

Understanding the Role of UDL in Personalized Learning

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Abstract

Personalized Learning has become the new buzz word in education. Over the last two years the Center on Online Learning and Students with Disabilities at the University of Kansas has been conducting research on the emergence of personalized learning in blended learning, competency-based environments and its impact on the achievement of all learners. Our findings reinforce UDL as a foundational element of personalization, and how both are actualized using competency-based learning strategies to improve learning outcomes.

Keywords

Personalized learning, Competency-based education, Blended learning

INTRODUCTION

The unprecedented growth of technology in schools is overwhelming and difficult to conceptualize within the traditional instructional and curricular frameworks (Basham, Smith, Greer, and Marino, 2013). With an investment of over \$500 million in the first quarter of 2014 (Shieber, 2014), the growth and influence of technology in education will continue to impact the classrooms of tomorrow. While the technology itself has the potential to dramatically shift teaching and learning, the greater impact may actually come from the data these systems generate. Combining real-time data collection with modern technology tools creates the potential to achieve educational outcomes that may otherwise be unattainable, especially for students with disabilities and other diverse learning needs. Thus, designing environments that consider learner variability from the outset is critical. Personalization takes the best of online learning and real-time student data to support all students in highly engaged, often competency-based environments, where each student works at their own pace and along their own path within an individualized learning plan. Districts implementing these personalized systems must address challenges with data discontinuity and with collision points currently imposed by aspects of the CCSS which presume a more rigid and traditional model of education.

BACKGROUND

The MI2 is a state reform district in an urban environment located in the upper Midwest of the United State. The MI2 administers control over chronically low performing schools. By design, MI2 uses technology, data, and com-

petency-based practices to support a personalized learning environment. Within this environment, each student has an individualized learning plan and students with disabilities have a federally mandated Individualized Education Program (IEP).

MI2 serves approximately 6500 students across 12 schools. All schools are located in areas of extreme urban poverty. Many homes have been vandalized or fortified with bars and gates and many have been abandoned. Empty dwellings are often burned by arsonists and then boarded up to discourage squatters and other illegal activity. Nearly all student's previously attended school in chronically low performing schools. Across the district there is a range of students with disabilities between 12-20% (depending on school).

To identify design principles and practices for online learning for student with disabilities, the Center conducted numerous long-form as well as short-form observations, over an 18-month window, across multiple classrooms and other learning environments within MI2. During initial observations researchers used an open observation technique to identify common principles and practices across settings. In later observations the researchers used the Universal Design for Learning (UDL) Instructional Observation Instrument to align practices to the UDL framework. In the process of identifying design principles and practices, researchers also interviewed both instructional staff and students to confirm how these principles and practices were operationalized on a day-to-day basis.

Researchers conducted numerous observations over an 18-month period, identifying the design principles and practices using a multilevel coding process. This process began with researchers conducting observations and then developing initial themes from the emergent observations. Having identified some common themes, researchers then conducted observations and interviews to support an operationalized understanding of the principles and practices. Finally, the researchers used an instrument designed to measure UDL alignment.

OVERARCHING PRINCIPLES OF DESIGN AND PRACTICE

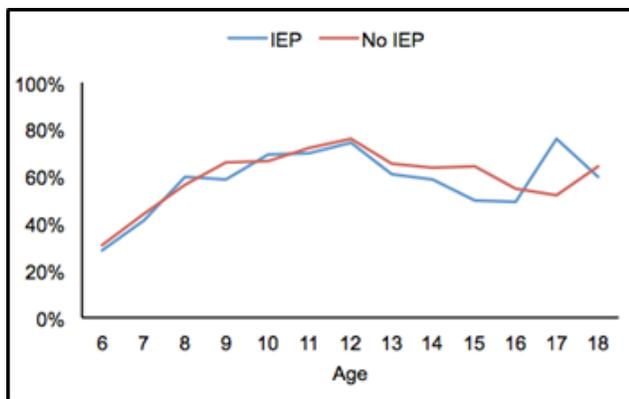
Student self-monitoring strategies are designed, built into, and consistently used throughout this personalized learning environment. These include the consistent classroom use of data transparency related to student effort toward progress ("Target Trackers"), and their effects on outcomes as well

as the use of transparent indicators throughout the environment on student self-monitored progress. The MI2 curriculum incorporates the use multiple means of expression (Principle 1 of UDL) within all classrooms. Furthermore, students are required to demonstrate mastery in at least three ways (Principle 2 of UDL). Student control over time, place, path & pace (Horn & Staker, 2013) was found to significantly support engagement (Principle 3 of UDL). The application of these institutionalized protocols and strategies helps support both teacher and student decision making to create personalized pathways in the learning process, essential for students with disabilities, and beneficial to all students.

SAMPLE STUDENT OUTCOMES

Mathematics

Of the data on 6,180 students, 6.2% met ½-year growth; 6.8% met ¾-year growth; 13.9% met 1-year growth; 12.7% met 1½-year growth; and 38.5% met 2-year growth in Math. All combined, 65.1% of the students met at least 1-year growth in Math. Male students showed lower percentages of meeting ½-year growth in Math, but higher percentages of meeting 2-year growth and at least 1-year growth compared to female students. Students with disabilities (SWD) showed lower percentages of meeting ¾-year growth, 1-year growth, and 1½-year growth in Math, but higher percentages of meeting 2-year growth and at least 1-year growth compared to students without disabilities (SWOD). However, the estimated effect sizes suggest-



ed that all those differences were minimal.

SIGNIFIGANCE

This study presents the first known investigation on a personalized learning environment, especially for students with disabilities and other diverse learning needs. It provides a starting point for the identification of variables needed to successfully build, test, and eventually scale personalized learning from within a UDL foundation. Currently the Center is:

- replicating as well as testing the efficacy of these design principles (including more specific practices) in other schools in the early stages of personalized, blended & competency-based learning implementation
- identifying critical data points (demographic, usage, achievement, etc.) necessary for tracking student progress
- Analyzing strategies for student self-regulation that are emerging as essential components of successful personalized systems of instruction.

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