Decision Making in the Process of Differentiation

By Catherine V. Parsons and Jodi M. DeLucia

How do classroom teachers balance daily activities with the management of the data they collect? Annual student profile information is collected through standardized testing, allowing for and supporting larger curriculum-level decisions. It is a piece of what educators need to know about students. Often, classroom teachers collect the other pieces. These pieces often prove to be the most relevant data in education. Correlating pre- and post-assessments to performance indicators, student learning profiles, or anecdotal records allows educators to visualize the larger picture of what each student knows and is able to do. This type of data demonstrates levels of mastery on particular concepts assisting classroom teachers in making curricular decisions. The most daunting aspect of this is the time that it takes to prepare, implement, analyze, and apply day-to-day data. Enter technology.

Technologies can be harnessed to plan assessment and data collection instruments that quickly and accurately produce useable information. It offers teachers a method of generating reports, charts, and graphs for use in the decision-making process. This offers educators a vehicle for looking at student achievement. Educators can then redefine goals to meet student needs. The implications of this ability, and the effect it has on education, cannot be overlooked.

Working toward integrating technology in education, we have found that technology, when applied correctly, buys the time teachers are searching for. Common technologies are available to educators that can streamline the processes involved in managing a differentiated classroom environment. Here, we explore data collection and management technologies, their application in the differentiated classroom, and success stories.

Online Survey Tools

Online survey tools provide teachers with methods of quickly accessing details related to the students in their classrooms. Surveys can be used to collect information to assist teachers in the process of differentiating lessons based on interest and readiness. They can also be applied to determine

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a student's primary learning profile. Using an online survey method, teachers can access data quickly, export information to a spreadsheet, and use that information to guide planning. These tools are a great way to do pre- and postassessment.

Choices abound when it comes to selecting online survey tools. The variety of available question formats combined with easy-to-use interfaces allow for endless possibilities. Teachers can quickly create a customized survey or form to meet any data collection need that may arise in the differentiated classroom.

Several districts we work with have created online surveys as pre- and postassessments. One example is Karen Vitek in the Spackenkill Union Free School District (New York), who has been successful using online survey tools to collect student interest information related to her classroom butterfly study. She found that her students were able to respond easily to the survey questions while relating to the simple interface. The feedback she received was immediate, and accessible for planning the next day.

When selecting an online survey tool, be sure to define your needs prior to purchase. Each tool offers various options that affect cost. Taking time in the selection process can prevent overspending. We have experienced the most success with Formsite.com. The combination of options and an extreme amount of flexibility in the product supports the design of a whole host of classroom-based surveys and forms. Formsite.com is one of many valuable survey tools available. Many are as simple to use as a basic word-processing program and do not intimidate even the most novice user.

One side advantage of online survey tools has also been noted. In a recent workshop on data management in the differentiated classroom, the teachers agreed that when using online methods, the students did not seem to feel the same level of pressure as when being assessed using traditional paper means.

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Student Response Systems

Our colleague Steve Hughes from the Red Hook Central School District in New York describes handheld student response systems (SRS) as the ultimate way to track student understanding. "Not only do you ask students questions about their understanding of the content," he says, "but you ask every student every question, and you have a record of their answers." SRS are an engaging way to collect student assessment data. Individual handheld remote units are used to interact with assessment databanks in a variety of formats from pop quizzes to game shows. The backbone databases are recording student performance as they progress through an assignment. Reports can be generated immediately on the entire class as well as individual students. These reports provide the information enabling instant modifications to be made to curriculum, if necessary.

We have experienced teacher success with Qwizdom Interact, EduWare, and eInstruction CPS. (***Editor's note:*** Find URLs for these and other sites under Resources on p. 10.) Multitudes of similar tools are available. Each product consists of a choice of unit options, flexibility of software, and various aligned question banks. We have found the systems to be easily managed by the intermediate computer user. Interestingly, this technology drives novice users to want the skills necessary to take advantage of the benefits of these systems.

Databases

In a recent workshop, educators were discussing the implications of using student records to drive daily classroom-based decision making as part of the differentiation process. The teachers agreed that basic student data such as reading level, interests, readiness assessments, and learning profiles are currently collected in their classrooms. It has been their experience, however, that the process of using this information has proved to be time consuming. It is often disregarded, lost, or filed away because of the lack of an easy-to-use management system. These teachers have done their best to create tools that allow them to apply the information with the time and resources available.

It was our belief that having access to a technology-enhanced method of searching and filtering student information might be the key to assisting the teachers with implementing differentiation. After discussion, we created a simple database, redefining how these teachers felt about accessing student data daily. We added a tool to store general student information in relation to readiness, interest, and learning profile. It has a simple form interface, and each teacher can customize the fields as needed.

This is how it works. Teachers assess student ability levels and collect this information, along with learner pro-

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DI Is	DI Is Not
■ Teachers responding to student needs	■ A "manual" or set of specific instructions for teaching
■ Recurrent evaluation of learning and fine-tuning of curriculum	■ Individualized education plans for every student
■ Tiered lessons based on interest, readiness, and learning profile	■ Tracking or ability grouping
■ A repertoire of skills built through experience with the teaching and learning process	■ "Drill and Kill" testing
■ Building a sense of community in the classroom	■ Disorganized
■ Defining what students need to know, understand, and be able to do	■ Just "modifying grading systems"
■ A way to challenge students to take responsibility for themselves as learners	■ The abolishment of whole-group instruction
	■ Pushing ahead to "cover" content without assessing
	■ Just more tasks and coursework

files, at the beginning of the year and update the information as necessary. They can then query the database on key terms to generate reports. This information can be used in the decision-making process for flexible grouping, tiered lesson design, and general decisions related to student readiness. The teachers have found using their databases to be a highly effective way of accessing the data that previously would have gone unused.

These teachers are using Microsoft Access, but most database programs would work. A simple interface to quickly collect and query data that is searchable and easily updated as well as the ability to query and generate reports is all that is needed.

We provided beginning users with a straightforward, predesigned interface. As educators became more comfortable with the tool, they were able to customize the database to meet the specific needs of their classroom populations.

Final Thoughts

How has technology affected student achievement? This is a never-ending and misunderstood debate regarding technology integration. The true tenor of this conversation cycles around two main factors. First, the definition of student achievement has changed. Information technology literacy is now part of the skill set students will need to be successful, bringing with it a responsibility for educators to expose students to a wide variety of tools. Second, the technology must be skillfully harnessed and applied by professionals to ensure positive effects on student achievement.

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We have addressed the second part of the argument. Harnessing technology in the differentiation process provides an efficient method of using student data. It is the way educators apply data to planning and instruction that leads to student achievement. Educators must be supported in acquiring the skills (in data analysis, data application, and technology-based arenas) necessary to be successful with this process.

Differentiated instruction is the approach to education adopted by the teacher; technology is the tool that allows them to be successful.

Resources

EduWare: http://www.eduware.com/
eInstruction CPS: http://www.einstruction.com/
HOTT LINX: http://www.hottlinx.org/ (an effort to bring quality differentiated curriculum and instruction into U.S. classrooms)
Qwizdom Interact: http://www.quizdom.com/

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