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Project Based Learning

Research Problem Statement

The problem in the K12 education pathway is that students are becoming more and more disengaged in their learning (Busteed 2013). Despite the evolution toward a more project-based and inquiry-based curriculum, educators find it difficult to move from lecture-based teaching (Cook & Weaver, 2015). Perhaps a study on available professional development for educators, coupled with the increase in teacher demand on raising test scores, could remedy the situation.

Literature Review

Much is being said today about the benefits and successes of Project Based Learning (PBL). In every administrators' desk drawer and on faculty book lists you will find hot-off-the-press books on how to engage students through hands-on and inquiry-based education. With research backing the dire need to reach the modern learner in a way that can compete with Youtube and online gaming, maxed-out educators and administrators clamor to meet students where they are before they lose them to the data oasis of global achievement gaps and subpar achievements for entering the community, career or college. The body of research is growing and professional development catalogs continue to address the gap between what students need and what teachers can provide. All one can hope is that the gap between the two will close before too many students are left to self-contained environments or in a drop-out state due to a feeling of isolation and the discouragement that school just isn't for them.

Education today:

Educators today face a barrage of expectations focused pointedly on their individual performance. This includes the fear of disproportionally leaving minority and special education students in the dust as in the 2017 article in Children and Schools Journal on District of Columbia K12 special education students (Bradley Williams, Bryant-Mallory, Coleman, Gotel, & Hall, 2017). Although the study revealed successful outcomes for students when early interventions are in place, the question remains who will facilitate these interventions, who will be held accountable, and who will mind the paper trail? Early screening and response to interventions lead to individualized learning. What more is individualized learning but meeting students where they are. Meeting them how they can absorb and synthesize what they have learned.

Because project-based learning or hands-on learning is said to meet students where they are, researchers Cook and Weaver wanted to find out if students would do better in the subject matter of STEM (Science, Technology, Engineering, and Math) IF teachers were sent through a professional development program in advance (Cook & Weaver, 2015). Although the outcome had minimal effects, the researchers admitted that the training needed to be broken down into small chunks for educators in order for them to switch their mindset from lecture-based instruction. More needed to be done to break the habits of old in a limited amount of time.

Another group looked at STEM, but focused on delivering the content in a project-based manner. Researchers Sunyoung, Capraro, and Capraro followed 863 students' math scores to determine if the new approach would raise them. The outcome was good, but mainly for the lowest achievers (Sunyoung, 2014).

In another study focused on engaging under-represented high school students enrolled in a program called GEAR UP (Gaining Early Awareness and Readiness for Undergraduate Programs.) This was a project-based, virtual learning exercise aimed at measuring student satisfaction in the sometimes dry area of statistics and programming. Students reported that even though the course was rigorous, they learned a lot (Dierker, Ward, Alexander, & Donate, 2017)! Most of the credit goes to the one-on-one delivery and attention. With the increasing demands on educators to deliver content in a relevant-to-youth method comes the need for students to connect and learn through adult guidance.

From the book Project Based Teaching: How to Create Rigorous and Engaging Learning Experiences, by Suzie Boss (Boss & Larmer, 2018), a forward letter from Bob Lenz, Executive Director of the Buck Institute for Education:

> *...all students, no matter where they are from or what their background, have the opportunity to experience high-quality Project Based Learning. We believe that, when done well, Project Based Learning serves as a tool for education equity by empowering students to learn the academic content and skills plus the success skills they will need to meet the challenges in their lives and in our world.*

The book is meant to inspire the gold standard of PBL and the Buck Insitute was responsible for pulling together a steering committee or educators and organization focused on the success, present, and future implementation of project-based learning. The committee wrote the best practices and have K12 administrators from seas to sea clamoring for professional development in the subject matter. Is the training trickling down to already maxed-out teachers?

In yet another study, Hovey and Ferguson wanted to know how well teachers were implementing best practices in PBL (Project-based Learning.) The study was focused on diverse and exceptional learners. The goal was to see if this learning approach would be beneficial and

lead to their success. Again, the focus was placed on the educator and found that WHEN PBL best practices were adhered to by the educator, the students did see better results (Hovey & Furguson, 2014).

This sentiment echoes another study by Lee, Huh, and Reigeluth who wanted to research the correlation of successful and unsuccessful trials in project-based learning to the social skills in students (Lee, Huh, & Reigeluth, 2015). They found that the foundational skill of conflict resolution had to be present in order to have a successful project learning team and project. With that, students needing the most hands-on learning and hands-on coaching may not be able to handle a cooperative and collaborative learning environment until the soft skills are taught.

The same goes for a study by English and Kitsantas, who found it critical for students to be able to self-regulate in order to follow through with project-based assignments (English & Kitsantas, 2013). Connected thinking can only lead to further focus on who will administer the prerequisite skills needed in order to meet the student where they are and how they want to absorb and digest information? It all comes back to the administration, professional development, and the teacher.

Education to meet 21st Century needs:

According to researchers Kirsch, Braun, Yamamoto, and Sum, there is a perfect storm brewing in America to put us in our current state of education. They say there are three key contributing factors to this storm: achievement gap, a change in what employers are looking for in the new crop of workers, and a rising minority-majority coupled with an increasingly aging population (Kirsch, Yamamoto, Sum, & Braun, 2007). Wagner concurs in his book The Global Achievement Gap: Why Even Our Best Schools Don't Teach the New Survival Skills Our Children Need. Wagner sites a full body of research accounting for corporate employer needs,

failing test scores of the United States compared to other highly developed countries, and why standardized testing and the squeezing out of critical thinking and inquiry-based learning are to blame (Wagner, 2014). And, Harris and Herrington, in a 2006 article entitled *Accountability, Standards and the Growing Achievement Gap: Lessons from the Past Century*, asserts the blame on an ever-increasing achievement gap is on increasing accountability measures like No Child Left Behind (Harris & Herrington, 2006). That was 13 years ago and here we are still scratching our heads.

At the high education level, researchers are not giving up on reaching the youth that was overlooked in K12 - specifically those students identified as having ADD (Attention Deficit Disorder). In a study by Allsopp, Minskoff, and Bolt, the cause and effect of teaching college students basic study skills were measured against their successful outcomes and their personal feelings about the benefits of the interventions (Allsopp, Minskoff, & Bolt, 2005). The outcome was good! Again, the students were glad to have the attention and one on one at that.

One group of researchers directly connected teaching 21st Century skills, using a project-based learning model, to K12 students. They wanted to know its efficacy in a virtual environment - meeting students where they are at home or at school. The outcome was promising; students were able to effectively learn skills in order to be college, career, and community ready on a platform they are accustomed to using (CHI-SYAN, 2015). Further, the model removed the need for resources, such as multiple instructors and a brick and mortar location.

OK, we get it; what's next?

With an ever-looming achievement gap in the age of technology and a shrinking educator pool growing wearier and wearier, there is some hope for the future when you find a group of

educators getting excited about PBL as a fresh way to reach their bored audiences. According to a case study by Dole and Bloom, teachers found relief when given the right tools to help them roll out the new learning platform. Teachers felt more confident and the likelihood that they would use the new skills in the classroom looked promising (Dole & Bloom, 2016).

Purpose Statement of the Research Study

The purpose of the research study is to learn of the successful and unsuccessful attempts at training teachers in the implementation of project-based lesson delivery. This will show any gaps in current teacher professional development training and resources pertaining to it.

Further, research related to the increased demand placed on teachers due to barriers (increasing paperwork, IEPs, teaching to test, lower salaries causing second jobs, increasing caseload and class sizes) will shed light on the fact that the current model of education in the United States is due for a shift in order to meet the needs of the modern learner in the age of multi-media information delivery.

Open-Ended Research Questions

1. What impact will increased professional development in project-based learning have on availability to students?
2. What are the barriers to teachers implementing project-based learning in their classrooms?

Justification of Research Approach for Each Research Question

1. I would use the qualitative and quantitative approach as a bigger picture must be formed, but individual and group data will be collected. Teachers will need to be surveyed before and after and scores or assessments will have to be tallied. With the focus on equitable success amongst all learners, schoolhouses across the country are still teaching on Powerpoint slides and using black and white textbooks. As a country, we need to meet students where they are instead of increasing accountability measures that bore them. If teachers are to meet students where they are, they will need to change their habits. In order to change habits repetition in learning is necessary.

2. I would use a qualitative approach in gathering information from educators on what barriers they face and what the effect would be if they had more time to focus on PBL professional development. More and more burden is being placed on teachers to raise test scores and not let diverse learners fall behind or fall beneath the cracks. PBL is said to be the silver bullet in leveling the playing field for all students in the most equitable way. Teachers fail to have time with growing IEP meetings and after-school duties, to say the least. All of this on a salary that is below poverty. although administrators may have time for more PD, teachers may not. With the focus on educators to implement, the focus should be on giving teachers time to retool.

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