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Leadership Vision and E-Learning Plan

**Introduction**

The E-Learning Plan designed in this document was developed for the purpose of serving as an instructional model for a STEM (Science, Technology, Engineering and Mathematics) magnet school in a PreK-5 elementary setting. The ultimate intention of this instructional design was to assist other academic institutions with the process of replication. Although no two models are exactly alike, this E-Learning Plan can provide a starting point for any educational institution with similar goals.

**Vision**

According to the U.S. Bureau of Labor Statistics, occupations in STEM-related fields are viewed as having some of the best opportunities for job growth. STEM careers currently make up more than 1 out of every 10 jobs in the United States and have wages that are approaching nearly twice the U.S. average (U.S. Bureau of Labor Statistics, 2014). As instructional leaders, it is our obligation to prepare students with the 21st century skills needed to compete in a global economy.

Furthermore, with the reauthorization of the Elementary and Secondary Education Act (ESEA) the federal government has established mandates and has designed a blueprint that supports rigorous college-and career-ready standards (U.S. Department of Education, 2010.)

This call to action is a direct result of President Barack Obama’s goal for the country to ensure that all students are ready for college and careers when they graduate from high school.

In our society, American education is well-known for being one of the greatest equalizers. If we hold this truth to be self-evident, there is no better time than the present to begin laying the foundation for our initiative. As an educational technology leader, my aim is to set the bar high in pursuit of academic excellence. By creating an E-Learning Plan for a model STEM school, we can begin to level the playing field by equipping our students with skills and knowledge needed to succeed in a global workplace.

In order to begin this process a technology ecosystem would need to be created to ensure sustainability. In other words, we would need to set up a structure in which to begin laying the groundwork for our E-Learning Plan. First and foremost, we would need to identify a means to support and transport information. A cloud-based solution, such as Google Drive would provide a vehicle to store and share files between all members of the school community. Choosing a cloud-based solution would provide students and staff with the ability to work between home and school while providing an opportunity for mutual collaboration.

A means to create new content would also need to be incorporated into the design model. This would be dependent upon the individual grade-levels, the devices and the types of apps that are suited to meet individual needs. Beth Holland, an educational technology expert featured in Edutopia, recommends seeking empty creation tools that provide students with a blank canvas for their work. Holland recommends apps such as Explain Everything, ThinkLink and iMovie,

to create authentic student work which can work seamlessly with a number of cloud storage devices (Edutopia, 2014).

Although apps to generate new content and cloud-based solutions are essential to the sustainability of the ecosystem, there is also a need to create a shift in thinking. Teachers need to be willing to challenge traditional pedagogy in order to fully embrace the current shift in paradigm by learning to apply a variety of technologies into the design of the curriculum. This would entail a commitment to personal mastery and lifelong learning with the ultimate goal of ensuring student success.

**E-Learning Plan**

In order to bring my vision to life I would need to adopt a systems thinking framework. As an instructional designer, I would first need to understand how people think and learn for the purposes of designing and developing efficient, effective and meaningful instructional interventions (Brown, A and Green, T.D., p. 23). According to Senge, it would also be essential to build a shared vision to create a sense of commonality within our organization (2006). In order for the vision to truly thrive, it should be formed as a collective and not based on the exclusive thoughts of any one individual.

The design of the E-Learning Plan would include a standards-based STEM curriculum (PreK-5) that would challenge students’ thinking and provide increased rigor to ensure that

students are college and career ready. The instructional design would be reflective of a student-centered approach, with opportunities for hands-on learning and project-based instruction. It would also be an inclusive model designed to support children with special needs, as well as, language minority students.

The E-Learning Plan would include professional development opportunities for teachers to become familiar with innovative practices reflective of the skills needed for 21st century learning. Such practices would be research based and would include a constructivist approach, the flipped classroom model and [Universal Design for Learning.](http://www.udlcenter.org/aboutudl/whatisudl/3principles)  Teachers would be encouraged to become “risk takers” and to work collaboratively as a team.

Community partnerships would also be developed in order to foster learning outside of the confines of the classroom. Such partnerships would include the STEM education program at [Liberty Science Center](http://lsc.org/for-educators/) in which ongoing classroom visits to LSC would promote mastery and opportunities for hands-on investigation. It would also include the [Partnership to Improve Student Achievement](http://www.ciese.org/pisa/) which is a program sponsored by the Stevens Institute of Technology for students in grades 3-5. They would promote science inquiry and engineering design for both teachers and students. These partnerships along with a community-based afterschool program such as the YMCA Robotics Club would provide students with enrichment opportunities to enhance student learning.

Some of the existing challenges being faced involve the sustainability of the existing

ecosystem. There is currently an infrastructure in place to support the levels of bandwidth needed to meet the instructional and assessment requirements of the school. Classroom desktop computers, Chromebook carts, iPad carts and laptops are also readily available; however, a technology teacher/facilitator has not been deemed necessary by the district. This presents an enormous challenge in terms of the distribution, the collection and the maintenance of the equipment. It also impacts the successfully integration of educational technology within the school setting. In terms of troubleshooting, a technician is assigned to the school for 3 hours a week to assist with any major helpdesk concerns. This level of support does not meet the demands of a school with over 40 classrooms and numerous devices.

Another key challenge includes the lack of professional development in the area of educational technology. At the district level, the majority of the professional development has been content driven with an increased focus on reading, writing and mathematics. This laser-beam focus is in direct response to the pressures of meeting performance goals on statewide-standardized assessments and the increased demands of the [Partnership for Assessment of Readiness for College and Careers (PARCC)](http://www.parcconline.org/about).

The existing curriculum is also prescriptive and follows a strict pacing chart. If teachers do not adhere to the pacing chart they will not be able to provide the content that is being covered on the quarterly benchmark assessments. This presents a huge challenge since student performance on the quarterly benchmarks is reported regularly to the state and is a direct reflection of the school. As a result of the high stakes testing, teachers are often unwilling to deviate from the existing curriculum and pacing chart.

My ability to bring people together to work on a common goal is one of my strengths. This philosophy is based on a team-leadership approach and is designed to support organizational groups with a specific task or objective. As an instructional leader, it is essential to empower those around you. If you are able to successfully create and manage teams you will be able to successfully accomplish the desired goals.

One of the main issues that will need to be addressed is the need for increased support from the district level. Generally speaking, public schools are not autonomous and do not work in isolation. They are merely an extension of a greater system. In order to write and develop a plan that will work in my environment, a shared vision will need to be established between the local school and the district office. In doing so, it will afford the flexibility needed to institute the changes described in the E-Learning Plan to support a STEM magnet school.

**Funding Proposal**

One of the key elements in designing the STEM magnet schools is the need to hire a technology teacher/facilitator. The role of the technology teacher/facilitator would be instrumental in ensuring the success of the program. First of all, by hiring a technology facilitator it would provide the opportunity to conduct “in house” professional development which would save the district thousands of dollars. Consultants are currently charging upwards of $2,000 per day to provide these types of services and this would eliminate the cost factor associated with it.

A technology teacher/facilitator would also be able to provide “on demand” follow-up training since they will already be on site. More often than not, when follow-up training is needed, the instructional staff needs to wait for the next support visit which can takes weeks and sometimes months depending on funding and the length of the contract. The training that would be provided would be content based with a focus on STEM. This would provide teachers with an opportunity to gain mastery in a more specialized area. The technology teacher/facilitator would also be able to extend the learning into the classroom in a team-teaching setting. In doing so, the students would benefit from the expertise of both teachers. It would also decrease the student-teacher ratio as a strategy for improving the academic performance.

The technology teacher/facilitator would also be a part of the greater ecosystem. The individual would be responsible to the distribution, collection and maintenance of the devices. By taking on this role, it will provide classroom teachers with greater accessibility to the devices and will facilitate the inventory process. He/she would also be responsible for facilitating educational experiences between the parents and the school community.

The funding sources for this initiative are varied and include school-based funds, Title I funds, Title III funds, IDEA funds, Abbott Funds and various grants. Every year, schools are allotted a sum of money based on student enrollment. The funding allocations from the school-based funds would be used to hire a technology/facilitator for the upcoming school year. From an economic standpoint, the cost associated with this position will certainly pay off in the long run since it is a “win win” situation for all.

Title I funds, which are part of the federal program that provides funding to local school districts known as ESEA, would be used to replace obsolete equipment. Title III funds would be earmarked to provide technology resources such as Smartboards and 1:1 devices for Limited English Proficient (LEP) children. IDEA funds would be used exclusively to purchase assistive devices for special needs students while Abbott funds would provide technology resources in early childhood classrooms.

Various grants would supplement the existing budget. The Liberty Science Center and the Stevens Institute of Technology would be responsible for funding professional development for teachers. In addition, both institutions would cover the costs associated with the student outreach component. Lastly, the [21st Century Grant](http://www.state.nj.us/education/21cclc/) would cover all of the costs associated with funding the YMCA and the afterschool Robotics Club.

Creating a model STEM magnet school in a PreK-5 setting will provide a vast array of opportunities where they do not exist today. It is cost effective and will level the playing field to provide equal access for diverse learners with challenging socioeconomic backgrounds. Content mastery in the field of STEM will also lay the foundational work for the journey ahead. This initiative will also allow teachers to expand upon their creativity and “ditch the box.” Then and only then will authentic learning truly take place.

**Conclusion**

The success of the plan will be dependent upon evidence of student achievement throughout the course of the academic year. According to Brown and Green, student success should be measured at different stages and on different elements throughout the process. The three different types of major evaluations that are recommended include the learner evaluation, a formative evaluation and a summative evaluation (p. 137). By carefully monitoring student performance in the program, it will place a pulse on the learning process which will provide a means to adjust the instruction accordingly.

References

Brown, A. and Green, T. (2011). *The essentials of instructional design: Connecting fundamental*

*principles with process and practice* (2nd edition). Pearson Education, Inc. Boston, MA.

Holland, B. (2014, November 10). Building your edtech ecosystem. (Web log post). Retrieved

on August 15, 2015 from <http://www.edutopia.org/blog/building-your-tech-ecosystem-beth-holland>

Senge. P. (2006).  *The fifth discipline: The art and practice of the learning organization*. Revised edition.  New York, NY: Doubleday.

U.S. Bureau of Labor Statistics. (2014). An overview of employment and wages in science,

technology, engineering and math (STEM) groups. Retrieved on August 14, 2015 from <http://www.bls.gov/opub/btn/volume-3/an-overview-of-employment.htm>

U.S. Department of Education. (March, 2010). College-and career-ready standards and

assessments. Retrieved on August 13, 2015 from http://www2.ed.gov/policy/elsec/leg/blueprint/faq/college-career.pdf