experience.
2. To increase teacher participation in professional development.

Driving Forces	Restraining Forces
(needs/supports making success more likely)	(barriers to success)

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<ul style="list-style-type: none"> • Administrative support • Funding to cover expenses of PD and/or teacher release time • Teacher support and/or interest in continuing/elevating a culture of life-long learning • Time to research best implementation of desired PD • Resources and time for surveying teachers • Time for relationship building 	<ul style="list-style-type: none"> • Time consuming to develop, prepare, and maintain • Challenging to facilitate various PDs • Increased complications to implement various PDs • Continued unwillingness of some teachers
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Time is a powerful driving force for the success of both goals contained in the action plan. Taking time to develop relationships with teachers is imperative for building trust. Curating, administering, and gathering feedback on surveys will also need time to be done well. Once certain PLEs are identified, time to research proper and effective implementation and facilitation must be considered. In general, having and taking the time needed to address these items will help in achieving the goals and objectives. It will be important to maintain motivation and effort towards the goals and objectives. As is the case for virtually any PD, administrative support and funding is crucial. With all the time needed to ensure success, it may also be considered a barrier. However, I would be curious to know if the time necessary to develop and facilitate PD decreases after the first year. Offering and facilitating personalized PD will certainly involve challenges and complications. And while not something I can control, any teachers determined to not participate will create an additional barrier towards success.

Recognizing the driving forces and restraining forces of this action plan can provide ideas for reflecting and evaluating progress towards the goals. Keeping records of time spent to survey

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teachers, develop PD, and facilitate PD may shed light on portions of the process that continue to be time consuming versus those that become more efficient. Most importantly, I would collect data on teacher participation in PD opportunities, specifically noting trends or changes in veteran teachers. I would also ask for feedback from teachers on the personalization of PD by surveying all teachers after implementation of portions of the action plan. If feedback is positive, I would argue the time, effort, and resources it takes to construct personalized PD is worth it. Finally, presenting feedback from teachers regarding their professional learning and growth to administration is a powerful way to maintain their support.

Conclusions, Discussion, or Summary

Acknowledging a lack of veteran teachers' participation in opportunities for professional development, I set out to find information around two research questions: 1) What barriers prevent veteran teachers from participating in professional development? 2) What types of division-embedded mathematics professional development would be most impactful for teachers? I found three peer-reviewed journal articles offering research towards similar questions. Upon completion of the Literature Review, I had identified two common themes. First, was teachers' desire for individualized PD, and second, teachers need for a professional culture of respect and trust. These two ideas helped shape further data collection and analysis, as well as a Future Action Plan.

Yilmaz (2013, p. 323) describes quantitative and qualitative data as having differences in design and application, and both exhibit strengths and weaknesses. Therefore, it was important to me for the research to include both quantitative and qualitative data. I also sought to diversify the research methodologies, and used surveys with prompts for nomination, case studies, and

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open-ended survey questions. Some data was extracted from the Literature Review, while other data came from my own post-PD survey last year. The various types of data and data sources created a well-rounded collection for me to analyze, compare, and contrast. What surprised me the most was the consistency in which the data supported the previously mentioned common themes, which in turn provided insight into my research questions. At this point, I felt the Future Action Plan came naturally. The two goals stated, with aligned objectives, corresponded to the research findings and created a viable plan for further investigation through action research.

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