Using STEAM to Improve Student Achievement

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Capstone Project Proposal

The setting for the proposed project is the traditional public Brumby Elementary School in Marietta, Georgia. This Pre-K through 5th grade school is located in east Cobb, a more affluent area within the county. The majority of students live in apartment complexes at the edge of the attendance zone. This Title 1 school has a population of 946 students. The current school opened in July 2018, so it is a new physical environment for students and staff. The original school is located a mile away and existed for 51 years before the new school was completed. The support of teachers and students by administration and each other is ingrained in the sense of community, including the reciprocity that in helping others learn, we learn as well. The school is Cobb County STEM certified, as well as Advanced Ed STEM certified, and continues to use the engineering process/design process to encourage creativity and student success, as we move towards STEAM certification.

The ethnic breakdown of the student enrollment is approximately 70 white/Caucasian, 45 multiracial, 232 Hispanic, 552 black, 44 Asian/Pacific Islander. Approximately 71% of the students are Economically Disadvantaged and have qualified for free and reduced lunch. There have been 106 students identified as Students with Disabilities and 106 students identified as English Language Learners (ELL). Brumby also has 22 gifted students and 105 EIP students. Brumby's administration consists of one principal, two assistant principals, one staff leadership intern (SLP), one student services administrator (SSA), one academic coach, and one technology coach. There are three counselors, 44 classroom teachers, 15 paraprofessionals, one Read 180 teacher, 10 special education teachers, one gifted teacher, 16 core expansion teachers, five ESOL/ELL teachers and one nurse.

According to the College and Career Ready Performance Index (CCRPI), one Subgroup within the school met Participation Rate, State Performance Target and Subgroup Performance Target. One Subgroup met Participation Rate and Subgroup Performance Target but not State Performance Target (both of these were in English Language Arts). The other five subgroups met the Participation Rate, but did not meet either the State or Subgroup Targets in English Language Arts. All seven subgroups met the Participation Rate, but did not meet either the State or Subgroup Performance Targets in math, science or social studies (College and Career Ready Performance Index (CCRPI), 2017-2018). The College and Career Readiness Performance Index (CCRPI) for Brumby was 67.83, which is below the Cobb County average CCRPI elementary school score of 79.7 and the state average elementary school score of 72.9 (Georgia Department of Education, 2017).

During the 2017 testing period all subgroups at Brumby elementary failed to meet state standards in English language arts (ELA) and math with the exception of black and multiracial students in ELA (GADOE CCRPI, 2018). 2018 end of course testing showed that 1/3rd to almost half of all 3rd and 5th graders scored as beginning learners on the Milestones tests. In third grade 49% of students were reading below grade level with 49% scoring as beginning learners in ELA and 39% in math. Fifth grade had 37% of its students listed as reading below grade level with 32% scoring as beginning learners in ELA and 41% in math (GADOE GA Milestones, 2018). Brumby's School Improvement plan lists a need for remediation and acceleration in mathematics, reading and writing as overarching needs. Its goals are to increase the percentage of students proficient in mathematics, reading, and writing by 3% (Georgia Department of Education, 2018).

In an effort to improve academic scores, we have implemented a specials rotation called Core Expansion (Core X). Core X takes the place of traditional specials rotations that have primarily consisted of physical education, art and music. In addition to the traditional three, our rotation includes a writing class, two math labs, two science classes, social studies, media center, computer lab, career education and theater. This rotation allows students to receive instruction in academic areas, but with a teacher other than their homeroom teacher in a different setting. With this rotation, students receive visual arts instruction two out of 16 days for a total of 80 minutes, two to three times per nine weeks.

Although students have access to many academic classes which embrace the creative design process, students only receive 160-240 minutes of direct art instruction per nine weeks. The arts provide ways to empower students in articulating what they are learning and why, and provide connections between grade level standards and visual design thinking. Arts inclusion can also increase student attendance and parent involvement as the level of engagement in the classroom increases. The specific Student Growth Measure (SGM) for visual art consists of ten questions relating to our broad art standards, and the expectation is to show 30% growth based upon one fourth grade class's progress from the beginning to end of the year (pre- and post-test). In striving for 30% growth in art, the limited amount of time spent in the art classroom does not provide enough opportunity to address the content knowledge or to implement checkpoints along the way.

With the opening of a new school building, Brumby Elementary has been outfitted with a large amount of new technology. Each classroom houses a Recordex interactive touch panel monitor and 3-5 laptops, and each grade level has a cart with 30 ipads and an additional 24 laptops. In addition, Art/Music has a shared cart of 30 ipads. With our school being STEM

certified and working towards STEAM certification, my project will use available technology to incorporate art into the STEM model, thus supporting STEAM initiatives as well as student achievement in both reading and math, which are the subject areas that most subgroups are failing to meet targets in Milestones testing.

Statement of Problem, Need and Rationale

In order to support STEAM initiatives, Cobb County offers an Advanced STEAM cohort as part of the STEM Innovation Academy. This cohort meets four times per year, and offers professional development for educators as they are required to complete a Weebly portfolio documenting their classroom implementation, as well as how they are sharing their knowledge with other educators on their campus and beyond. The meeting dates for this year are October 8 and December 4, 2018, as well as January 29 and March 5, 2019. The meetings occur off campus at Kennesaw State University, and allow for STEAM development of teachers across grade levels and subject areas that further support student achievement within each school's individual setting. Not only does this opportunity benefit overall student achievement, but particularly reading and math, as well as the art standards that need to be addressed in working towards 30% growth according to the SGM. In attending this academy, I will be equipped to share my knowledge of art and technology with colleagues at my school and within Cobb County.

The problem my Capstone project is seeking to address is using technology and the arts as part of STEAM to improve our CCRPI rating, which in turn means improving math and reading scores of subgroups, as well as meeting 30% growth for the fourth grade Student Growth Measure in art. STEAM (Science, Technology, Engineering, Art, Mathematics education) can be defined as "education for increasing students' interest and understanding in scientific technology and for growing STEAM literacy based on scientific technology and the ability to solve

problems in the real world" (Kofac, 2017, p. 3). This definition has been one of the principles in successful education reforms in South-Korea. The definition is then operationalized into practical education by two key terms: 1. Education based on scientific technology, and 2. Ability to solve problems in the real world (Kofac, 2017). STEAM has been showing promising results in evidence-based practices (BERA-report, 2017)" (Bogner, 2018). Part of the problem can also be explained by self-efficacy – what our students believe about their own academic performance. "Bandura (1997) defined self-efficacy as the belief in one's ability to successfully produce desired effects through one's actions, which includes controlling aspects of one's environment. Students with high self-efficacy beliefs are motivated and resilient and show persistence on challenging tasks because they are confident that their efforts will be fruitful. They exhibit behaviors such as using self-regulation techniques and attending tutorials to complete difficult homework problems (Pintrich & De Groot, 1990). Teachers observe these behaviors as cues and utilize them in the process of assessing their students' motivation and performance and assigning grades. Many studies have shown that students' self-efficacy beliefs predict their achievement (Kitsantas, Ware, & Cheema, 2010; Klassen & Usher, 2010; Pajares, Johnson, & Usher, 2007). Given the link between academic self-efficacy and achievement, research on ethnic differences in academic self-efficacy provides a basis for exploring the effects of teacher expectations on the achievement of ethnic-minority students. Self-efficacy beliefs have been shown to vary across ethnic groups and between boys and girls, although the research has yielded mixed results" (Harvey, Jackson, & Suizzo, 2016). When our students see themselves as low-performing, their efforts reflect that. Not only can STEAM help incorporate math and reading with the arts, but it also serves to help students feel successful in their own right.

By working with grade level teachers as a requirement of the Advanced STEAM cohort, I will be able to instruct colleagues in how to use technology and art in their classrooms to support reading and math, with the goal of creating an impact on test scores in those areas. The types of technology that will be implemented include use of digital journals within OneNote. The trainings will involve videos, individual and group instruction, and modeling of the technology in use within the classroom. As a member of the STEM to STEAM Hype team at our school, the trainings will be organized through team meetings, as the team consists of grade level teachers K-5, as well as Core X teachers who support grade level goals. Teachers will be expected to incorporate STEAM activities into their STEM lessons, which will be documented on our specific STEM Showcase days once per quarter, as well as through the student digital journals.

In researching the impact of STEAM on student achievement, there is an abundance of information supporting use of a MakerSpace. Our school currently has a MakerSpace room that houses two 3-D printers, as well as other technology. “I believe makerspaces and STEAM education get students interested in learning at a very young age,” Jason Burik, co-principal at Montour Elementary, told THE Journal. “STEAM education challenges students to learn and apply content and skills with fun, real-life projects. Skills learned can later then be applied to almost any job. We wanted to create a unique learning space that kids would love coming to, something that no one else had, a room that would inspire students to become architects, engineers, designers, makers, and use problem-solving and critical thinking skills. We wanted a room that made students curious to learn and discover amazing things along the way.” (Nagel, 2018). Part of the STEAM initiative to support student achievement involves student engagement. “But it isn’t just about the technology or the spaces themselves. It’s about learning and providing students with opportunities for growth that are beyond the ordinary, yet align with

education standards. (Nagel, 2018). “In fact, many educators and researchers are now calling for STEA(arts)M education to be the approach of choice through which teachers may facilitate growth in habits of mind and practice that are characteristic of a globally literate citizen. Based on the fact that both art and engineering are based in similar processes of design, this educational choice may indeed be the key to unlocking more equitable access to global literacy. Similarly, the goals of integrative STEAM education, from an instructional standpoint, are to intentionally present the content and practices of math and science in the context of technology, engineering, and artistic (T/E/A) design, and further enhance learning through meaningful integration with other school subjects such as language arts and social studies (Gess, 2015) (Nagel, 2018). This research supports my goals in instructing grade level teachers as to how to incorporate the visual arts into STEM, as the blended model increases student achievement across grade levels and subject areas. In further support of STEAM, “The California Department of Education describes K-12 STEM education as encompassing the processes of critical thinking, analysis and collaboration in which students integrate the processes and concepts in real world contexts of science, technology, engineering and mathematics, fostering the development of STEM skills and competencies for college, career and life (Tan, 2017). Activities within the MakerSpace can be recorded and reflected upon using the digital journals that I will be educating teachers in how to implement.

In working with teachers on STEM to STEAM implementation, “there are four main points to note about the above definitions: (1) Approaches should be integrative and not integrated; (2) Approaches should be intentional on the part of the teacher; (3) The design process should be used to engage students in constructing authentic understandings through iterative cycles of learning in transdisciplinary classrooms (Dugger, 2010; Wells, 2013, 2016);

and (4) An artistic artifact may be constructed as a problem solution that is equal to one in engineering or technology. (p.40). These aspects are parts of the solution that I will be addressing in my teacher trainings. “In essence, the integrative STEAM classroom “may be a vehicle through which high-quality, evidence-based, differentiated, standards-grounded instruction may be delivered to all students. In this classroom, clear learning goals are established by teachers and students that are anchored in literacy and not rote knowledge” (Gess & Kuo, 2017, p. 3). The pathway to such an ideal learning environment is through employing the design process to “connect hands-on with minds-on, where hands-on experiences are intentionally utilized to achieve minds-on learning outcomes” (Wells, 2016). In doing so, students may be more likely to persist through education (Plasman & Gottfried, 2016), transfer knowledge among disciplines and contexts, both in and out of school (Fortus, Dershimer, Krajcik, Marx & Mamlok-Naaman, 2004, 2005; Berry, Reed, Ritz, Lin, Hsiung & Frazier, 2004), and increase depth of knowledge and understandings (Kolodner, 2002). Situating STEM learning in the arts may provide the opportunity for meaningful scaffolding that all students, but especially students with disabilities, need in order to construct understandings understandings (Hwang & Taylor, 2016). Additionally, by adding the arts into the STEM classroom, increased motivation, engagement, and achievement may result for wider student audiences (Becker & Park, 2011). Meaningfully integrating the arts into K-12 education can “lower the threshold of learning STEM disciplines because it facilitates student access to STEM knowledge” (Hwang & Taylor, 2016, p. 43) (Gess, 2017).

In thinking about teacher training, research provides suggestions for successful implementation of STEAM initiatives. “In order to facilitate an effective STEAM educational experience for your students, you should be participating in the same iterative cycles of design

and reflection that you are planning for your students (Gess & Hargrove, 2017)."Sit and get" training is not enough! Rather, seek out opportunities to work in a learning community that is steeped in inquiry—supporting ongoing analysis of the practices of teaching so that you can effectively guide your students toward becoming productive citizens" (Darling-Hammond & McLaughlin, 2011) (Gess, 2017). My training will involve teachers working in a community, using the same type of digital portfolio that students will be using to record their observations and reflections of their workshop participation.

In addition, "The value for the arts and STEM together can benefit college and career readiness. Technology companies are widening their hiring horizons beyond the STEM fields. Larry Quinlan, Deloitte's chief information officer, argues in favor of STEAM, science, technology, engineering, arts and math. "It's not enough to be technologically brilliant," Quinlan says. "We need senior people who understand business processes, too" (Forbes) (Tan, 2017). Not only can STEAM benefit current test scores and student achievement, it can also affect student achievement in high school and beyond – including the graduation rate. What one school "found through our after-school STEAM academy is that elementary-age students love hands-on and interactive STEAM activities. Children have a natural curiosity and interest, so when presented with open-ended STEAM problems, the students easily jumped into the STEAM activities and collaborated with each other. They expressed joy and confidence and found school to be fun! As a result of the success of the after-school STEAM Academy at Perry with increased attendance, participation and motivation seen among student participants, the teachers unanimously decided to make the STEAM interdisciplinary integration lessons a focus of school-wide instruction during the regular school day. With the shift to school-wide project-based and hands-on learning opportunities, all students are now able to weave together and to communicate their

understanding of STEAM concepts throughout the school day. Additionally, with a continued focus on the state content standards and the need to develop and to create lessons that demonstrate students' depth of knowledge across different content areas, the STEAM program has provided another excellent opportunity for collaboration amongst teachers" (Johnson, 2017). In researching how to address the achievement gaps in reading and math, as well as how STEAM can support grade level and arts initiatives, I am confident that I can use digital portfolio to help colleagues move from STEM to STEAM in order to increase student achievement in those critical areas, which will support students in their academic career and beyond.

Objectives & Deliverables

The goal of this capstone proposal is to support teachers in incorporating STEAM into their lessons through art and technology for the purpose of impacting student achievement. Teachers will learn how to use and document STEAM strategies through journaling to effectively help students improve their overall understanding of grade level standards in math, reading, science, and art, and thus their performance in those areas. As the school is moving towards personalized learning and from STEM to STEAM, this presents an opportunity to use technology and art for instruction and assessment. The goal of my project will be based on the following objectives and deliverables and achieved by the end of the school year (May 2019):

Project Objective #1: By November 16th, 2018, 80% of members of the HYPE team will know how to create a digital portfolio within One Note.

Deliverables:

1. Design and implement workshop for creating and using digital journal in OneNote.
2. Create and distribute handouts describing process of implementing portfolio.
3. Create video demonstrating implementation within the classroom setting.

Project Objective #2: By March 1, 2019, 75% of teachers will take what they have learned and work with their teams for continued implementation.

Deliverables:

1. Create access to resources that support implementation of digital portfolios.
2. Create a calendar of availability for one-on-one support.
3. Observe teachers implementing digital portfolios as a part of evaluation.

PSC Standards

Georgia Professional Standards are supported throughout my goals and objectives, with specific emphasis on Standard 3, Digital Learning Environment. Within the Digital Learning Environment, I will support teachers in managing tools and resources through implementation of a digital portfolio as well as access to an online platform (3.2), online and blended learning through incorporation of an online STEAM journal (3.3), and selecting and evaluating digital tools (3.6) (Georgia Professional Standards Commission, 2010). The second relevant standard is focused on Standard 2, Teaching, Learning, and Assessment. The specific elements within this standard include 2.3 and 2.6, as I will "model and facilitate the use of digital tools and resources to engage students in authentic learning experiences" by creating and editing video that supports use of an online journal within a digital portfolio. In addition, I will "model and facilitate the effective use of research-based best practices in instructional design when designing and developing digital tools, resources, and technology-enhanced learning experiences" by creating an online platform containing documents and external resources, along with video, to support use of digital portfolios to impact student achievement (Georgia Professional Standards Commission, 2010). The complete standards supported are as follows:

- 2.3 **Authentic Learning**

Candidates model and facilitate the use of digital tools and resources to engage students in authentic learning experiences.

- 2.4 **Higher Order Thinking Skills**

Candidates model and facilitate the effective use of digital tools and resources to support and enhance higher order thinking skills (e.g., analyze, evaluate, and create); processes (e.g., problem-solving, decision-making); and mental habits of mind (e.g., critical thinking, creative thinking, metacognition, self-regulation, and reflection).

- 2.6 **Instructional Design**

Candidates model and facilitate the effective use of research based best practices in instructional design when designing and developing digital tools, resources, and technology-enhanced learning experiences.

Domain three is another set of standards directly related to my project. With this domain, individuals need similar knowledge, skills, and dispositions as domain two, as well as a need to concentrate on creating, supporting, and managing an effective digital classroom.

- 3.2 **Managing Digital Tools and Resources**

Candidates effectively manage digital tools and resources within the context of student learning experiences.

- 3.3 **Online & Blended Learning**

Candidates develop, model, and facilitate the use of online and blended learning, digital content, and learning networks to support and extend student learning and expand opportunities and choices for professional learning for teachers and administrators

- 3.6 **Selecting and Evaluating Digital Tools & Resources**

Candidates collaborate with teachers and administrators to select and evaluate digital tools and resources for accuracy, suitability, and compatibility with the school technology infrastructure.

Project Description

In this project, I am encouraging teachers to incorporate STEAM strategies involving use of online journals utilizing digital portfolios. This will support goals of increasing student achievement in math and reading while incorporating art and science. I am providing the necessary technology tools for teachers to increase their understanding of how to use a journal within a digital portfolio, as well as how STEAM can increase student engagement and performance. In turn, this will impact teachers' instruction and assessment. The outcome of this project will provide students at Brumby Elementary with a STEAM experience that directly impacts student achievement through technology use.

First project item/activity.

The first project item/activity will see me learning to create a digital portfolio in OneNote, and then develop a workshop to train the HYPE team on how to use the portfolio within this platform. The workshop will result in 85% of the HYPE team being proficient in all aspects of creating and implementing digital journals for STEAM within their specific classrooms and grade level/subject area. This project activity addresses PSC Element 3.6 by hosting a workshop that involves creating and implementing digital portfolios that will drive the resources used to build the online learning platform. This part of the project will take a total of 50 hours. Thirty hours will be devoted to designing the workshop that will teach the HYPE team the best practices for creation/implementation. Twenty hours will be spent hosting the workshop

over a series of ten one-hour sessions and any follow-up activities within the HYPE team's classrooms.

Second project item/activity.

The second project item/activity will focus on building the structure of the online learning platform so that once the tutorial materials are created, they can be easily loaded into the online learning platform. I will screencast a tutorial video that discusses the logistics of using the digital tool in terms of creating accounts, enrolling students, and navigating the teacher dashboard. I will create videos of HYPE team members implementing use of the portfolio in a classroom. I will create digital and printable how-to help documents to guide teachers through using OneNote. I will also look to include at least three external resources created by Microsoft or found within Cobb County available digital resources. Once the materials are loaded to the online learning platform, staff will be informed. I will also create a schedule for supporting teachers individually within their classroom as needed. This will include access and use of the digital platform, as well as my personal observation of implementation of digital journals. Observation will be part of evaluation of the success of the workshop and trainings.

This project activity addresses many of the PSC standards for instructional technology. Most importantly, this part of the project will demonstrate my ability to use technology in appropriate professional learning opportunities. This project will also address Element 3.3 which states that candidates can use online and blended learning to extend professional learning opportunities. The online learning platform will be designed using best-practices in instructional design for digital tools, which is Element 2.6. When working on the materials needed for the digital tool platform, I will spend fifteen hours selecting, recording, and editing the teacher

videos. I will spend another fifteen hours screencasting the tutorial video. Next, I will devote ten hours creating the how-to help documents. I will take another five hours locating external resources and loading material to the online learning platform. Publishing the digital portfolio training and online journal component will take a total of 30 hours. An additional twenty hours will be spent in teacher's classrooms to observe and support actual implementation of the digital journals, for a total of 50 hours for project item two.

Table 1.

Project Activities Alignment

Project Item/Activity	Project Objectives	Deliverable
• Create digital portfolio within OneNote • Conduct workshop with HYPE team	By November 16th, 2018, I will research digital portfolios within OneNote and best practices for implementation, resulting in the creation of a portfolio for journaling. I will then conduct a workshop to instruct HYPE team members in creation/implementation.	• Digital portfolio • Workshop
• Begin developing online platform for resources that teachers can access, including video of implementation by HYPE team. Handouts and step-by-step resources will be included. • Upon completing online platform, schedule teacher observations to support classroom implementation of digital portfolios, as well as use of online resources.	By March 1, 2019, I will provide an online learning platform for teachers by designing a resource library specific to a digital portfolio within OneNote that supports use of online STEAM journals. Between March and May, I will conduct classroom observations that support classroom teachers and serve to evaluate the effectiveness of the HYPE team trainings and their concurrent trainings	• Online platform • Videos • Handouts • Tutorials • How-to help document • External resources • Schedule for observations • Actual observations recorded in personal

	with their grade level/subject area teams.	OneNote journal

Evaluation Plan

The purpose of this project is encouraging teachers to incorporate STEAM strategies involving use of online journals utilizing Office 365/OneNote digital portfolios. Evaluation will take place at the completion of the workshop and through classroom observations of the digital portfolios put into use. The PSC standard which is specifically supported by my goals and objectives is Standard 3, Digital Learning Environment, which involves managing tools and resources through the implementation of the online STEAM journal. This standard, along with Standard 2, Teaching, Learning, and Assessment, will be evaluated throughout this project.

First project item/activity.

The first project objective is to design a workshop instructing the HYPE team in the creation and implementation of digital portfolios. This serves to support improved student engagement through STEAM as the journals are intended to be used for recording observations and self-assessment. I will begin designing the online journal training, which addresses Standard 2.6, best practices in instructional design for digital tools. After completing the training with the HYPE team, those members will then conduct trainings with their specific grade level/subject matter teams. I will encourage teachers to begin using digital journals with their students, including setting up accounts while involving students in the process, which supports Standard 3.6, Selecting and Evaluating Digital Resources, as well as 2.4, Authentic Learning. This objective will be evaluated through a survey which requires feedback concerning the specific components of the online journal, as well as the effectiveness of the workshop (Appendix 1).

Teachers will also be required to share their journal digitally with myself and their HYPE team leader so that we are able to view the components upon completion.

Second project item/activity.

My second project objective involves building the content for the resources that describe creation/implementation of the digital portfolio. This further supports improving student engagement through STEAM as the portfolio will be used to document and reflect upon those types of activities within the classroom. Video tutorials will involve the HYPE team and supports Standard 3.3 - use of online and blended learning to extend professional learning opportunities. I will also implement a schedule for classroom visits, in order to observe digital portfolios in use and provide feedback for best practices. This objective will be further measured by observation and conversation during classroom visits, as well as through additional questions on the teacher survey that request feedback concerning the workshop and resources (Appendix 1).

Project Timeline

The timeline of this project will take place over the 2018-19 school year. It will begin with the development of the workshop that will be presented to the HYPE team, so that those members can then train their grade level and subject area teams with my support. Upon creating a digital platform to provide initial resources relating to the online journal, I will then conduct classroom observations that expand upon the implementation of journals, and encourage use of the digital platform that contains resources for further support. The entire project will take roughly 100 hours to complete, and the resources that support implementation of digital STEAM journals are described in Table 3.

Table 2.

Project Timeline

Month	Project Item/Activity or Evaluation Item	Hours
October	Research use of digital journals in OneNote	10 hours
November	Create workshop that will be presented to HYPE team members	15 hours
November	Provide workshop to HYPE team	20 hours
December	Revisit workshop within HYPE team	5 hours
January	Research aspects of digital learning platform	10 hours
February	Create digital learning platform with resources	10 hours
March	Implement digital learning platform and schedule observations	10 hours
March-April	Conduct individual observations	20 hours

Table 3.

Proposed Resources

Proposed Resources	Specifications
Virtual Space	Office 365 folders
	OneDrive access
	OneNote accounts
Physical Space	Workshops in Media Center
	Classrooms for Video
	Classrooms with Laptops
Technology Tools	Student Laptops
	Teacher Laptops
	Office 365/OneDrive/OneNote
Human Resources	ITS for Office 365 support
	Teachers to participate and help facilitate workshop
	Administrative support

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Appendix 1

Online Journal Training and Implementation Survey

1. Does your online STEAM journal contain a Collaboration Space for yourself and students?

- ◯ Yes, I have created this and know how to implement it with students.
- ◯ Yes, I have created this but am unsure of how to use it.
- ◯ No, I have questions about how to add and use this.

2. Does your journal contain a Content Library accessible to both you and your students?

- ◯ Yes, I have created this and know how to use it with students.
- ◯ Yes, I have created this but am unsure of how to use it.
- ◯ No, I have questions about how to add and use this.

3. Does your journal contain a Teacher Only space?

- ◯ Yes, I have created this and know how to use it.
- ◯ Yes, I have created this but am unsure of how to use it.
- ◯ No, I am unsure of how to create and implement this.

4. How many students have you added to your teacher-created Stem Journal? Do you have any students whom you were unable to add, and do you need help with this step?

Enter your answer

5. Have you added each of the following categories within your student specific pages?

	Situation	Plan	Materials	Create	Test	Problems	Improve
Yes	○	○	○	○	○	○	○
No	○	○	○	○	○	○	○

6. On a scale of one to five, with five being the highest, how satisfied are you with the training you received on creating online journals within One Note?

☆ ☆ ☆ ☆ ☆

7. On a scale of one to five, with five being the highest, how would you rate the user-friendliness of the One Note program?

☆ ☆ ☆ ☆ ☆

8. Please reflect upon your ratings in questions 6 and 7, and provide any additional information that would be helpful in understanding those ratings, as well as any successes or difficulties you experienced during the training and implementation.

Enter your answer

9. If you have a specific need that was not addressed in this survey, please describe it here so that it can be addressed as soon as possible.

Enter your answer