The Administrator's Role

Strategies for Fostering Staff Development

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In 1999, funding from a federal technology innovation challenge grant and the state of Maryland enabled the creation of the Maryland Technology Academy (MTA). The MTA is a collaboration of Johns Hopkins University, Towson University, and the Maryland State Department of Education formed with the goal of developing a network of knowledgeable and skilled technology leaders in schools across the entire state. (***Editor's note:*** For more on the MTA and other URLs, see Resources on p. 17.)

Based on professional development and follow-up qualitative research with more than 400 teachers throughout the state, we've come up with some useful recommendations for administrators who intend to promote effective technology use. The teacher leaders were guided to plan with administrators and to help other teachers learn how to integrate technology into classroom practice. Several features of the MTA program are presented as well as research findings about essential support administrators provided to help teachers effectively use technology in their classrooms.

Methods

The program evaluation employed a range of data collection strategies linked to qualitative and quantitative analysis. We're focusing mostly on the qualitative data spanning the first four years of the program. First, program evaluation findings are summarized. Each year we surveyed the fellows to determine attitudes and changes in their school-based leadership.

The qualitative data were collected in two processes across the dura-

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tion of the grant. First, a series of 13 extensive case studies of teachers at 10 schools were completed. These cases involved multiple visits to the same school over a two-year period. Each case involved discussions with several teachers and administrators at these sites. Second, David conducted a series of follow-up interviews and school visits with six additional teachers from six additional schools to corroborate and refine the findings of the first series of in-depth interviews and school visits. The qualitative data highlights the types of administrative aid that are necessary to support regular and sustained use of technology in K–12 classrooms. This study is guided by the fieldwork of Miles and Huberman with thorough review and analysis of cases that lead to key themes noted across these organizations.

Program Evaluation

Fellows contributed to their schools and districts by providing training and assistance to other educators. On a 5-point scale (with 5 indicating yes definitely, and 4 indicating probably) fellows rated "able to provide more effective training to teachers" with a mean score of 4.6. They also provided a substantial amount of training and assistance to other educators through just-in-time training, mentoring, and inservice workshops. Fellows held a wide variety of leadership positions. Most commonly, their leadership roles were at the building level, in the capacity of serving on the school improvement team or school technology committee. During the four years of the program, 86% of the fellows indicated that they planned and delivered professional development to other faculty in their school. Overall, the vast majority of fellows believed the program had a substantial effect on their instructional practice, and they were much better prepared to help others use technology effectively.

The MTA program provided instruction in strategies for providing professional development as well as opportunities for practice. Fellows used technology more effectively and frequently after participating in the MTA program. As evidence, on the same 5-point scale, fellows strongly rated their ability to use technology more effectively in instruction, with a mean score of 4.7.

Qualitative Results

A system for successful technology integration arose from the data collection efforts and detailed discussions with teachers. This system is the basis for a context of successful technology use and provides the infrastructure to facilitate regular classroom use of technology. It has several necessary components, including district-level and school-based administrators who see the benefits of technology integration and provide financial and human resources to support it. As part of that support system, architecture, hardware, and software infrastructure must be created and maintained. It must allow for easy access and use of technology in the classroom. In addition, teachers require professional development in the use of effective strategies for employing instructional technology.

Role of Administrators

The data collected in the study can be placed into categories of support that bring about effective technology use. At the center of the extensive case studies report, five conditions for success in using classroom technology are noted. The first condition for success highlights the role of administrators (and the assistance they provide) as critical in supporting teachers and professional development in the use of technology. We are focusing on school-based administrators and their actions and influence on technology use in the classroom.

The data in this study reveal five forms of administrative support that are necessary to promote the use of technology in the K–12 classroom. They are:

1. faculty development
2. financial expenditures
3. organizational structures
4. personal commitment
5. leadership support

There are numerous examples of the school context that illustrate the role of administrators that lead to successful integration of technology within instruction. These actual examples are practical pictures of technology use. In these cases the focus of the fellows' comments are on principal and administrative support. The names of the eight teachers have been changed so that anonymity is ensured for all respondents.

Faculty Development

Faculty development refers to teaching K–12 educators effective uses of technology in their own teaching. It is often exhibited by providing the opportunities and time for teachers to attend short courses, noncredit workshops, and graduate courses in educational technology.

Two examples portray ensuring adequate and useful faculty development. The first is in Fran's school and administration. Twice a week, a trainer from a related grant program

provided a session for teachers during planning periods. These sessions were voluntary but the trainer reported that he was "often swamped" by teacher interest. Fran's principal valued faculty development in technology, which created great interest among the faculty.

In Grace's school, the principal stressed that it was important to train teachers to learn how to incorporate technology into instruction before they moved into a new building. He stated, "If we continue to do business the way we've always done business, the new building will be useless. We have to change what's been done in the school." In this case, a new physical facility helped spur staff development with instructional technology.

Financial Assistance

Financial expenditures support hardware, software, supplies, consulting, and teaching substitutes to enhance technology use. The need to provide sufficient financial resources for technology was highlighted in Casey's school. The administration fully supported the use of technology, worked to increase access to technology resources, and strongly encouraged teachers to use technology for program administration and in instruction. Beyond verbal support, Casey believed that the administration adequately funds technology purchases. As she put it, "He supports it. He funds it. He makes sure we have what we need." This is a clear example of funding priorities following school goals.

Organizational Structures

Administrative support can also be provided through an array of organizational structures and processes such as minigrants to promote technology use, active technology committees, school improvement teams that connect technology to curriculum and achievement reform, and fund raising through the PTA and other annual events held at the school.

Debbie's school provides an example of several organizational structures that support effective technology use. Even in an environment of concern for improving test scores, the school's administration was still committed to technology integration. There was an active technology committee that encouraged other teachers to use technology.

According to Debbie, part of this influence was due to the accessibility of the technology committee members. As she put it, "When I share with teachers how easy it is to use different programs and devices . . . they are more likely to try." Debbie was encouraged by the principal to buy the peripherals she needed, and other teachers were encouraged to attend training. As another teacher in Debbie's school states, "We have spent our own time going to workshops, knowing that currently we don't have the hardware, but with the belief we will get it somehow." The administration has made an effort to hire teachers "who buy into our mission" and are interested in using technology.

Personal Commitment

Personal commitment refers to key administrators who use, value the use of, and expect the use of technology throughout the school for improved instruction and more effective operations. In some situations this is achieved when administrators are avid supporters or cheerleaders.

Henry's school provides a view of personal commitment and leadership that supports technology integration. According to the media specialist in the school, the principal is a very active supporter of technology use within the school and is seen as a leader for other administrators. Henry's principal attended the administrators symposium held in conjunction with the MTA leadership program. He also encourages professional development for teachers and attends conferences to support his faculty who present. Based on the data, this is a case in which the principal has shown superior personal interest in using technology.

In Emily's school, the administration aids the technology leaders in substantial ways. The principal is very positive about technology and supports its use and integration. He participates in staff development sessions to increase his own technology literacy so that he can provide guidance and leadership to teachers. Emily, the technology specialist, has never been turned down when she wants to focus on technology for staff development. The principal supported teachers attending the MTA leadership programs and other related technology institutes.

Leadership Support

School-based administration can make a significant impact by helping those teachers who are technology leaders in schools. One key area of support is to honor and value faculty who take the lead in using technology. Additional examples noted in

the field include regularly discussing technology usage in faculty meetings, providing monetary incentives for teachers who use technology in their teaching, encouraging faculty to enroll in graduate courses in educational and instructional technology, and expecting technology integration to be a component of classroom observations and long-term teaching plans.

Arnold's school provides an illustration of administrative leadership. After just one year at this new elementary school, Arnold reported that he is widely recognized as a technology resource and colleagues frequently consult him when planning their lessons. Related to that success, the principal at this school has asked him to make recommendations on how the school can improve its technology infrastructure. Vital support comes from administrators who recognize and highlight the work of school technology leaders.

The examples gleaned from results of fieldwork interviews indicate that these five forms of administrative support can have a significant effect on technology integration within schools and specifically classrooms. Principals have a leading role in helping to promote technology integration through active orchestration of these school-based processes and structures.

Pitfalls to Avoid

Alternatively, there are examples of the school context that hinder successful integration of technology within instruction. In these cases, the fellows' comments focus on barriers created by principals and school-based administration. Two illustrations of barriers to technology use are included with the intention of raising awareness and providing planning strategies to avoid these practices

In Jenny's school, there were several technical barriers to using technology. One was that the wiring had not yet been completed, so teachers could not use the computers in their teaching. In addition, many of the teachers had come from schools using Windows, and the Mac platform was the technology of choice in this school. This presented faculty with the challenge of learning a new system. But perhaps more important, the perception was "technology was not expected to transform what teachers do."

Kathy's school is a case of an absence of ongoing support for technology beyond the initial statement declaring technology a priority. Kathy said that the principal provided funding for technology and training and encouraged its use by saying, "you have all this technology, use it." However, the evidence suggests ongoing faculty development was not available. In the end, this priority got lost behind several other more noteworthy priorities for this school.

After four years of working with these fellows, one salient point is that school-based administrators have a huge effect on technology use in schools. Administrators can hinder the use of technology through many forces. Lack of support is often unintentional. Thus, these computing teachers suggest that administrators be sure to support technology use, which can be linked to improved instruction and achievement.

Summary

Overall, technology integration often was effectively achieved when fellows planned their teaching activities in concert with school improvement teams and their administration. In addition, school-based administration followed through on those plans by creating supportive environments with financial assistance, connected organizational structures, and ongoing, useful faculty development. Effective principals often demonstrated leadership support through expectations of daily use of technology and personal commitment to well-planned technology integration. These case studies lead to the conclusion that technology integration can be successful (even melodic) when key administrators fulfill a vital role in the orchestration of technology.

Resources

Macro International Inc. (2003). *Classroom chronicles: Case studies of technology-using teachers.* Calverton, MD: Author.

Maryland Technology Academy Program: http://www.mdtechacademy.org/

Matrix of MTA Web-based instructional projects: http://cte.jhu.edu/techacademy/web/matrix/projects.html

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