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Open Source for Education

Teachers to IT Departments: "You have Homework"

Every teacher, unless maybe a teacher who has been driven under a rock (or into deep depression) by the stress of high-stakes testing; knows that the integration of technology is important. But, do teachers know what is important about this "integration" effort?

In fact, do teachers know what the "IT" in "IT Department" stands for? Sidebar "IT" can stand for "Instructional Technology" or it can stand for "Information Technology." So, what is the difference, a name is just a name, right? On the surface, the "Instructional Technology" name would seem to hint that the department was focused upon technology that supports instruction. We wish that were so. The "Information Technology" name might indicate that the department supports the schools Business Office and focuses upon the data that is used to manage the district. Doesn't the school district's Business Office support instruction with the same goals?" you might ask. We wish that this were so. Sidebar to the Sidebar Instruction and School District Business Office folks should work together, with the Business Office recognizing that school management functions occupy a subservient role in education. However, school Business Office folks seem to believe (in a grandiose way, sometimes) that they perform the "mission critical" functions of the school district. And, these folks tend to use a "passive-aggressive" approach to getting their way, i.e., choking and strangling change, innovation and personal teacher initiative by the withholding of funds. This strategy directly affects instruction in a negative way, and also affects instruction indirectly in a negative way by choking and strangling funds for technology. In practical use, "Instructional Technology" and "Information Technology" mean the same thing because… Even if leadership of these departments consists of real educators, the staff (depending how large the district is) consists of technicians, network administrators, database administrators, technical managers, project managers, programmers, systems analysts, Webmasters, graphic designers, and maybe trainers. Even if the leadership folks are real educators, they usually don't employ nearly enough of the listed staff members to do an adequate job. Even if the IT leadership consists of educators, campus administrators and curriculum administrators resist the meddling of technology folks in instructional matters affecting their little kingdoms. IT Leadership and staff often are overwhelmed by fix-it work stemming from an underwhelmed budget that they do not have the luxury of focusing on the needs of instruction (Note: School Business Offices are under funded, too). The IT Department should be able to offer Service Level Agreements (SLAs) that guarantee uptime for all equipment. Spheres of Influence: No Confluence of Focus. There was a push to integrate technology into instruction, a big push.

But, the politicians and corporate leaders, and the parents that want to see their graduating children as "employable" neglected to "pull" adequate funding from for technology programs from their wallets.

So, everyone involved in Instructional/ Information Technology, i.e., the IT Department and the School's Business Department are handicapped by a lack of available funds to deliver on their mandate. So, rather than cooperate for the best interest of our students, the power centers (Business Office, Curriculum Department, Campus Administrators, IT Department) jockey for position and prominence. Each sphere of influence tries to maximize its performance and maintain its survival by "doing more with not enough."

Each of these groups fails to complete the required homework, i.e., talk to teachers and understand the educational case for their existence. But, the focus of this article is upon what the IT Departments needed to have done, but didn't do. Missing Assignment #1: Show the Direct, Irrefutable Connection between Technology and Student Learning Outcomes

Technology integration advocates went astray by failing to provide measurable, student achievement outcomes as part of technology integration planning. The early conversations by the technology folks went something like this… "If only those (fill in your own derogatory adjective) teachers would integrate the technology that we have given them, then our students would benefit." "We can't point to the direct connection between technology and learning, but we know that that connection is important to our students' future job prospects." "The benefits to students are down a future road, and we can't measure those benefits now. It will take a long time before we get that data." Here is the problem. These Techie folks needed to go into classrooms and find out what teachers do and find out how teachers do what they do. These Techie folks needed to observe students who were actually learning and find out what learning students do and how they do that learning.

Sidebar Of course the Techie folks didn't go into the classrooms because… The campus administrators and curriculum folks wouldn't let them in. The teachers didn't trust them because they spoke a different language. The Techie folks were too busy fixing equipment and too busy keeping up with service requests to go into classrooms to observe learning. Everyone knew that finding out what the technology needs of teachers and students actually are, then delivering strategies and services that solved those needs would be too expensive to carry out, anyway. So, the Techie folks delivered as much equipment as they could afford, set standards for equipment, and allowed campus administrators, grant agency targets and state curriculum pushes to drive IT Department efforts. Missing Assignment #2: Missing

Assignment #2: Obtain Requirements and Specifications from Educators

If IT Department leaders had been able to speak the same language as teachers, and if they had completed Assignment #1, they would find themselves face-to-face with Assignment #2. (Of course, few ever made it this far.)

Of course the IT folks didn't want to face Assignment #2 because in doing so, they would have to give up some of the precious little authority that they scrapped and grappled for.

To complete Assignment #2, Techie folks would have to quit prescribing technology (hardware, software, infrastructure) and build to the requirements and specifications that teachers provided.

it would have been a wise, and rare IT leader that said…

"IT has no business prescribing technology for instruction. Provide us (IT) with:

The educational case for your program

The requirements for the project based upon

The exact student outcomes that the technology targets

What the students will actually need to do?

How much access time each student will need to produce measurable gains?

How will the students actually do what they need to do?

When will the students actually do this?

How many students will need to be doing these things (be provided this access) at the same time?

How will we actually measure these results?

The exact measures (formative and summative) that will be used to document the success of the technology in driving student learning

The contingency plans that will be in place to redirect the project toward success if the situation goes awry

Missing Assignment #3: Choose the applications first, and the hardware and software afterwards.

This is a logical step that is best approached by "thinking backwards."

For example, if an entire campus will focus technology efforts upon improving student writing skills by daily computer access in every Language Arts class, a few other items are needed:

Students need a central place to store their research and writing products on the campus or district's network

Students need individual computer accounts so that their work is protected

Students need access to the Internet

Students need a portfolio system where they can place completed work that will be graded and assessed by their teachers

Teachers need access to the portfolio system and an easy way to assess, evaluate and grade each students' work

In thinking this way, the project is seen as requiring…

Enough computers for every student and teacher, and perhaps 10% more computers to be used as "hot-swappable" units in case one breaks

Service Level Agreements to ensure that every student has a functional computer in every class, every day

Network switching to accommodate this huge need for bandwidth

Network administration for all the student accounts, and the "moves, adds, changes" that accompany the arrival and departure of students

Network storage for "home directories" where students' work will be stores

Network storage for the Online portfolios that will deliver gradable work to teachers

Connectors to an Online grading system so that teachers can record grades, and so that students and parents can see progress in real time

Connectors to each student's previous high-stakes test scores so that formative assessment can be geared to each student's strengths and weaknesses

Student access to their "home directories" from outside the district (so that they can work on their assignments from home, or the public library)

Etc.

If the focus is on science classes, gathering experimental data, connecting computer systems with probes and remote hardware…

the requirements for implementing an integrated technology solution are even more complex, and expensive.

Missing Assignment #4: Building end-to-end projects instead of building piecemeal.

The reason that IT Departments did not build end-to-end projects was that funding was not available to do the job right.

Other reasons that IT Departments did not build end-to-end projects include:

IT Administrators and Staff didn't have a clue about what teacher and students really need

IT Administrators and Staff didn't ask, observe and validate what teachers and students really need

IT Administrators and Staff assumed that the need for teachers was greater familiarity with software

Note: The focus on software operation skills is irrelevant to the integration of technology since the use of the technology needs to be transparent to the user

In other words, teachers and students are distracted from the curriculum if they have to pay attention to the software

Attention to the curriculum is the "mission critical" need of instruction

This means that the "back-end-programming" that would make the use of all network resources "one-click-easy" was never started.

Summary of Missing Assignments

What can you say that is positive when so many assignments are missing?

Maybe that IT Departments could have anticipated that they would end up in the position that they did, i.e., "reviled from the top" for spending way too much money without any educational outcomes to show for it, and "reviled from the bottom" by teachers and campus administrators for failing to listen, for failing to provide easy and workable benefits to

teachers and students, and for foisting "less than finished" solutions upon teachers with the message that learning to integrate this stuff was a "teacher problem."

School district IT Departments generally failed the old-time marketing maxim, "The customer is always right" by supplying a maxim of their own, i.e., "The customers don't know what they need, but we'll give them the right stuff, anyway." IT Report Card IT Departments earn an "Incomplete" on their report card.

Too many assignments were

The IT Staff meant well, and they worked hard. But, they neglected to complete the most important (mission critical) assignments, and instead busied themselves with hardware, software and network infrastructure issues, while leaving undone the more important direct support for teachers and students.

IT Departments also receive "low marks" for listening skills and communication. While they speak eloquently in "technical jargonese," they are found wanting in their ability to "read between the lines" and discover what technologies are truly important for instruction.

The area where IT Departments "completely bombed" is that of identifying an educational case for IT Projects, and of discovering the direct, measurable and reliable areas of instruction that benefit from the integration of technology. "Wishin' and Hopin'" that the purchase of equipment and infrastructure, without identifying exact, measurable, replicable instructional outcomes was the major failing of school district IT Departments.

This is homework that still needs to be completed.

Failure to complete this assignment (a prerequisite for all other learning) will keep school district IT Departments stagnant, reactive, and unappreciated.

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