A Case Study Analysis on Technology Integration
Nicholas Gurrieri
EDU 628: Educational Technology Leadership
Dr. Peter Madonia

Introduction

The question of how to effectively integrate technology into schools has been discussed extensively. In the 1990's, as more money was being spent on technology than capital goods (Schrum, 2011), educational institutions had a desire to not only see the potential of technology integration, but allocate resources to ensure it's effective use. In 1999, technology integration in schools was not widespread particularly in urban settings. It was found that internet access was available in only 39% of schools that had 70% or higher rates of free or reduced lunch (Schrum, 2011). Also, questions remained over whether or not those uses of technology were effective and in line with the mission of those schools.

From 1999-2002, a case study of 3 mid-west, urban schools was conducted in order to document the impact of technology integration through the implementation of a strategic technology plan. The case study was guided by 3 questions:

1. How do schools use the fiscal and human resources to support technology use?

2. How does the existing culture or school ecosystem impact technology integration?

3. What factors mediate decisions regarding technology integration in schools?

(Schrum, 2011)

One such school that was studied was Central Elementary School. Central Elementary school served 650 students, 80% of which came from other neighborhoods. 68% of students qualified for free or reduced lunch. 72% of students were African American, while 16% were Caucasian, and 12% were Native American, Asian, or Hispanic (Schrum, 2011). The school had older Mac computers, some inkjet printers, and small local networks that had limited internet access and only allowed for very limited use of devices (Schrum, 2011). Teachers at the school also reported difficulty with the use of technology as it was very old and outdated (Schrum, 2011). A grant called PT3 supported increased technology integration at the school along with 2 other partner

schools in the community. The results of the grant, the main problems encountered in the case, alternate solutions for the problem, and a rationale for the alternate solution will be provided in subsequent sections of this analysis.

<div align="center">**Results of the Grant**</div>

The grant for Central Elementary School yielded mostly positive results. At the beginning of the grant, the teachers reported difficulty with using the technology as it was very old, and each class was only granted 45 minutes of computer lab time per week, most of which was devoted to converting written "sloppy copy" drafts of writing to word processed reports. The use of computers was mostly devoted to that or "drill and kill" style practice, which only served to widen the achievement gap in the school (Schrum, 2011).

The positive changes within the grant were the result of decision making on part of the principal. The principal made a decision to hire a knowledgeable tech specialist to install a network server, put outdated or broken equipment in a warehouse, renew any licenses for useful software, and eliminate programs that had no educational benefit (Schrum, 2011). The specialist also worked with teachers to improve tech use proficiency. The principal served as the facilitator and used the advice of the tech specialist and the guidance of teachers to make informed decisions about technology and what to include in the plan. One of the suggestions was to increase the use of the computer lab from 45 minutes a week to whatever time is needed. Teachers made suggestions, such as the installation of interactive whiteboards, laptop carts for in classroom use, and the allocation of funds to professional development for technology use. The principal not only supported those suggestions, but allocated time and funds to support professional development on the use of those technologies. Essentially, the technology used went from being seen as an add on or reward to an actual part of the curriculum, as evidenced by what

the students were able to do with the technology. Some students used technology to pursue

questions, learn content at a deeper level, produce new and inventive learning artifacts, and

collaborate with peers to share their learning (Schrum, 2011).

Problems

One of the perceived problems of the grant was that the grant coordinator worked with

the tech specialists in a behind the scenes fashion, and was rarely, if ever on site. The grant

coordinator did not have a presence, nor did they provide PD for teachers to see the pan follow

through. Also, teachers used technology when they perceived it as useful, and they were not

required to use it or document it's effects on instruction. There was usually at least one teacher

per grade level at the school that became more technologically savvy and was proficient in

technology use, but some teachers did not become more proficient or see the benefits. This lack

of buy-in from all teachers in the school is a problem because it raises the question of whether or

not the grant accomplished its mission of improving technological proficiency for teachers and

students.

Solutions

A solution for the problems would first be to expand the role of the grant coordinator.

The number of stakeholders involved in the plan also seemed limited. It seemed there were a few

tech specialists that were on site, but there was no mention of someone at district level or a

curriculum designer in the plan. Also, to avoid the disparity between teachers' level of

technology use, there should have been a method developed to provide useful metrics for the

educational use of technology in the district, in a way that was a bit more quantitative (Garland

& Tejada, 2013). The measures of the study were more qualitative in nature, but quantitative

measures would have been appropriate in this situation, such as a survey asking teachers how

much time they devoted to technology use in the classroom. Also, the option for integrating technology in the classroom should not have been an option. Each teacher should have been amply trained to implement some form of technology in the classroom and their results of it's implementation should have been documented.

Rationale for Solutions

The rationale for these solutions are based on the National Educational Technology Plan's goal of increasing student productivity and making better use of time, money, and staff. The plan includes some key points that suggest that there should be a development of useful metrics for the educational use of technology in states and districts (Garland & Tejada, 2013). There should also be an evaluative component to ensure that students are progressing seamlessly (Garland & Tejada, 2013). The school leader should also have communicated the strategic plan and vision to teachers to ensure buy in. While the principal did spearhead a great deal of change in the institution, the fact that some teachers stayed stuck in their old ways at the end of 3 years brings about concerns as to whether or not the grant was as effective as it could have been.

Conclusion

In short, the Central Elementary School's implementation of a technology plan to effectively use the resources from the PT3 grant yielded promising results. The problems identified are problems usually seen whenever large scale change is happening in an institution. The principal made use of staff wisely and included teachers in the decision making process. The problems mentioned could have been mitigated through better communication of the technology plan to the teachers in the school. The Central Elementary School's case study illustrates the importance of communication during the implementation of a technology plan. Overall, I think the plan was successful despite some drawbacks.

References

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