Asian Social Science
www.ccsenet.org/ass
Vol. 6, No. 1
January 2010

Technology Leadership among School Principals: A Technology-Coordinator's Perspective

Chien-hsing Wang
Graduate Institute of Education, National Changhua University of Education
No.1, Jin-De Road, Changhua City, Taiwan
Tel: 1-886-723-2105#2225 E-mail: guchwang@cc.ncue.edu.tw

The research is financed by National Science Council, Taiwan

Abstract

This paper describes how the principal's leadership impeded the process of technology-integration in an elementary school through the viewpoints of the technology- coordinator. First of all, the principal did not have a vision of technology integration for school education. Neither did he make a commitment on technology integration. Second, the principal did not take up the responsibility for managing resources for technology implementation. Neither did he show support for the technology coordinator as regards coping with administrative conflicts. Finally, the principal did not empower the technology coordinator for technology integration. All of these frustrated the technology coordinator and hindered the effective implementation of school-wide technology integration.

Keywords: Technology-leadership, Technology-integration

1. Introduction

Technology serves teaching and learning best when educators have clear goals. Educators must teach students the skills and ways of thinking needed for success in the technology-rich workplace of tomorrow. Educators are encouraged to take advantage of the potential of technology to help students to meet the new expectations of society. Proponents believe technology can transform school learning and teaching by helping students to use their minds profoundly through creative and critical thinking. Unfortunately, this significant transformation in school education has not met initial expectations (Dawson & Rakes, 2003; Staples, Pugach, & Himes, 2005). Creighton (2003, p. 2) pointed out that, "even the best of schools have barely tapped the potential of technology to radically impact teaching and learning." One overlooked problem is the effect of technology leadership by principals on technology integration (Holland, 2000). This case study examines the important role the principal played in implementing technology in a school at Taiwan.

2. Method

This paper addressed the practice of the principal's leadership through the stories of the technology coordinator who took up the responsibility for implementing school-wide technology integration. The use of the story-telling method was because story-telling revealed how individuals related themselves and their performance to the power systems and culture within which they worked and lived (Carter, 1993; Linde, 1993; Riessman, 1993; Seidman, 2006). Interview data, as a major means of self-presentation projecting part of real-life, is quite robust for life-story research (Linde, 1993). Hence, the researcher used the interview technique to collect data for this study.

2.1 Data Analysis

There is no standard set of procedures for narrative analysis (Riessman, 1993). The product of narrative analysis is partial, alternative truth. This is because transforming talk into written text involves selection and reduction. The aim of narrative analysis is believability and enlargement of understanding. Therefore, Riessman emphasizes the trustworthiness of the interpretations as the critical issue in narrative analysis. One way of helping others to determine the trustworthiness of a narrative study is to make visible what the researcher did and to describe how the interpretations were produced. Thus, the following is a description of what the researcher did and how the interpretations were produced.

First, the researcher chunked all the digital audio interviews into units of discourse and conducted open-coding. Then, the researcher wrote the stories based on the interview transcripts. Since in the stories, all indicated the principal's behaviors had an impact on the technology coordinator along with the implementation of technology integration, the theme of the principal's leadership emerged. The researcher then identified the practice of the principal's leadership that impeded the processes of technology integration in this school.

3. The Case

The analyzed school was located in a sub-urban community in which the socioeconomic status of the residents is low or middle. The analyzed school was considered disadvantaged in technology implementation in comparison with the well-financed schools in metropolitan areas. This school received minimal funds/grants from local governments or organizations. The technology coordinator recalled, "Back in the early of 1990s, the government started many technology policies, and lots of money was given to schools in metropolitan areas. But schools like ours received nothing. None of the schools in our area was funded. Thus, there was no computer classroom in any schools in our area."

The technology coordinator attempted to narrow the digital divide between students of this school and those of metropolitan schools because he did not want their students left behind at the very first beginning. He volunteered to provide teachers with technology skills training for several years. Those who participated in his training later became major human capital for implementing technology-integration. With no administrative support, the technology coordinator established the first government-funded computer classroom in that area in the school year of 1997. The coordinator said, "In the school year of 1997, we had our first computer classroom, the first government-funded one in our area. As a matter of fact, that computer classroom was funded because some of the colleagues and I visited a significant person who was a good friend of the mayor. We did it because we felt we were ready, and it's time for our school to have a computer classroom. ***All of this had been done without any involvement of the principal***. Since then, we started applying for grants and received funds every year."

The technology coordinator and his team actively applied for any possible grants that allowed them to purchase hardware and software for the school. The outstanding performance of his team helped the school win several awards. The school received government grants for Technology-Integration Seed Schools for three consecutive years for beginning, advanced and model-level programs. This success further encouraged the coordinator and his team. However, two major conflicts arose. One was resource management. Due to the insufficient equipment, the coordinator insisted that the team members have the privilege to use the equipment first since they were applying for the grants. He also insisted that the funds should not be used for other purposes. His insistence caused conflicts between he and other administrators, which he was frustrated. The coordinator said, "That bothered me most. Administrators at elementary schools always think that all grants received belong to the school. They have the right to decide how to use the money. I don't think so. To me, it's the team members who have been fighting for the grants. They are the ones needed to be take care of first. The disagreement resulted in administrative conflict. Some complained, 'Only the team has the right to use the equipment.' Such administrative conflict hindered the implementation of technology integration in our school. For example, I gave up applying for government grants just because I was afraid that the new grant would cause more administrative conflicts."

In addition to the resource management, the responsibilities of the technology coordinator were another key issue. The success of the team made the school well-known, so the coordinator established a good reputation. He received many titles in the professional communities outside of the school. It's a glory to him. But it also meant that he had to spend much time on professional activities outside the school and spent less time on school activities. Some administrators also believed that the technology coordinator should be responsible for designing and maintaining websites for all units in school. Whenever a website was needed for school evaluation, it was considered the responsibility of the technology coordinator. However, the technology coordinator did not agree. He complained, "Of course, we need to collaborate with others. Like B, when she was in the position of administration, she created websites for her unit. She asked me for help if she encountered problems,. It's OK. But, some administrators believe that it's the job of the technology coordinator to create websites for all. I cannot believe it. My job is not to design websites for others. It's impossible for me to create websites for others at the cost of my own business. I don't have time for that. But when I said I couldn't, there came the rumor: "He is too busy in out-of-school activities to do his school job. Then, more and more rumors occurred. All of this cracked down on the morale of our team. They didn't want to be the target just because of what they did. So, I finally quit almost all of my positions outside the school."

The coordinator was so frustrated that he and his team became less active in technology integration. They felt too tired to fight. The coordinator believed that the lack of strong leadership was the major obstacle to effective technology integration. He emphasized, "It is because of the lack of strong leadership supporting us. As mentioned above, the first computer classroom was a collaborative effort by some team members. The principal plays no role and has never been involved from the very beginning till now. Although we have established a reputation regarding technology integration, we would do better if we never had those administrative conflicts."

4. Discussion

Technology leadership is more important for effective technology-integration than technology infrastructure (Anderson & Dexter, 2005). Meaningful technology-integration is far more complicated than just purchasing hardware and software. Technology-integration cannot succeed in the absence of effective technology leadership by the principal. Leadership by the principal is essential for effective technology integration (Anderson & Dexter, 2005; Bailey, 1997; Chang & Wu, 2008; ChanLin, Hong, Horng, Chang, & Chu, 2006; Creighton, 2003; Gosmire & Grady, 2007; Gurr, Drysdale, & Mulford, 2006; Hew & Brush, 2007; Holland, 2000; Honey, Culp, & Carrigg, 2000; Murray, 2004; Sandholtz, Ringstaff, & Dwyer, 1997; Sharp, 1998). Sharp (1998, p.75) observed, "No matter how dedicated teachers may be and how convinced they may be about the benefits of technology in the classroom, they will not be able to accomplish much if they do not have the support--both financial and moral--from their principals." The case described above corresponds to Sharp's statement.

4.1 Lack of Vision and Commitment

The aforementioned case reveals that the lack of vision and commitment by the principle is a key negative influence on implementing technology integration. Innovations cannot be successful without people who commit themselves with enthusiasm and self-motivation to the new ideas (Gemunden, Salomo, & Hulzle, 2007). However, this case demonstrates that even highly motivated teachers with enthusiasm for technology integration can be defeated by the lack of commitment by the principle. Although the technology coordinator and his team assumed responsibility for technology integration and established a reputation for the school, the principal showed no interest in what they accomplished. Nor did the principal give recognition to what the team had done. This made the coordinator feel like a soldier fighting alone in the battlefield. He was discouraged and frustrated. This outcome shows the importance of the principal in implementing technology integration. ChanLin et al. (2006) argued that principles who were open to and supportive of technology encouraged teachers to take the initiative to integrate technology. Principals need not be tech-savvy, but they must show interest in what teachers are learning/teaching with technology (Creighton, 2003; Dawson & Rakes, 2003; Sandholtz et al., 1997). By showing interest and vision, principals can boost the morale of teachers regarding technology-integration, and *vice versa*.

4.2 Lack of Resource Management

If the principal had a clear technology vision and a practical technology plan for his leadership, the administrative conflict on the budget and the responsibility of the technology coordinator would not damage the interpersonal relationship. Clearly, the vision of technology-integration was not that of the principal, nor was it a shared vision of school administrators. The vision was shared only by the technology coordinator and his team. Hence, institutionalizing technology-integration was difficult. Furthermore, no practical technology plan was developed. Stakeholders were not involved in the budget decision-making process. Doubtlessly, budget issues caused interpersonal conflicts between the coordinator and other administrators. A practical technology plan can prevent the budget issue from interpersonal conflict because it can be the key reference for how the budget should be spent instead of arguing who has the right to make the decision. This case reveals that technology implementation can be hindered if the principal did not take up the responsibility for managing resources effectively. This finding is consistent with the literature. The key to effective technology integration lies in the ability of the principal to lead and guide their technology coordinators and other staff members by communicating the importance and the power of technology in education (Murray, 2004). Principals play a key role in resource management (ChanLin et al., 2006; Dawson & Rakes, 2003; Fullan, 2007). They should not allow budget constraints to prevent the use of technology by teachers. They should wisely spend technology funding and actively pursue the use of technology by employing creative thinking and innovative partnerships to overcome resource shortages.

4.3 Lack of Empowerment Leadership

Finally, the principal in this case failed to foster potential technology leaders. Current leadership literature emphasizes the importance of fostering potential leaders for effective leadership (Bailey, 1997; Bennis, 2002; Kotter, 1998; McGee-Cooper & Trammell, 2002). Effective technology integration requires a team approach. A principal must foster potential technology leaders through empowerment (ChanLin et al., 2006; Dawson & Rakes, 2003; Gemunden et al., 2007; Staples et al., 2005). Unfortunately, the principal failed to do so even though the coordinator and his team showed great potential to become technology leaders. The team won many awards for the school regarding technology-integration because of their outstanding performance. The many roles of the technology coordinator outside the school indicated that his ability was acknowledged by the professional communities. However, he did not feel empowered in the school. On the contrary, he felt isolated. The principal did not help the coordinator to balance his school responsibilities with those of the professional communities. A clear job description for the position of technology coordinator would help both the coordinator and other administrators to clarify the responsibility of the technology coordinator. The coordinator would be less likely to feel overloaded, mistreated or misunderstood. The team would not feel that they were the target of complaints by others.

5. Conclusion

Previous literature has focused on teachers' practice of effective technology-integration. The findings of this case study pinpoint the impact of leadership by principals on technology-integration in schools. The lack of commitment and strong technology leadership by the principal negatively influences technology-integration. The lack of support and recognition from the principal in this case negatively affected the morale of the technology coordinator and his outstanding team, who were highly motivated regarding technology-integration. The coordinator and his team could not become effective change agents in the school because of the lack of the principal's empowerment. The budget and job responsibilities issues cased the problems of interpersonal relationships, which frustrated the coordinator and reduced his potential to become an effective technology leader. Thus, future research should explore more cases regarding how leadership by school principals affects technology integration. Moreover, further research need to investigate the professional development components needed for principals to become effective technology leaders.

Acknowledgement

This paper is part of the results from the project sponsored by National Science Council [NSC- 97-2511-S-018-005]

References

Anderson, R. E., & Dexter, S. (2005). School technology leadership: An empirical investigation of prevalence and effect. *Educational Administration Quarterly,* 40(1), 49-82.

Bailey, G. D. (1997). What technology leaders need to know: The essential top 10 concepts for technology integration in the 21st century. *Learning and Leading with Technology,* 25(1), 57-62.

Bennis, W. (2002). Become a tomorrow leader. In L. C. Spears & M. Lawrence (Eds.), *Focus on leadership: Servant-leadership for the twenty-first century* (pp. 101-109). New York: John Wiley & Sons.

Chang, I., & Wu, Y. (2008). A Study of the relationships between principals' technology leadership and teachers' teaching efficiency. *Journal of Educational Research and Development,* 4(1), 171-193.

ChanLin, L. J., Hong, J. C., Horng, J. S., Chang, S. H., & Chu, H. C. (2006). Factors influencing technology integration in teaching – a Taiwanese perspective. *Innovations in Education and Training International,* 43(1), 57-68.

Creighton, T. (2003). *The principal as technology leader*. Thousand Oaks, CA: Corwin Press.

Dawson, C., & Rakes, G. C. (2003). The Influence of Principals' Technology Training on the Integration of Technology into Schools. *Journal of Research on Technology in Education,* 36(1), 29-49.

Fullan, M. (2007). *The new meaning of educational change* (4th ed.). New York: Teachers College, Columbia University.

Gemunden, H. G., Salomo, S., & Hulzle, K. (2007). Role models for radical innovations in times of open innovation. *Creativity and Innovation,* 16(4), 408-421.

Gosmire, D., & Grady, M. L. (2007). A bumpy road: Principal as technology leader. *Principal Leadership,* 7(6), 16-21.

Gurr, D., Drysdale, L., & Mulford, B. (2006). Models of successful principal leadership. *School Leadership & Management,* 26(4), 371-395.

Hew, K. F., & Brush, T. (2007). Integrating technology into K-12 teaching and learning: Current knowledge gaps and recommendations for future research. *Education Technology Research & Development,* (55), 223-252.

Holland, L. (2000). A different divide: preparing tech-savvy leaders. *Leadership,* 30(1), 8-12.

Honey, M., Culp, K. M., & Carrigg, F. (2000). Perspectives on technology and education research: Lessons from the past and present. *Journal of Educational Computing Research,* 23(1), 5-14.

Kotter, J. P. (1998). What leaders really do? In *Harvard Business Review on Leadership* (pp. 37-60). Boston, MA: Harvard Business School Press.

McGee-Cooper, A., & Trammell, D. (2002). From hero-as-leader to servant-leader. In L. C. Spears & M. Lawrence (Eds.), *Focus on leadership: Servant-leadership for the twenty-first century* (pp. 141-151). New York: John Wiley & Sons.

Murray, C. (2004). In Ed Tech, leaders matter most. (cover story). *eSchool News,* 7(7), 1-25.

Sandholtz, J. H., Ringstaff, C., & Dwyer, D. C. (1997). *Teaching with technology: Creating student-centered classrooms.* New York: Teachers College, Columbia University.

Sharp, W. L. (1998). School administrators need technology too. *T.H.E. Journal,* 26(2), 75-76.

Staples, A., Pugach, M. C., & Himes, D. (2005). Rethinking the Technology Integration Challenge: Cases from Three Urban Elementary Schools. *Journal of Research on Technology in Education,* 37(3), 285-311.