

**Minutes from the Invitational Conference
“Instructional Technology Specialists: Connecting All Stakeholders”**

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Welcome

Dr. C. Kent McGuire, Dean of the Temple University College of Education, welcomed the participants to Temple and apologized for missing the previous night’s dinner. He acknowledged that this might be the first meeting of its type in Pennsylvania, which is wonderful. He commended Drs. Miller, Snelbecker, and Zheng for their hard work in putting the conference together. He has long been an advocate of technology in learning, but he is mostly a grant maker. His first experience in that line of work was in 1991 at the Lilly Foundation. His portfolio had specifically to do with linking issues of policy and practice across the state. One large project, the Buddy project, was a partnership built between the foundation and IBM. Lilly chose four or five classrooms and supplied them with computers; it also gave the students home computers. It started a network called Buddy Net to connect schools to home—and homes to each other—to see what would happen when these homes were saturated with technology. One of the things that stood out was just how underprepared classroom teachers were at the time.

The Pew Charitable Trusts, where he later worked, also had two big projects to build performance standards by using technology. He saw how hard it was to move beyond questions of hardware and was disheartened to discover an abundance of technology with very little innovation. Pew was essentially “seeding the field” and getting things ready; it spent \$200 to \$300 million. Two things stand out to him: one has to do with the question of ideas and what technology enables. It might be a mistake to think of technology first and learning second, but he has been struck by the number of proposals he has read that were long on technology and short on ideas. The second issue that stands out to him has to do with building our capacity for technology use. He challenged the participants to find two or three ways in which the technology has fundamentally altered their craft. It is a slow moving boat, but anything to shed light on this issue and stimulate more experimentation, creativity, and imagination is valuable. It would be great to hear compelling ideas emerge right here on Temple’s campus. This should be the first of many conferences of this sort. One thing is clear: this is a time in education when we need all the leverage we can come by. The technology allows us to disaggregate and see what is going on.

Opening Remarks

Dr. Susan Miller, Director of the Instructional and Learning Technology (ILT) Program, said Dr. McGuire's remarks were an extension of the previous night's remarks. She then read off the names of participants by their institution and asked them to introduce themselves and the stakeholders they invited. Attendees represented the following institutions: Bloomsburg College, Carlow College, Chestnut Hill College, College of Misericordia, Drexel University, East Stroudsburg University, Indiana University of Pennsylvania, Kutztown University, Pennsylvania State University, Philadelphia University, Robert Morris University, Saint Joseph's University, Seton Hill University, Widener University, and Wilkes University. In all, representatives from 14 of the 21 programs surveyed by ILT were present. In addition, Dr. Glenn Snelbecker, Professor in the Instructional and Learning Technology Program, introduced representatives from the International Society for Technology in Education (ISTE) and the American Psychological Association. Dr. Snelbecker said he and Dr. Miller have been planning this conference for 3 1/2 years. Math educators get together in record numbers, but instructional learning technology (ILT) specialists and associates do not meet like they should.

Keynote Address

Dr. Michael Golden, Deputy Secretary of the Pennsylvania Department of Education Office of Instructional Technology, began his presentation by showing a movie depicting what the classroom of 2020 might look like. In the movie, every student had a laptop, and technology was incredibly advanced. So how do we get from here to there? We know that some pathways have not been as successful as hoped. For too long, we have talked about student to computer ratios. Those numbers have nothing to do with how technology is utilized. There is evidence that exists on how students learn, so how do we make the classroom of 2020 a reality?

The first step should involve integrating technology seamlessly into teaching. Mr. Golden spoke of a poor, rural school district in Pennsylvania that worked on something called The Butterfly Project. This one-week program helped students learn why monarch butterflies migrate. The teacher began by finding out what the students knew about monarch butterflies. The first day, the students did a WebQuest to find out about the life of the butterfly. On day two, they tracked the migration pattern using technology. They learned geography, math, and culture through that lesson. On day three, they tapped into their desktops and talked to an entomologist. This is a rural school that would not have otherwise had that opportunity. On day four, the students communicated via videoconference with students in Mexico. On the final day, they presented a PowerPoint of their findings. At the end of the week, the students were not thinking about technology per se, but rather what they had learned.

The second step is becoming so comfortable with technology that it becomes second nature. He referenced a teacher who is very tech savvy. A short movie showed a classroom where the students are using iMac spreadsheets to track their daily lunch count. The teacher has been successful in incorporating technology into this everyday activity, and the students are becoming versed in technology.

Another crucial step is providing individualized instruction to students. We need to make meaning of the content for the individualized student. He showed student profiles that included favorite/least favorite subjects, behavioral profile, and individual instructional challenge. How do you tap into the individual needs of 30 students? You need to start with a needs assessment and

determine the capabilities of each student. Some want to work alone. Some want to work collaboratively. Some want to challenge the teacher while others may need extra attention. Once teachers know where the students are coming from, they can provide a variety of resources. Then they can make the curriculum accessible and challenging for all students. Visual learners can read; auditory learners can listen to the online lesson.

Instructors should also foster the home-school connection. Teachers could create a homepage that invites parents and students to get involved. He showed one particularly effective webpage where the teacher posts notes each day so that a sick student can see what he or she missed.

Upcoming PDE Events

The Pennsylvania Department of Education (PDE) strives to help students reach their full potential. The PDE mission is to lead and serve the educational community to enable each student to grow. Mr. Golden showed the Leading for Learning model which emphasized “strong results for learners” by using quality teaching, quality leadership, artful use of infrastructure, and a continuous learning ethic. The PDE is having a summit June 7 and 8 at Penn State University for leaders of teacher education programs. Deans from schools of education will be invited. It is also going to have a Grade 6 to 8 computer fair. In education, practitioners have their own cold war between technology directors and curriculum directors; the PDE will develop a partnership between and among district leaders through a conference in July. The PDE is also having a grant competition to provide local education agencies with an integration mentor. They want to support teachers with technology-enhanced, data-driven instructional practices; the pilot program will be in 2005–2006. In addition, the PDE just announced collaboration with Microsoft to support high school redesign and technology initiatives. It has a \$10 million annual e-fund to improve broadband deployment to school entities across Pennsylvania; the competitive RFP will be released in June 2005. The PDE has a statewide data management system for continual improvement of data quality and timeliness. It is a one-stop shop for educational resources. In the spirit of streamlining, it has a Leading for Learning e-strategic planning tool. Some of the resources it is providing to districts include school interoperability frameworks, technology leadership webinars, the Pennsylvania educational technology café, and the “getting to one” CD and website. Mr. Golden encouraged anyone wanting more information to contact him at mgolden@state.pa.us.

Q&A

A participant asked about regulatory relief to define attendance for students taking online courses. Mr. Golden replied that the issue is a local decision. His office is trying to be a leader on multiple fronts. How do we translate great research into practice? We need to all work together. The government has said it only wants to fund research that is scientifically proven. We need to share our information with local and state representatives so that they understand the need for funding.

A participant asked how to get teachers excited about research. One has to identify key opinion leaders to influence other teachers in the school. It is the vision of a superintendent or building leader that is elemental; that involvement can change priorities. Ultimately, his Keystone Project wants to send the teachers back into the schools as models; it is advocacy of teachers that is crucial. Something has to take priority. At the same time, not everything has to stay the way it was.

A participant commented that it is difficult to systemically change a school culture. The whole system of teacher education does not seem to be going in this direction. Mr. Golden feels that is why the upcoming conference of Pennsylvania schools of education is so important. You have to change the mindset and then change the demand. They will stress to these attendees that their graduates must have these crucial skills. Educational technology was easy for the administration to cut because the educational technology community did not lobby effectively. ISTE and the Consortium for School Networking (CoSN) are recognizing that they have not done a good job of making their case. He encouraged everyone to be vocal and active.

Dr. Susan Arisman, Dean of the Frostburg State University College of Education, commented that in Maryland they have standards for preservice education in technology. Those standards were so good that the state adopted them for all inservice teachers. One participant said that the teachers they are putting out are not equipped to be mentors. Mr. Golden said that is why building the infrastructure is important.

A participant asked if it is a good idea to bring together higher education and school districts. He believes seeing what is happening in the districts enables higher education to see what steps need to be taken on its end. Mr. Golden agreed that that type of partnership is incredibly important. Superintendents and principals can say, "These are the problems we are facing in our district" and build the partnerships appropriately.

One participant said, unlike Maryland, her state does not have across-the-board standards. Mr. Golden said he is creating a professional development standard across the state. A participant said North Carolina combines standards; it looks to technology standards and how they apply to the National Council for Accreditation of Teacher Education (NCATE). Mr. Golden said Link to Learn was a great program at a great time that provided a lot of funding. There are many components to that program. One of the problems was that it was focused on getting money into districts without any rhyme or reason; there was a lost opportunity there.

A participant said that his efforts to bring the deans together might be a step toward creating a unified vision. Does he agree? Mr. Golden said yes; it's the notion of sharing. There is no point in bringing people together unless you are going to harness their knowledge. There is a chance to take it to the next level. The participant posed a follow-up question about technology specialist certification and asked Mr. Golden for his perspective. He replied that there was a change to the certification process that says it is not necessary unless you are working with children or writing curriculum. One of the challenges is, "How do you change the law?" There has been a change to the Certification and Staffing Policies and Guidelines (CSPGs). The most recent previous CSPG (No. 56) stated that the Instructional Technology Specialist "is qualified to provide technical consultative services (to administrators, supervisors, and teachers) to assure more effective use of available media." The revised CSPG (No. 78) states that "an educator holding a valid PA certificate for Instructional Technology Specialist is qualified to provide curricular advisement on the application of instructional technology into curricular planning and instructional design to the curriculum supervisor and other school administrative staff." Under "Special Considerations" the CSPG adds, "An educator certified in this field may provide school staff development services regarding their collegial studies/skills." (You can view the full text of CSPG No. 78 at http://www.teaching.state.pa.us/teaching/lib/teaching/078_InstructionalTechnologySpecialistCSA1825_.pdf)

Dr. Miller added that people who work mostly with hardware in schools do not need instructional technology specialist (ITS) certification. What about professional development? Mr. Golden said those people do not need it either. One participant said that he was told, as a technology director, he needed ITS certification. Someone told him that by his mere title, he needed certification. Mr. Golden said we are continually challenged by how to move teachers forward as pedagogy is changing. A participant said that school districts faced with budget restrictions are eliminating the need for an ITS. The districts have never been required to even have such a person. Mr. Golden feels that is something that needs to be changed. A participant asked if the ITS certification is a nonteaching certification. Mr. Golden replied yes, you would need teaching certification in addition to ITS certification. He acknowledged that it is a hot issue and one on which the PDE is actively working. He asked for feedback on this issue and explained that he is not in charge of teaching certification.

Dr. Snelbecker commented that in a tight money situation, principals would only be likely to hire or appoint a certified person if that is required by school districts. He noted that in past changes of ITS certification, PDE invited experts in the field to identify ITS competencies. Dr. Miller said she would like to be able to bring Mr. Golden a collective voice; he acknowledged the value of hearing input from multiple sources. He encouraged the participants to go to the PDE website and follow the links to CSPG.

A participant asked if there is a way for a specialist to get a generic login for the PDE forms so that instructors can show their students what they are going to be faced with when they become employed as educational technology coordinators. He explained that there is not a generic login and he does not think you need one, but he would post the old e-tech planner.

A participant commented that streamlining the certification process would be very helpful. The PDE standards will drive that process. Mr. Golden feels there is a partnership mindset and that we all have to work together. It is important to recognize that we have to manage this on multiple levels; we need to recognize our roles as well. There was a long and large window for comment. If we do not make our voices heard, there is nothing he can do.

An Analysis of Pennsylvania Instructional Technology Certification Programs

Dr. Miller and the staff and graduate students in her department worked on a study of instructional technology specialist certification programs in Pennsylvania. The purpose of the yearlong study was to determine the nature and scope of ITS certification programs and identify alternative routes to certification (see PowerPoint presentation for findings).

Breakout Session Reports

Clickers (Stakeholder Group)

Dr. Ames Brown of Fairleigh Dickinson University said his group started by trying to get a sense of where the ITS person is situated within the school district. They brainstormed the characteristics that they feel are important in an ITS role. An effective ITS would not be a “techno geek.” He or she needs a leadership role with emphasis on professional development and the role of bringing a vision. This person would also need to be versed in diplomatic responsibility—someone who can navigate through the politics. How do you frame an ideal job description for ITS? What are the teacher’s expectations? Expectations include understanding curriculum and assessment, understanding the future direction of technology, having the ability to

implement strategic change, and recognizing the importance of digital ethics and legal liabilities. Educational law is important and this person should have some experience. Other qualities of an effective ITS include the ability to translate input to stakeholders; the ability to assess and evaluate how technology is used on a daily basis; the ability to facilitate and manage technology change; and the ability to purchase, acquire, and deploy technology.

Teachers should be able to determine how to use technology to meet standards and improve student achievement. They want help with professional development and help diagnosing technology problems. They want assistance with the day-to-day issues of technology breaking down and software not working. They could also benefit from guidance on new technologies and the planning of proposals. In addition, they need and want help understanding digital ethics, privacy, and security and the ways it affects the classroom.

Copycats (Stakeholder Group)

This group expressed the opinion that the ITS should be the curriculum specialist with regard to technology. The ITS should know the technological material but not be the “techy” person. They talked about a 2-track certification, one for the curriculum specialist, one for the techy person. The third track they talked about was for a data-making specialist. The areas of data mining and data distribution are crucial. We need a better understanding of data. Professional development is an area that needs emphasis as well. They looked at the whole list of competencies and discussed how they are being defined and how they can be improved.

Mousers (Stakeholder Group)

The group agreed that the ITS walks a fine line between technology and education. The line has to be defined through rubrics, and the balance needs to be maintained somehow. They need more people dealing with the technology aspect and more people dealing with the education so that there is not mixing and matching. The ITS should understand technology integration, grant writing, and network infrastructure and support. They agreed that more support is needed as networks grow; one person is no longer sufficient to manage everything. Does this depend on district size? Big districts have separate divisions and focus areas. The curriculum perspective is that there is no teacher time (or class time) to bring in technology. Programs need to reflect technology integration so that technology is not seen as an extra, but rather as a part of education. Those in ITS roles should be in the classrooms showing teachers how to integrate and be innovative. The group asked itself, “Are we showing teachers how to use technology?” or “Are we teaching teachers to recognize what technology integration looks like?”

The group’s current expectations for ITS include competency levels for preservice teachers, online exams, and ongoing assessment. The ITS should participate in instructional learning and use technology to build a bridge between school and home. Technology should affect what teachers are doing in the classroom but not being overwhelming for them. They need to use the technology seamlessly. The group suggested a technology teacher leader in each school. The idea of having an orientation for faculty who are new to technology was also suggested. An ITS person should be making teachers comfortable with the technology and providing them with handouts to troubleshoot common problems. Quick tip sheets might help the faculty.

Flip Floppers (Program Coordinator Group)

Dr. Timothy McGee of Philadelphia University said his group started off by asking coordinators what feedback they are getting from their graduates. Students try to get ITS certification thinking they are going to be computer teachers; many students are confused. Is it a good idea to put nonteachers in schools? It is an issue of supply and demand. They asked themselves, “Are we correct that there will not be such a need for ITS people and that there will be a drastic reduction in ITS?” They talked about what has happened to the pool of qualified people and the value of the certificates. The curriculum that leads to the certification should be periodically reviewed and modified.

The group also talked about ITS certification graduates and what they do well. If there is no designated position, schools will not hire anyone. If Pennsylvania does not require teacher certification for ITS certification, one consequence might be that people pursuing degrees in curriculum instruction might need more technology preparation. But this would not be the same as Instructional Technology Specialist competencies. School districts are being audited and fined for not being in compliance. Virginia might be going in the opposite direction with one IT person per thousand students. There is a disconnect between the standards and guidelines of CSPG 78. Is certification going away? Some say yes, some say no. We need an advocate for 21 universities. If we speak with a unified voice, we might get some results. The National Educational Technology Plan has professional development written into it but has no definition of who will be responsible for delivering it. The group also discussed the economics of IT specialists and how to get opinion leaders to embrace technology. There are an increasing number of companies selling solutions, data management. We need to educate superintendents. How do we help PDE understand? Many feel that listservs or Blackboard might be an effective way to communicate and get the word out; we need to influence opinion and educate. Do the school districts know that the CSPGs have been changed? Perhaps not.

Hard Drivers (Program Coordinator Group)

The program coordinators pondered the question of how well their curricular offerings matched the practical needs of K–12 schools. The consensus was that programs matched K–12 environments though internships and meetings with graduates. The data should be arrived at through longitudinal studies. IT people are clearly needed, but that responsibility may fall to other computer people. The issue is curriculum integration, and dialogue is what is needed. They agreed that they need to demonstrate value for their programs. Is there an interest in collaboration? Yes! They need to collaborate on what programs are working.

Dr. Miller said that her group, the Flip Floppers, discussed the same issues. The group agreed that it needs to build a case for its instructional technology programs. They thought about a research study in which they would survey the programs to find out exactly what an ITS person does. Then they might be able to inform the PDE better. One of their selling points to the PDE will be to prove that ITS perform a range of functions. If the PDE does not realize the value of these programs, it could go away. Dr. Snelbecker suggested a listserv to continue this discussion beyond today.

Panel Discussion (Larry Lipsitz, Editor of Educational Technology Magazine; Martin Friedman, Vice President (President Elect) of the Pennsylvania Association for Educational Communications; and Mila Thomas, Director of Strategic Initiative for the International Society for Technology in Education)

Mr. Lipsitz said he has been thinking about the nature of design problems in education. He thinks that most of the things the participants have been discussing the past two days are matters of design. They have been talking about events, and institutions are very idiosyncratic. In essence, these are design problems. A design effort means that you have a problem that needs to be solved but does not have a right or wrong answer. You have to see yourself as a designer rather than a scientist. A continuous process of design and redesign is what goes on in the world, and education should not be any different. He recommended the book, “The Design Way: Intentional Change in an Unpredictable World” by Howard Nelson. What does it mean to be a designer? He believes thinking that way is very liberating.

Ms. Thomas from ISTE said that she has many opportunities to travel to different cities and countries. Not surprisingly, she hears the same type of issues there as here. ISTE provides leadership and service to improve teaching and learning by advancing the effective use of technology in K–12 teacher education. The role of the ITS includes

1. appropriate and effective uses of educational technology to shape school reform;
2. design and delivery of relevant, technology-rich professional development;
3. accountable, skilled school leadership in educational technology;
4. assessment of instructional technology;
5. research in education;
6. advocacy of educational technology;
7. leveraging of resources; and
8. school-based and/or district technology teams.

ISTE is, at the end of the day, more than a technology entity. Mr. Golden has bought into the notion of technology improving education, so Pennsylvania is fortunate. As an ITS, how do you learn how to work in a collaborative environment with buy-in? In Maryland, they had trouble deciding just how to assess instructional technology. A person in an ITS role should really know how to leverage resources. Everyone is talking about models that foster collaboration. Ms. Thomas listed the following essential conditions for technology integration:

1. shared vision with support and proactive leadership from the education system
2. educators skilled in the use of technology for learning
3. content standards
4. student-centered approaches to learning
5. assessment
6. equitable access
7. technology assistance

The following issues and challenges face ITS:

1. Are students being prepared to succeed in the workplace?
2. How do I measure success? Should I?
3. How should I build capacity?
4. Where do I go for funding?
5. How do I keep up with emerging technologies?
6. How can I keep my team involved with ongoing professional development?
7. How do I use National Educational Technology Standards for students, teachers, and administrators?
8. How do we begin to address essential conditions?

Mr. Friedman said he has been thinking about a response and whether we are responding too late. Another technology coordinator has worked during the past year to try to get educational technology people to advocate for their field; she has had limited success. We need to push toward the political avenue, which is something that makes most educators uncomfortable. He has heard many mixed things about ITS certification: it is going away, it is not going away; it is important, it is not important. We need to take a unified voice to the PDE and to Washington. He said he is not seeing the lay of the land changing too much. What IS different? How do we respond and prove that what we are advocating for does make a difference?

Mr. Friedman thanked Dr. Miller for her efforts; he offered up his organization and help. What is the next practical step? He said collaboration. Mr. Lipsitz said that 15 years ago, he was not nearly as optimistic as he is today. Twenty years ago, these problems did not even exist because things were at a much lower level. Today's problems are problems of a growing field. Even the grumbling is good as far as he is concerned. The disagreements are in an evolving field. Even with the cutbacks in funding, he does not feel that money is the problem. The field will grow with or without the funding. In the short term, the field will of course grow better with the funding. He does not believe you can change infrastructure without changing the content of what is taught in schools. The content is ripe for change in the public schools. The instructional technologist has a role in that change, not just the curriculum people. Content and design are issues that need more emphasis. We need to look at the larger society as well. The students are not isolated from the larger society, and they do not want to learn like we did.

A participant asked about content changing and how students' learning will change. He said our optimism is hindered because we can see the vision but have obstacles like No Child Left Behind (NCLB) and budget cuts. So how do we get there from here? Mr. Lipsitz said he does not think NCLB is a hindrance. The intent was one thing, and now it has been stuck with this onerous, oppressive stigma. Content and methods will have to change or a lot more of education will take place outside of the formal school setting. These out-of-school trends are a force. Educational technology is inexorably going ahead no matter how it is defined. NCLB, for lack of money, is not going to stop.

A participant said someone donated software to her district. When the content became available, she had 68 teachers move into content areas. The key is to not have technology so encompassing that it takes so much time. If the hours of preparation are decreased, the teacher will embrace technology more willingly.

A participant commented that a surprising number of teachers know about WebQuests. Why is it so popular? It is popular because it fits easily. Ms. Thomas said that not all positions would disappear if funding were cut, but she thinks people would work more in the content areas. She thinks more people are looking that way. Mr. Friedman thinks that what drove the space program was funding in science and math. Funding is what drives progress. There is only so much momentum you can keep without a funding stream. Mr. Lipsitz said the state is the key; to depend on federal funding is not the point. To depend on federal funding is not prudent. It does take a change in mindset though. If the mindset does not change, the money does not help much.

Ms. Thomas elaborated on several advocacy efforts from ISTE. She referred participants to a press release that can be found on the ISTE website. In addition, there is the Educational Technology Action Network (ETAN), a grass roots advocacy network. ISTE also features a Making the Case advocacy toolkit on its website. Mr. Friedman feels that ETAN is a great tool; it is an excellent way to respond in an immediate manner to legislators and is incredibly easy to use.