Abstract
Standards, assessment, and accountability movements are changing practices in public education. These changes require extensive data gathering and analysis. Teachers and administrators are overwhelmed by the demands, yet handheld computers offer a means to collect data unobtrusively and in ways that may provide better accountability. Within this article, uses of the handheld computer in the standards charged environment are explored.

Thomas Sergiovanni (1992) suggests, “Improving schools involves identifying the right leverage points for change.”

The standards, assessment, accountability movement has brought the need for massive record keeping. Teachers already are overwhelmed with gathering information, yet the legislatures nationwide are requiring testing and data tracking. The politicians and some citizens are calling for measurable improvement of student learning.

James Popham (2001) posits:
. . . teachers have an extrinsic motivation for collecting compelling and credible evaluative data to illustrate their instructional effectiveness. . . . I’d like to see teachers collect solid evidence that their students have mastered really powerful cognitive skills—skills so powerful that evidence of students’ increased achievement will wow principals, parents, and policymakers (p. 127)

How can teachers collect such powerful and solid evidence while allowing teachers the time to teach and prepare? Handheld computers can provide teachers and their administrators with an additional and effective tool. What can these small, yet powerful devices do for teachers to support them in the standards, assessment, and accountability data collection and management?

1. Information and reference data can be maintained on the handheld computer. Teachers need to have ready references including grade level standards and benchmarks, rubrics, definitions, schedules. These are text documents that are easily transferred to the handheld through one of the word processing programs like Documents to Go, Wordsmith, or Quickword, or through using a formatting tool like iSilo.

2. Student and class data can be gathered and analyzed on the handheld computer. Individual student progress toward meeting standards, i.e. rubric ratings, etc., can be maintained over time. Databases, forms, spreadsheets can be adapted for this use. Media-X has developed software for desktop and handheld dealing with standards. ThoughtManager has templates that can be modified for these purposes. District or school databases programs can be developed to allow use of rubrics and results to be gathered, stored, and analyzed. All of these methods allow sending the data to the school or district system through beaming or hotsyncing. Several systems designed by teachers and administrators on the FileMaker program work well for their unique site needs. There are many programs that articulate with the popular desktop tools like Office.

3. Grades can be entered and shared on the fly. Several programs enable teachers to collect and process grades. TeachersP.E.T. is one of the early programs, but EasyGrade, PraestoGrade and others are available too. Each of these programs allows a range of grading and attendance options. Desktop complimentary programs are stronger than last year. Mobile grading makes project grading, group activity grades, and even processing grades and progress reports easier. With an infrared printer or one with the infrared addition a progress report can be beamed to the computer, making providing the extra motivation easy. Students, from middle school through graduate students, appreciate the availability of instant grades. Parents like the progress reports, yet producing these materials can be very time consuming, until recently.

4. Working collaboratively on standards and assessment projects is easier with the handheld computer. Information is shared almost effortlessly with beaming and networks. Rubrics can be developed by one team member and beamed to the others. Results from a survey can be shared instantaneously. Data is not just collected by the person who does spreadsheets. Programs like QuickGraph allow colleagues to review and compare results informally.

5. Scheduling, organizing, and planning for teacher teams can be tracked on the handheld computer. Calendars or datebooks, task lists, and many other ways to organize are available on the handheld computer through using the built-in software. Schedules, minutes or agendas, Gantt charts can be beamed. Priorities can be set within the team. PicoMap is a concept mapping tool that can be used by teachers as they plan. It is a free program from the University of Michigan HiCE project headed by Elliot Soloway.
6. Specific assignments can be developed for individual and groups of students and beamed to them if they too have handheld computers. Individualizing assignments, important as students are making progress toward standards, may be beamed to students and returned to the teacher when completed. There are beaming posts to make this process easier, yet it can be done through the hot sync process too. PalmSheets is a program for teachers to design worksheets and assignments. It is free from Hi-Ce.

Administrators, particularly principals, are using handheld computers to compliment the teacher activities in 1-5 above. They are using handhelds with the site student information systems to check the class schedule of a student in the hall without a pass or quickly call up data in response to a question at a board meeting. Additional uses include coordinating schedules with the district office, developing memos, maintaining lists and addresses, and similar PIM functions. Some principals are typing their observations quietly in the back of the room on their handheld with the fold-up keyboard. Others are beaming pre-selected standards on a bi-weekly basis to teachers at various grade levels and collecting the prior period’s data to be sent to the desktop computer.

Handheld computers enable teachers and administrators to easily do business that took more time and often required hand transferring information from a sheet of paper to the computer.

But how do we get there? What is the “right leverage point” about which Sergiovanni speaks? A critical point has occurred. This could be that leverage point. Data is driving decisions. For teachers and site administrators to influence the decision-making, they must produce the data mentioned by Popham. They need ways that will not increase their load. Handheld computing offers teachers and administrators the opportunity to do something better using technology.

For teachers and administrators to be ready to adopt handheld computers, they must not see this as another burden. Professional development is key in the adoption process. The individuals must see the efficacy of handheld computer use. Often this begins with a teacher using the handheld for something personal. One of our colleagues started putting her shopping list on the handheld. She then moved to using the calendar. Each step made her more confident. Moving from the desktop gradebook and her paper gradebook to the handheld with the backup of the desktop was not a long journey. She next started typing minutes into her handheld using a mini-keyboard and beaming them to others in her team. The uses increased and the handheld computer became a useful and important tool in her collaborative work on campus and in her team efforts. As more teachers at her school become involved in using handheld computing, the tool becomes even more powerful for improving student learning and taking unnecessary burdens off teachers while increasing their effectiveness in gathering real data upon which decisions can be made.

Let us make this the time to encourage teachers to develop and use the data they have and provide them tools, like handheld computers, to support them in their efforts.

References: