Sustainability and Transferability of Instructional Reforms

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Abstract

This paper presents two preliminary conclusions about the sustainability and transferability of the Innovative Pedagogical Practices Using Technology (IPPUT) practiced by teachers at the schools in this group of case studies. One finding is that the teachers who practice the IPPUT consistently report that they expect to continue the instructional practice in the future. The second finding is that systemic factors such as school culture, district support, and state policies influence the sustainability and transferability of the IPPUT. Systemic factors that were most mentioned included: funding, shared vision; strong leadership that is shared with teachers; public and private sector partnerships; professional development that is institutionalized and extensive; high quality technical and instructional support; climate that is supportive of reform efforts; and commitment to exploiting technological capabilities.

Sustainability and Transferability of Instructional Reforms

The schools in this group of case studies each made the commitment to improve student learning by implementing innovative pedagogical practices using technology. These innovations involved great investments in time and financial resources. Therefore, it is encouraging that the teachers say they will continue the innovations, and that teachers from all of the schools studied held this view. It appears that a change has occurred in teaching practices, not only at the school (meso) level, but also at the level of the individual teacher (micro). This level of change is important for sustainability because school-level changes may over time threaten the implementation of the innovations school-wide. Individual teachers, on the other hand, can continue the innovations to some extent within their own classrooms.

At the same time, there is reason for concern about the transferability of these reforms to other schools. The issues of funding, changes in local and state policies, changes in school leadership, teacher turnover, and teacher burnout all limit the transferability of these innovations to other schools.

Factors contributing to the Sustainability of the Instructional Reforms

There are a number of reasons why teachers at the case study schools are likely to succeed in continuing the innovations: there was school-wide involvement in implementing the innovations; the innovations are currently supported by technology but are not necessarily technology-dependent; the innovations played a role in establishing the culture of the school and a shared vision; improving student learning is the focus and guides the innovation; and the schools have learned approaches for integrating the innovations within the constraints of other needs and demands.

Shared leadership.

In most of the schools, there were indeed one or more key leaders in implementing the innovations, but these leaders did not act unilaterally; they involved other teachers in developing and implementing the innovations. For example, the Technology Specialist at Mantua Elementary said that teachers were responsible for sustaining the innovation after the principal, a leader in the school's innovation process, left the school.

> When [the principal] left--was promoted in August--some people thought, ahhh, what's going to happen when your school looses its leader. But the school is full of teacher-leaders, and the teachers-leaders picked up and continued on, and held the school up in transition which was really, really exciting and refreshing … it proved to me, the whole issue with teacher-leaders and the validity of what we're doing.

The fact that the teachers themselves sustained the innovation after a key leader's departure proved to the Technology Specialist that the innovation was not a temporary reform dependent on central leadership; rather, the innovation had become an established part of teaching practice at the school.

Innovations not dependent on technology.

Although the focus of these studies was the use of technology with innovative pedagogy, not all of the changes in pedagogical practices are dependent on the presence of technology. For

example, the constructivist approaches and high expectations for student achievement can be continued no matter what technology is available to these teachers in the future. The Technology Coordinator at Newsome Park Elementary School noted that from the start, teachers did not use the term constructivism. And yet, their view of the role of teacher reflected a constructivist view.

> I think one of the challenges was just getting the process started and getting an understanding throughout the school what constructivism is. …Yet, when they describe their teaching style and how the perceive themselves as a teacher, then they describe themselves and being a constructivist.

Therefore, the innovation is likely to be sustained in the form of constructivist approaches by these teachers even if the availability of technology changes.

Establishment of school culture and shared vision.

In two of the schools studied, the innovations were planned with the opening of those schools. Only teachers who were experienced with, or interested in, the innovation were recruited to these new schools. In the other schools, different approaches were used to ensure there was commitment to the innovation. At one school, commitment to the innovation was gained gradually, as teachers saw it having the intended impact on student learning. This gradual building of commitment suggests that the teachers would be resistant to pressure to abandon the innovations in favor of new trends. At the rest of the schools, extensive professional development helped teachers to implement and increase commitment to the innovations.

The existence of a shared vision and commitment to the instructional reforms at the case-study schools suggests that that the transferring these innovations to other schools would not be as simple as offering professional development and infusing district support. Although these components were present in the case study schools and their districts, shared vision and commitment by school faculty and staff are generated from within the school and not imposed from outside the school.

Focus on student learning.

The innovations at these schools required much time and effort for teachers to understand and implement them. In interviews, teachers and administrators often commented that the process of change had been difficult. But they said their greatest motivator throughout the process was the desire to improve student learning. This ultimate goal helped teachers to maintain a focus on the innovation, despite the many trends and issues in education that might have served to scatter their efforts. One of the teachers at Newsome Park Elementary School summarized the process of change at that school.

> That's kind of the bottom line for all of us, student learning. So it's not that we always want to get on the newest bandwagon, we want to find out what's really helping children learn. … But we have, especially those of us that have been here the five years, have really learned to respect each others' ideas and needs and start to work together to get things going for the kids. It's been a real journey in lots of ways for all of us.

Comments such as these suggest that these teachers will be committed to sustaining the innovations as long as they serve students' learning needs.

Integration of the innovation within constraints.

Schools across the country have recently been striving to find ways to effectively implement technology in the classroom. They have also been facing increasing pressure to meet accountability measures, such as improving scores on standardized tests. These schools faced the same pressures, and have had some success in integrating innovations while dealing with external pressures. For example, the principal at Mountain Middle School described how teachers there match content standards with their assessments of student learning, and with technology uses that support intended learning outcomes.

> I think standards-based education works backwards to that. It says, here's what I want kids to know now, or I've built my assessment based on what kids need to know to meet the standards, now how do I build my lesson to get them there? It's just a different view of doing that, and so I think technology, if the teacher has that end in mind, then the technology can be just one of the tools to enhance them getting there.

This process of integrating needs and goals within constraints is a process that these teachers can sustain, despite changes that may occur in school climate and access to resources.

Challenges in Sustaining and Transferring the Innovations

While individual teachers can sustain the innovations to some extent in their own classrooms, schools face considerable challenges in sustaining the reforms school-wide, and these reforms will not be easily transferred to other schools. Some of these challenges include funding, changes in local and state policies, changes in school leadership, teacher turnover, and teacher burnout.

Funding challenges.

A major challenge in every case study has been to secure funding to purchase hardware, software, and training. Keeping hardware and software up to date requires careful budgetary planning, especially if the new technology was provided as a one-time purchase. Along with the new upgrades are the expenses to train teachers to use the new technology.

While funding plays a major, if not essential role in continuing school-wide reform and maintaining technology, funding solely cannot leverage transferability of these instructional reforms. Teachers and administrators need to see that the use of technology in instruction is leading to student gains. As the principal at one school stated:

> Teachers don't receive additional money here for using technology. The incentive is that they see progress from their students. They are finding that classrooms are more dynamic. And I think that they have an intrinsic motivation to grow professionally.

State and local policy changes.

Student achievement was emphasized over technology at all of the case study schools. In no instance did anyone interviewed lose sight of the fact that the technology was a tool to facilitate instruction. This message may very well come from the districts of some of the schools. In the example below, a district policy that defunded technology specialists generated an alternative position to more closely focus on student achievement.

> Part of my position is still funded by the district, and that's why I'm called a student achievement specialist. They weren't funding technology specialists because they want

> to focus on the fact that whatever you're doing is relating to student achievement. So, I'm a student achievement specialist.

Often within the districts of the case study schools, policy changes reflected support for technology innovations. District office technology coordinators were very aware of the technologically savvy case study schools and their exemplary status and potential to model effective innovative practices.

Teacher attrition and burnout.

Teacher attrition is a challenge because presumably the innovation mastered by the teacher would also leave the school when the teacher left. Teacher burnout, staff exhaustion and cynicism often affect how, and even whether, these reforms are implemented. One aspect of the schools in these case studies that kept burnout in check was the supports in place by the school and district. The technical coordinator often provided instructional support for teachers and in some cases team-taught classes that used technology that was new to the classroom teachers.

Aside from professional development, districts also can facilitate the use of technology in the schools by providing support in fixing, upgrading, and connecting hardware as well as cataloging and evaluating software.

> We have great direction from the District office, as far as which products we will invest in. I'm not out here spending a lot of time going through catalogs and saying that this looks like a great CD ROM we can use, or this teacher and that teacher. Which I think is an advantage, because then we are not out here sort of on our own experimenting with something we think that might work. The most important is supporting the hardware, and software issues. When I've got a keyboard that is dead, that computer is out of commission for two days now, so we are having to shift around, send kids up to the media center. Because suddenly we don't have enough spots for kids who are supposed to be on computer.

Reflections Across the Case Studies

Certainly, these schools have a good probability of continuing the instructional reforms that they have adopted. The necessary systemic factors are present in the state and district environment of which each school is a part. However, the case study schools had also produced a shared vision among faculty and staff as well as a commitment to the innovations. Perhaps because systemic factors appear necessary, but not sufficient to sustain the instructional reforms, the transferability of the innovations is far less certain than their sustainability. Further analysis of the data should reveal whether this hypothesis holds true.