

## Chapter 45

# Differentiation 2.0: Using the Tools of Technology to Meet the Needs of All Learners

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### ABSTRACT

*This case study highlights the essential components of differentiating instruction to meet the needs of all students, including those most advanced, and English Language Learners by using a variety of technologies. Many teachers in the study had access to technology, but few received limited professional development. Roadblocks that many teachers encountered are identified with possible solutions for addressing those concerns. The recommendations provided for addressing concerns that classroom teachers face are (1) how to differentiate instruction for all learners, (2) how to learn and sustain growth in using the tools of technology in lesson planning and implementation, and (3) how to manage all of the various components so that chaos does not ensue and every students' learning is maximized. A review of all of these issues can be beneficial to other teachers in heterogeneous classrooms who want to use technology as tool for differentiating instruction.*

### INTRODUCTION

Today our classrooms are a tapestry of diversity. Classroom teachers meet many challenges as they try to address the student needs. Classrooms are not only academically diverse, but culturally and linguistically as well (Sapon-Shevin, 2000/2001; U.S. Department of Education, 2012). In the district where this case study takes place, educa-

tors work very hard to collaborate and utilize the resources they have to meet the growing population of English Language Learners while continuing to balance equity and excellence when serving the needs of all students. During the school year, the authors spent time in the schools where teachers met to plan curriculum and instruction to implement the Common Core State Standards (NGA & CCSSO, 2010). Through these discussions,

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teachers collaborated and modified lessons as they tried to attend to the goals of the lessons while embedding technology into their classrooms. While the case study represents a common issue in the school, all names used in the case study are pseudonyms in order to ensure anonymity of the participants. This case study highlights the reality that there are many issues in meeting the needs of all students, but in concert with professional development, the tools of technology provide a promising resource for classroom teachers. The case study is organized to (1) present information about the organization, (2) introduce the scenario where the problem is defined, (3) outline problems and concerns, and (4) offer recommendations and solutions.

### **ORGANIZATION BACKGROUND**

The district in which the school in this case study is located has a total number of 18,810 students in 25 schools. The district is culturally, linguistically, economically, and academically diverse. The student population ethnic breakdown for the school district is as follows: 8,062 White; 7,674 Hispanic; 1,563 Native Hawaiian/Pacific Islander; 621 two or more races; 438 Black; 352 Asian; and 100 Native American/Native Alaskan. There are 10,351 students that receive free lunch and 1,681 students that receive lunch at a reduced rate. A total of 1,785 students are involved in the district's gifted and talented program, 1,818 students involved in the district's special education program, and 8,006 students classified as Limited-English Proficient in the district.

### **Elementary School**

The elementary school itself has a population of 683 students. In terms of student population, 51% are Hispanic and 69% of the students receive free or reduced lunch. The elementary school serves

kindergarten through fifth grade. All classroom teachers are highly qualified and many not only have their teaching certificate, but an endorsement in teaching English as a Second Language as well. This school is highly responsive to the needs of English language learners. All communication sent to students' home is done in English and Spanish. The school tries to involve parents in the school community in multiple ways. Students with other needs, such as students with disabilities and gifted and talented learners are also served in this school.

### **Gifted and Talented Services**

Gifted and talented students are served through the district's program. The district states that gifted students need to participate in classes in which they receive instruction services different from those normally provided in the regular classroom. Approved or licensed teachers of the gifted are required to deliver direct instruction for 150 minutes by a designated teacher each week. In terms of gifted services, students meet with the gifted facilitator once a week to work on curriculum designed by the the program teachers. This district has received numerous awards from the department of education as the outstanding gifted program for large schools in the state, as well as, received curriculum awards from the state association for gifted education. The gifted curriculum does not currently include the use of technology.

### **Access to Technology**

The case study school has access to a variety of tools of technology. Every teacher is given a netbook as well as an iPad for use in the classroom. Many teachers use both the netbooks and iPads with students during center time or special projects. Every classroom is equipped with three desktop computers and a desktop printer. All classrooms have interactive whiteboards (Promethean board)

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