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ABSTRACT
        During the 1994-95 academic year a series of four
focus groups were held to learn more about faculty attitudes toward
computing and instructional technologies at the University of North
Texas. This report assembles faculty quotes which represent group
concerns about: (1) the reliability of the equipment and its
technical support; (2) the availability of support staff; (3) faculty
training in instructional technologies; (4) the lack of proper
classroom design to support the use of technologies; (5)
compatibility/platform issues; (6) whether technology saves time for
the instructor or demands more; (7) if use of and expertise in
technology might increase chances for reward in the form of promotion
and tenure; (8) attitudes toward technology in general; (9) whether
technology can improve teacher performance; (10) whether technology
is an "enhancer," or helps students learn; and (11) whether
technology is a distractor to teaching and learning. The group's
comments suggest that faculty believe the use of technology can add
value to the total educational experience, but they would recommend
that the university: (1) foster development of discipline-specific
models; (2) provide time to redesign courses using technology when
appropriate; and (3) ensure availability and reliability of equipment
and support. A list of the questions posed to the focus groups is
appended. (BEW)

Computing and Other Instructional Technologies:
Faculty Perceptions of Current Practices and Views of Future Challenges

A Focus Group Study
Conducted for the Information Resources Council and the Office of the Provost

Prepared by Suzanne Byron
Focus Group Coordinator and Data Analyst

December 1, 1995

1994/95 Instruction Program Group: Paul Gandel, Co-Chair; Celia Williamson. Co-Chair;
Sharon Almquist; Neal Brand; Richard DuPree; Bob Golladay; Dan Haerle; Barbara Hall; Bill
McCarter; Catherine Murphy; Dallas Newell; Henry Warchall; Mark Withers; Cengiz Capan.
alternate; and Bob Michaelson. alternate

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Computing and Other Instructional Technologies:
Faculty Perceptions of Current Practices and Views of Future Challenges

Executive Summary

During the 1994/95 academic year a series of four focus groups were held in conjunction with other work of the Instruction Program Group to learn more about faculty perceptions, current practices, and views of future challenges regarding computing and other instructional technologies at the University of North Texas. From these focus groups eleven broad themes emerged:

1. reliability of equipment/technical support;
2. people/support staff;
3. training;
4. classroom design;
5. compatibility/platform issues;
6. time;
7. reward;
8. attitude;
9. technology to improve teacher performance;
10. technology as an enhancer/reinforcer inside/outside the classroom;
11. technology as a distractor to teaching/learning.

The overall result of these focus groups indicates that faculty are very interested in using technology for teaching. Faculty believe the use of technology can add value to the total educational experience and be significantly beneficial to learning. However, technology is viewed as an added layer not as a "silver bullet" that magically solves all instructional problems. In fact, across the focus groups, faculty expressed frustration at not been able to fully realize the potential of instructional technology due to a lack of support (both technical and administrative), fear of unreliability, lack of time, and a lack of clear models to follow within their individual disciplines.

To encourage the use of instructional technology at the University of North Texas, the following suggestions are offered for those persons and bodies charged with strategic decision making concerning instructional technology:

1. Foster development of discipline-specific models;
2. Provide time to redesign courses using technology when appropriate;
3. Ensure availability and reliability of both equipment and support.

Computing and Other Instructional Technologies:
Faculty Perceptions of Current Practices and View of Future Challenges[1]

Background

During the 1994/95 academic year a series of four focus groups was held in conjunction with other work of the Instruction Program Group to learn more about faculty perceptions, current practices, and views of future challenges regarding computing and other instructional technologies at the University of North Texas. A focus group methodology was selected by the Instruction Program Group because this methodology provides a richer picture and understanding of issues than more traditional survey methods. The goal behind the study was to use data gathered in the focus groups to provide a baseline for initiating a strategic decision-making process to meet the future instructional technology needs of University of North Texas faculty.

The 1994/95 Instruction Program Group membership included: Paul Gandel, Co-Chair; Celia Williamson, Co-Chair; Sharon Almquist; Neal Brand; Richard DuPree; Bob Golladay; Dan Haerle; Barbara Hall; Bill McCarter; Catherine Murphy; Dallas Newell; Henry Warchall; Mark Withers; Cengiz Capan, alternate; and Bob Michaelson, alternate. The idea for the study was originated by Paul Gandel. Suzanne Byron created the focus group questions, coordinated the focus groups, and provided the data analysis. The following individuals participated in facilitating the focus groups: Sharon Almquist, Suzanne Byron, Richard DuPree, Paul Gandel, Bill McCarter, and Celia Williamson. Administrative assistance was provided for this study by the School of Library and Information Sciences. Funding for this study was provided through the Office of the Provost.

Study Design

A focus group interviewing protocol was developed by the Instruction Program Group. The protocol was designed to gather information on: 1) the extent of faculty awareness of computing and other instructional technologies; 2) faculty perceptions on how instructional technology could help increase their teaching effectiveness; 3) ways faculty are currently using instructional technology; and 4) the perceived barriers to using instructional technology. To determine the validity and understandability of the focus group questions as well as the protocols' effectiveness at eliciting responses that addressed the major concerns of the study, the focus group protocol was pretested with a group of volunteer librarians who teach in the UNT Libraries. A copy of the

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[1]The results of this study were presented in Houston, Texas on November 15, 1995, by Suzanne Byron, Paul Gandel, and Celia Williamson at the Computers on Campus Conference in a session entitled "Computing and Other Instructional Technologies: Faculty Perceptions of Current Practices and View of Future Challenges--A Focus Group Study."

focus group questions are provided in Appendix A. After pretesting the protocol, the study was done in two stages during the 1994 fall and 1995 spring semesters. Each stage involved two focus groups.

In stage one, the goal was to elicit opinions from a cross section of faculty from all disciplines and ranks. To accomplish this, all UNT faculty were categorized into one of four academic divisions (humanities, social sciences, natural and physical sciences, and professional programs). divided by rank (tenured and non-tenured) and then further stratified by gender (male and female). Potential participants were then randomly selected from these stratified categories in equal numbers. Each group included eight participants. These groups have been labeled as Group A and Group B.

The next stage of the study was designed to solicit opinions across the spectrum of technology use To achieve this, participants from the first two focus groups were asked to provide the names of faculty members whom they knew to be high-end or low-end users of instructional technology. From the names suggested, two more focus groups were created. One group consisted of high-end users and the other of low-end users of instructional technology. Each of these groups also included eight participants and as much as possible were balanced by discipline and gender. These groups have been labeled as High-End Group and Low-End Group.

Each focus group was facilitated by three members of the Instruction Program Group. One facilitator served as moderator, one as recorder, and one as general coordinator. All focus groups were audio taped and transcribed. The transcriptions were then examined to identify themes, concerns, and hopes expressed by the faculty for the use of instructional technology.

Discussion

For the purposes of illustrating the themes that emerged from the focus groups, representative quotes from the transcripts have been provided. Illustrative comments are listed by group name and the transcript comment number. To ensure anonymity of the participants, any wording that might identify a participant has been replaced by [...]. Clarifying remarks for any comments are enclosed in [ ] at the end of the quote.

Eleven themes emerged from the focus groups:

1. reliability of equipment/technical support;
2. people/support staff;
3. training;
4. classroom design;
5. compatibility/platform issues;
6. time;
7. reward;
8. attitude:
9. technology to improve teacher performance;
10. technology as an enhancer/reinforcer inside/outside the classroom;
11. technology as a distractor to teaching/learning.

The top three themes from each focus group are indicated in Table 1. How each theme emerged within each of the focus groups is indicated in Figure 1.

Table 1

Group A	Group B	High-End Group	Low-End Group
distractor (11)	reliability (1)	reliability (1)	distractor (11)
enhancer (10)	training (3)	improves teaching (9)	training (3)
reliability (1)	enhancer (10)	enhancer (10)	time (6)

[numbers in parenthesis refer to the list of eleven themes]

Figure 1
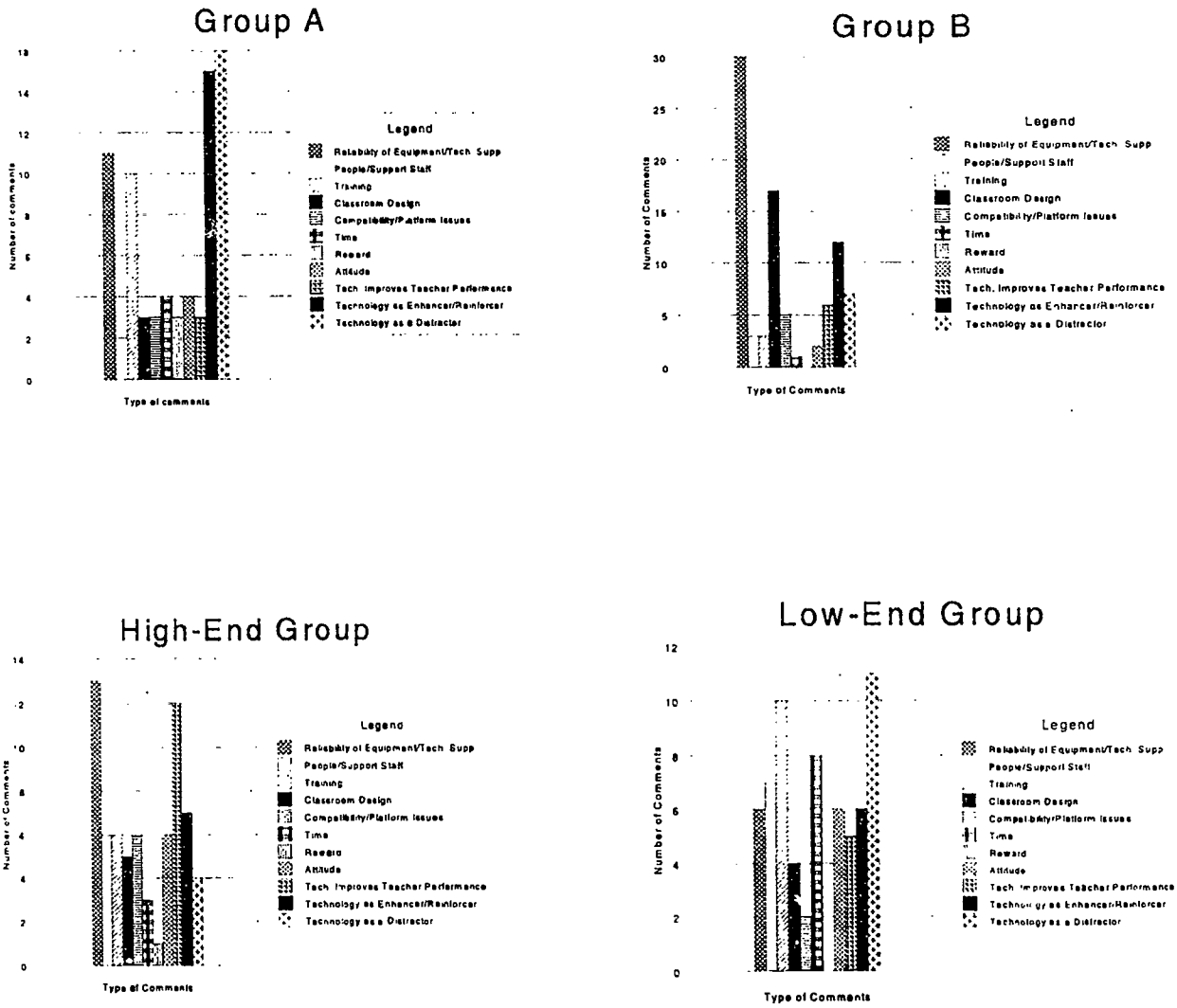
Reliability of Equipment/Technical Support

Reliability of Equipment/Technical Support deals with whether or not equipment can be depended on to work when needed in a teaching situation and was a major theme to emerge from the focus groups. This theme was one of the top three issues for three of the four focus groups. The following quotes illustrate this point:

Group B

117   And when it doesn't work, like the movies you're showing, or the computer stuff you're showing, what do you do then if you've planned to show that for however long it lasts.

High-End Group

99   Let me point out that the stuff that I use was bought off research grants. And stuff that I use in my regular research work I drag into the classroom, it is not stuff that the university supplied, or went and got, that's the stuff that doesn't work.

People/Support Staff

People/Support Staff deals with the human side of reliability--is there someone available to provide assistance and is assistance provided in a timely manner. Divergent views were expressed on this issue. The following quotes are fairly representative of the different experiences of the faculty in the focus groups:

High-End Group

24   It's discourteous personnel, it's poorly trained personnel, it's people who really don't care, in my experience, about what I need.

Low-End Group

14   [...] if the technician can't handle it, you turn to the technician and say ah, how long will it be before (laughter) and then you give the class a break [expressing how having personnel available to assist with technology takes this burden off the faculty member].

Training

The theme of Training focused on what opportunities are or are not available to faculty to learn to use instructional technology effectively for themselves. For this issue, the participants mainly expressed what they would like to see available at the University to support their efforts to make use of instructional technology:

Group A

137 [...] for faculty it's also important to have models. If we don't have models, then we can't emulate them, because we don't have time to reinvent the world, we just kind of look at what the technology should be, I mean I don't have any time to read the technical journals that give philosophies of what should be good instructional media, and but if you can see something that works and then change it, that's better use of time.

High-End Group

242 [...] a support center for faculty development.

Low-End Group

187 Not only training but follow up. After I've had the training if I don't use something regularly I'll forget it. And so I've had the training and it's a half a semester and I don't use it until the next semester. So it's half a semester I'm right in the middle of it and I've forgotten.

Classroom Design

This issue elicited a great deal of response from the participants who were currently using instructional technology with classes. Classroom design, or more accurately the lack of proper classroom design, to support the use of instructional technology elicited the following types of comments:

Group A

13 [...] classrooms are not designed for newer technology [...]

Group B

56 It's kind of catch 22: if the lighting is proper for people to see their notes then the overheads aren't any good.

Low-End Group

11   Different classrooms have different kinds of equipment. Sometimes when you don't use some of the equipment very often, you forget how or you try to use it like you do in the classroom where you usually are. And that won't work. And that's very frustrating because you look like an idiot in front of the classes.

Compatibility/Platform Issues

Compatibility/Platform Issues deals with being able to use the needed technology to fit specific instructional goals when and where the faculty member actually needs to use the equipment. Comments illustrating this theme included:

Group A

33   The other computers can't even--every time they get into Windows, it just freezes, so we have it on the network, and they come to my office and look and say wow, look at all the wonderful things you have, but I can't do it you know because they have 286 systems.

High End Group

96   Basically you know you hope there's chalk in the classroom and we're really sort of Neanderthals. I just got updated to a 386 in my office, isn't that exciting. I mean I walk by offices with pentiums and so on and you know there's just sort of have and have not syndromes in the environment I inhabit.

Low End Group

144   [...] what technological path to follow is driven by the nature of the need. [...] we have a clear path between the two computer technologies, PC and Macintosh. [...] we're faced with a decision of how to spend some money, the decision is made this is what we want to do then, then the answer to what technological path to follow is very clear.

Time

Time was an important theme across the groups. This issue is especially important to consider in relationship to the theme of Reward. Comments regarding this theme are well illustrated by the following quotes:

Group A

90   If you have that time and commitment it's fine and like the students love it. They use the software now. I mean that is the thought process it's great. They're learning to respond in a way that is the thought process that I'm actually trying to teach them. But it's hard to justify to anybody that you're actually working on something and it takes 6 years to get it done [commenting on creating software].

148   [...] standard practices take less time than innovation.

Group B

245   it's a real time investment, this process

High-End Group

188   I think it goes back to the idea of the computer being able to save us time, or somehow be more efficient, so that the company can save money. And I see this, every so often its pops up where an administrator or someone has this concept that instructional technology is a money saver. That somehow allow us to do more with less. Okay. And that concerns me because instructional technology is not a money saving prospect. It is another layer in our endeavors.

Low-End Group

224   [...] for me one of the main problems is the time. If you don't know what you are doing and you start to do a job, whenever I first started using the computer, I would be very tempted to go back to the typewriter because I did that for twenty years, I know how to do it. I knew what I was doing, if I messed up I knew how to correct it. Whereas with the computer the only resource--resource person I have was our already over worked secretary, ah, and if she couldn't come to help me I'm stuck.

226   [...] the time that I use is so precious to be doing other things that I hate to give up the time to learn technology.

Reward

In examining the theme of Reward, the Instruction Program-Group was specifically looking for comments regarding promotion and tenure. There were very few comments specifically tying the use of instructional technology to the promotion and tenure process. However, this theme should not be ignored in light of the comments regarding the theme of Time. Overall, the faculty in this study did not view innovative teaching with instructional technology as a path toward promotion and tenure, but they were very aware of the time this type of activity involves and the fact that it is time pulled away from the activities they do view as rewardable with promotion and tenure. The few comments specifically concerning reward are provided below:

Group A

141   tenure (laughing) [commenting on what would give the ability to use instructional technology]

144   [...] if it became rewardable to use it, like, even if you got merit points for using it. I don't know, but it's not real rewardable and it could take time away from your articles and everything, even though you know, to some degree, if you learn to use it may even help ou write more articles. It's almost like chicken and egg, which do I do first, do I have the time to do this to write my articles or do I need to write my articles and publications first and then later on the technology, so there's almost like there's not an intrinsic reward for taking the time out to use it or learn to use it.

145   You're also talking about administrative commitment. Because you know your boss doesn't recognize the value then you're not going to end up with anything

Attitude

The theme of Attitude represents the overall views concerning instructional technology whether positive, negative, or neutral. Some of the general sentiments expressed are captured in the following quotes:

Group A

151   [...] attitudes as a barrier, whether it be lack of departmental approval for money, but also sometimes just standard procedure, standard practices are the easiest way out and they don't see the need, necessarily for the latest in technology or whatever, until a long time down the road, if at all.

232   Ever since I got in this business I've often heard that computers will replace teachers and about 8 years ago I was doing a talk exactly on this topic. And what I was telling these administrators that I was talking to was that every computer that an insti'ution purchases

requires three to four people to service. Where it used to be when you didn't have computers you just had a teacher, you know one person, not have five. So the technology has expanded.

High-End Group

190   It is an additional layer, it is an additional expense. And I think sometimes administrators perhaps are confused on this issue because they're not sure, they're not clear as to which end of it they're coming from. Are we doing this because, are we creating a centralized computer labs to save money, or are we doing it to enhance education. Can it do both things? I think there may be instances that it can do both things. But I think you have to be real careful with an umbrella approach that we're using instructional technology because we can take one faculty member and service 500 students, or we can have the students teach themselves and not have to have as many faculty members. I mean there's's that whole approach to why do we need instructional technology. There may be some cases where that's valid, but in my experience to do it right the cost involved in creating instruction technology is equal to or more than the savings you get from having fewer faculty members, or having you know, someone teach more students.

Low-End Group

72   I'm not afraid of technology, you know, it's kind of fun to use. I'm realizing that the way I decide what I want to use is whether or not I'm in charge, well, that's not, ah, in control of it. But also that it adds to the process of the class, that it doesn't substitute for the process. And that it's only, it's a tool.

Technology to Improve Teacher Performance

Faculty in the study expressed a positive and optimistic view towards the use of instruction technology to improve teacher performance. The comments below provide a small sample of this:

Group A

187   Teaching can be made more effective, teaching more students with less resources.

Group B

211   Potentially we wouldn't need classrooms, just instructors and students with some type of computer access.

High-End Group

177   [...] the bottom line to me really is getting the most up-to-date information to students in a way that they can digest it most easily. I've gone out of my way to try to simplify things for these guys so that they don't have any excuses for not learning it. Technology makes it easier for me to do that and also to bring, like I was telling you, some of these concepts to class.

Technology as an Enhancer/Reinforcer Inside/Outside the Classroom

The theme of Technology as an Enhancer/Reinforcer Inside/Outside the Classroom deals with whether or not instructional technology helps students learn. This was a major theme across groups emerging as was one of the top three issues for three of the four focus groups. Faculty made very positive comments regarding this. The quotes below particularly illustrate faculty awareness of different learning styles:

Group A

199   If we're going to do it, if we're going to use this technology to get greater numbers of people trained with the same resources then do we not have to just totally revise the way we teach? And then what body of literature is it that says most successful models are from doing that?

205   [...] one of the things technology does is give you the option of saying the same thing in different ways.

High-End Group

204   [...] the students are going to where the technology is because they know that the jobs are there [...]

314   [...] in a laboratory environment I know for a fact that initial investment would save time and money from faculty and would improve the quality of what is being presented to the students.

Low-End Group

306   Well I can say the other advantage instructionally is the fact that students have a variety of leaning strengths and some of them learn more visually and most of what we are talking about is visual, most of this technology involves visual learning [...] this technology that's supposedly visual I think helps reinforce and also is a learning path that's more effective for many students.

Technology as a Distractor to Teaching/Learning

While the faculty in the study expressed many advantages in using instructional technology to facilitate the learning process, they also expressed a concern that technology could be a possible distractor to learning as well:

Group A

73   I think non-interactive media run the risk of non-participation by students.

High-End Group

372   I think the personal contact is certainly going to be gone. And I know I spend a lot of time trying to make personal contact even in the classes I have with 80 students.

374   I think there is a strong possibility of a gender loss and a loss to minority communities from the stuff I've seen so far [...] there are probably different styles of learning that are cultured and gendered and there's a lot of people getting left behind. We are developing into a have and a have not culture within the academic circumstances. I don't see more women moving up in high tech universities. I don't see more minority faculty moving up I see all too often them getting left behind. And I think that one of the losses could be because you guys are comfortable talking about competition you're comfortable competing. I learned a male model, I can learn how to talk the talk, and maybe I can learn to walk the walk, but there's a lot of women and there's a lot of cultures who don't work that way. And if we're talking a Social Darwinism of competition, we could lose and as a university then we would lose.

Low-End Group

42   Although they're interactive, they're non-dynamic. Because once you've finished it what you teach in 1995 may not be what you want to teach in 1996.

74   [...] if its going to substitute for thinking on the part of the student then I would be highly objectional to using anything that substituted for students having to think about the material and having to process the material. Maybe I'm just an old teacher or something, but I really believe that that's the role of the teacher to help in that process, and I know there's these days you can study by computer and not ever see a professor you know, and there are universities that do this [...] I wonder what do they really learn.

Summary

One of the most humorous comments to come out of the study also provides a nice summary concerning issues relating to instructional technology. This comment came from the group of volunteer librarians during the pretest of the focus group protocol. Simply stated: "technology moves faster than committees."

Using focus groups provided a rich amount of information concerning faculty perceptions of current practices and views of future challenges regarding computing and other instructional technologies. This methodology also had the added benefit of directly involving faculty in a dialog about a critical issue facing the University. Many of the participants in the study expressed an appreciation at having the opportunity to discuss their views through this type of forum.

The result of these focus groups indicates that faculty are very interested in using technology for teaching. Faculty believe the use of technology can add value to the total educational experience and be significantly beneficial to learning. However, technology is viewed as an added layer not as a "silver bullet" to solve all instructional problems. The faculty in this study expressed frustration at not been able to fully realize the benefits of instructional technology due to a lack of support (both technical and administrative), fear of unreliability, lack of time, and a lack of clear models to follow within their individual disciplines.

To encourage the use of instructional technology at the University of North Texas, the following suggestions are offered for those persons and bodies charged with strategic decision making concerning instructional technology:

1. Foster development of discipline-specific models;
2. Provide time to redesign courses using technology when appropriate;
3. Ensure availability and reliability of both equipment and support.

Appendix A

Focus Group Questions

1. As an ice-breaker, please share with the group your worst classroom experience with tools for teaching.

   Ok, now to be fair, please share your best classroom experience with tools for teaching.

   What are some of the teaching tools you regularly use with your classes?

   Facilitator: Write items group lists on blackboard or flip chart. [one of the facilitators should do this whenever the group is asked to produce some type of list for discussion]

2. What do you believe are some of the pros and cons to using technology in the classroom? Please share your thoughts with the group.

3. If you had unlimited resources and time, how would you use instructional technology?

4. What types of changes would be needed to allow faculty to make greater use of instructional technology?

5. What are your concerns about the use of instructional technologies in teaching? Please elaborate.

6. What might be gained or lost by including instructional technologies in your teaching?