

Differentiation in the K-12 Online Learning Environment

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Differentiation of instruction has been one of the key features of the last decade's school reform movement for bricks and mortar classrooms. Teachers and administrators have struggled with moving from a system based on teaching to the group to a system designed for individualized instruction. Challenges encompass the range of teacher and school system functions from classroom management to pedagogy to scheduling. It is easy to see this one far-reaching concept, differentiation, as the cornerstone of the entire school reform effort.

The growth of online learning in K-12 schools has often occurred in isolation from the rest of school reform. School reformers have understandably focused on the bricks and mortar schools that serve over 99.4% of K-12 students (Setzer & Lewis, 2005). Online learning advocates often come from a technology or alternative learning background. Recently, thanks in part to the work by the North American Council for Online Learning (NACOL), educators in general are beginning to understand the reform potential of online learning.

At the heart of this potential of online learning in school reform is its inherently more individualized approach – its ability to differentiate instruction. However, the literature on differentiation rarely addresses the online learning environment. How does differentiation fit into online learning? What aspects of differentiation come naturally, and which others might even be legitimately ignored?

Differentiation is about the teacher meeting the needs of each individual learner in a way that is responsive, flexible, and focused on rich learning experiences for all students. This can happen horizontally—the same level of content delivered in multiple modes—or vertically—different levels of content geared toward different levels of student abilities. Tomlinson identifies eight elements of a differentiated classroom:

- The teacher focuses on the essentials.
- The teacher attends to student differences.
- Assessment and instruction are inseparable.
- The teacher modifies content, process and products.
- All students participate in respectful work.
- The teacher and students collaborate in learning.
- The teacher balances group and individual norms.
- The teacher and students work together flexibly. (Tomlinson, 1999)

For this short article, I'll examine how just one example from the list of eight elements above, attending to student differences, might be adapted to the online learning environment.

In the online learning environment, the elements of differentiation might be divided into two categories – those that are implemented in the instructional design phase of course development and those that are implemented during the teaching of the course.

In the instructional design phase, attending to student differences might mean horizontal differentiation provided through parallel audio, visual and activity-based experiences for the auditory, visual and kinesthetic learners. A course designed with such multiple modes allows students to access the content in their preferred learning style. It also gives each student the flexibility to learn one day visually and another day via audio, perhaps downloaded to his or her iPod and listened to while exercising.

In its simplest form, vertical differentiation in the design phase can be merely hyperlinks from terms to their definitions so that students can choose to review meanings if they feel the need or read uninterrupted if the terms are familiar. More complex vertical differentiation involves providing a wide variety of resources and activities. This approach leads to another of Tomlinson's elements, the modification of content, processes and products. Although this requires a greater investment of time and resources at the outset, it ensures that more students will learn more content that is customized to their own learning style and abilities.

Although differentiation in the design phase can add significantly to the challenge and cost of creating a course, in the teaching phase, it may come more easily and naturally in the online environment than in the face-to-face classroom. Without a classroom of twenty-some students to manage and respond to simultaneously, the asynchronous online environment allows teachers to build relationships individually and communicate regularly with each student. This richer, individualized interaction leads to a greater understanding of any particular student's needs, and the attentive teacher can adjust appropriately using a wide variety of instructional techniques.

Marzano, Pickering and Pollock identify nine instructional strategies that research has shown can improve student achievement:

- Identifying similarities and differences
- Summarizing and note taking
- Reinforcing effort and providing recognition
- Homework and practice
- Nonlinguistic representations
- Cooperative learning
- Setting objectives and providing feedback
- Generating and testing hypotheses
- Cues, questions and advance organizers (Marzano, Pickering, & Pollock 2001)

All of these are perfectly adaptable to the online learning environment and can themselves be divided into those techniques that are integrated into the design phase and the instructional phase. However, in the bricks & mortar classroom, if a teacher is to use a wide variety of these instructional techniques, each at the right moment for the right student, the teacher must be concerned about not only the pedagogical issues, but also about classroom management. It becomes difficult or impossible to individualize to the level required to maximize each

individual student's learning when there are 25 other students to worry about all working in the same space and demanding the teacher's attention at the same time.

By contrast, in the online learning environment a teacher can respond to each individual without worrying about keeping other students busy. The teacher can attend to student differences by drawing on whatever instructional technique a given student needs at a given time. The typical classroom management question of differentiation – what do I do with one group while working with another?—is a moot question in asynchronous online learning and can thus be ignored.

Many of these ideas are unified in an approach called Universal Design for Learning (UDL) developed by CAST, the Center for Applied Special Technology. CAST has its origins in efforts to use technology to serve special education students, but they have recently emphasized an approach where technology is used to differentiate instruction for all students in all classrooms. (Rose & Meyer 2002) This UDL approach might be seen as a way to integrate technology into the bricks & mortar classroom, but it might also be seen as bridge between the bricks & mortar environment and the online learning environment. In the context of this article, the UDL approach describes differentiation in both the design and instruction phases of an online learning environment.

UDL distills its approach into three principles:

1. To support recognition learning, provide multiple, flexible methods of presentation.
2. To support strategic learning, provide multiple, flexible methods of expression and apprenticeship.
3. To support affective learning, provide multiple, flexible options for engagement.

In addition, UDL lists 12 instructional techniques that support these principles:

- Provide multiple examples
- Highlight critical features
- Provide multiple media and formats
- Support background knowledge
- Provide flexible models of skilled performance
- Provide opportunities to practice with supports
- Provide ongoing relevant feedback
- Offer flexible opportunities for demonstrating skill
- Offer choices of content and tools
- Provide adjustable levels of challenge
- Offer a choice of rewards
- Offer a choice of learning context

The alignment between the approaches of differentiation, research-based instruction, and UDL are clear. K-12 online learning advocates would do well to use the language of Tomlinson, Marzano and others to communicate their message effectively to teachers and administrators focused on applying the work of these researchers to the bricks and mortar classroom. This can help ease the way for bringing online learning to a school system, help teachers understand how to translate those principles of good teaching from one delivery method to the next, and in general help educators to see the value of online learning as a critical technique for any school

system's efforts to improve instruction through differentiation and individualization – and thus its critical role in school reform.

References

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Biographical Sketch

David Glick has been in K-12 education for over 20 years and has worked extensively with public, private, and charter schools in a variety of roles, including teacher, curriculum coordinator, and staff development coordinator. At the Minnesota Department of Education, Dave was the state's first online learning coordinator and a regional coordinator for the Minnesota Educational Effectiveness Program. Since 2000, he has focused his curriculum, staff development and technology expertise on online learning and has helped develop distance education programs throughout the country. Dave is currently an independent consultant specializing in K-12 online learning programs for students and teachers.

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