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Data-based, Goal-driven Instruction:

The Use of Goal-setting and Goal-related Software in the Differentiated Classroom

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On April 25, 2013, Edward Graham, a journalist for NEA Today, looked back at the Reagan-era report, A Nation at Risk. Compiled in 1980 by Reagan's own National Commission on Excellence in Education, the report was considered a landmark in modern American educational history. The report, 18 months in the making, had very little positive data on where public schools in the United States were regarding student educational achievement on standardized tests. Graham's goal in looking back at this report was to explore how far America's education system had progressed in the 30 years since the publication of A Nation at Risk. According to Graham, there has been little change to many of the items in the report that raised alarm bells 30 years ago. However, our country's obsession with standardized tests and assessment has continued. The passage of the No Child Left Behind Act, as the reauthorizing of the Elementary and Secondary Education Act by President George W. Bush in January of 2001 was known, led to an ever-increasing use of standardized tests as the means for measuring student success (No Child Left Behind, 2002).

In the report, Primary Sources 2012: America's Teachers on the Teaching Profession (Scholastic & Bill & Melinda Gates Foundation, 2012), 74% of the over 10,000 K-12 teachers who were surveyed believed that standardized tests did not accurately reflect their students' achievement. The public seems to agree with this view. In a report for Phi Delta Kappan by Bushaw and Lopez (2013) 75% of respondents stated that they felt the increased movement toward standardized testing in their local schools either hurt instruction or had no impact.

If both teachers and the public are not seeing the benefit, what factor(s) make a difference in student achievement? For some, the answer is using data-driven decision making, differentiated for each student, to inform goal-driven instruction.

According to Tomlinson, et al., (2003), differentiated instruction is a set of practices that are student-centered and informed by principles of responsive teaching. This means that teachers do not wholly rely on assessment tests and academic levels to plan instruction. Differentiation occurs by: examining content; examining student engagement in that content; examining the product students produce to show an understanding of the content; and examining the classroom environment (Tomlinson, 2014). To successfully implement differentiated instruction that is both positive and beneficial, setting goals is a key component. This step helps in creating clear, specific, understandable, and attainable goals for each student. These goals are what ultimately direct individual instruction and educational studies have shown that there is no single template to doing this (Tomlinson, 1995). While goal setting is nothing new, it remains a powerful educational tool. In a review of goal setting, Lathem (2001) reflected back to years of studies that showed goal setting to be a highly positive and supportive experience across a wide range of disciplines; Locke & Lathem's (1990, 2002) work supports the superior utility of goal setting. In the area of differentiated instruction it can be used effectively when student/teacher goal setting takes into account individual students and their learning profiles (Lawrence-Brown, 2004).

To successfully implement differentiated instruction that is both positive and beneficial, goal setting becomes key in creating clear, specific, understandable, and attainable goals for each student that drives individual instruction.

These learning styles, as well as the students who use them, are as diverse as ever. As Gregory and Chapman (2012) state, teachers who use goal-setting differentiated instruction regardless of the educational setting in which they work, or the level of student diversity in that setting, need to have a teacher-driven mindset that not only knows, but embraces the following ideas:

- All students have areas of strength.
- All students have areas that need to be strengthened.
- Each student's brain is as unique as a fingerprint.
- It is never too late to learn.
- When beginning a new topic, students bring their prior knowledge base and experience to the learning.
- Emotions, feelings, and attitudes affect learning.
- All students can learn.
- Students learn in different ways at different times. (pp. 2-3)

To achieve a culture of teaching that is based on goal-driven instruction there has to be professional development that can help bring about a sustainable change to the system. According to Desimone (2009), teacher professional development practices that have been associated with changes in knowledge and practice must include five elements: (a) there must be a content focus, (b) they must be engaged in producing active learning, (c) there must be coherent instruction, (d) there needs to be at least 20 hours of contact and practice, and (e) there must be collective participation of the staff. For sustained long-term change, teachers need to see the connection between instruction and learning, and reflect on student achievement. Any data that is used to drive instruction must take that into account.

Assessment information, in itself, does not lead to improved student achievement. The teacher's response to assessment data, and the instruction that they create from what they see in that data, is crucial. Yet these actions may or may not be implemented, and may or may not be effective (Cohen and Moffitt, 2009). That is why it is crucial for teachers to have professional development and training to help them achieve goal-driven instruction that is differentiated.

Borrowing a goal-creating concept from Human Resource Organizational Development (HROD), educators should first strive to create goals that are SMART:

S Simple and specific

M Meaningful and motivating

A Achievable and accountable

R Realistic and reviewable

T Time-bound and trackable

Educators should also place equal importance on the roles of efficacy and feedback (Locke and Latham, 2002), which both teachers and students bring to the table. In addition, according to Tomlinson (1995), "Student self-beliefs of efficacy to strategically regulate learning also play an important role in academic self-motivation. Students who perceived themselves as capable of regulating their own activities strategically are more confident about mastering academic subjects and attain higher academic performance" (p. 674.).

Mashburn, Downer, Hamre, Justice, and Pianta (2010) in their discussion on the implementation of a Response To Intervention (RTI) multi-tiered level of support system, found that a plan that includes an external-to-the-classroom coach that provides classroom feedback about implementation practices was effective in achieving and sustaining long-term teaching change. While the role of the coach who observes, works with the classroom team, and collects implementation data, appears to be crucial, that role can be structured to meet the school's educational and staffing needs. It is one of the strategies that showed the most promise in achieving changes in teaching. In this study, there were three to four cycles of assessment, intervention, self-reflection, and coaching that were done annually. Opportunities for self-reflection were also rated as one of the strategies that helped engage teachers in the change process.

According to Coburn and Talbert (2006), if districts want to move toward a system of evidenced-based practice, they need to recognize that teachers need access to different kinds of evidence for different purposes, and in different levels of their system, because individuals with different work roles have vastly different data needs. What's more, teachers within the district might need to collaborate with the data they collect from their work roles in order to provide the best goal-driven instruction for the students with whom they collectively work. For example, a regular education teacher, a special education teacher, and a speech and language pathologist may have the same student on their caseload, but may need different data based on their work roles. However, they may also need to bring both their data and their expertise together to develop better goal-driven integrated instruction for that student.

To achieve this type of differentiated instruction, many districts have started using some form of online data collection tool. Research on data systems and tools to support instructional decisions is a small and growing body of literature. Stringfield, Wayman, and Yakimowski-Srebnick (2005), and Hamilton, Stecher, and Kline, (2002) discuss the literature on using test-based accountability data for decision making. As of this time, there is little evaluation across cases of these data tools in application and most of them are being utilized only for interpretation and curriculum development for state required testing results.

One of the software tools that goes beyond this is a product by ONEder that was originally designed as a data management and instructional tool for students on the autism spectrum. Based on the principles of Universal Design for Learning (UDL) and the principles of differentiated instruction, it gives teachers access to a large database of lesson plans, all aligned to state standards. These lessons are customizable for each student and the program allows teachers to automatically incorporate Individualized Education Plan (IEP) goals for students in special education. The database includes both an academic and functional skills platform and a data dashboard that gives teachers real-time data on each student's progress toward their individual goals. It also provides customized reports to view student, school, and district progress (www.ONEder.com).

To address some of the issues in adopting and sustaining a process of change toward data-driven and goal-directed instruction, ONEder provides training and coaching for teachers and administration, showing them how to use the platform at the individual school level. Teachers not only

learn how to use the platform and to access the lesson plan database, but more importantly, are taught how to analyze and interpret their students' data. This significantly cuts down the paperwork that is involved with data construction, giving them more time to spend on teaching and individualizing their lesson plans (www.ONEder.com). Many teachers have the following complaints about data-driven instruction: it takes them a lot of time; there is a lot of data to process; and lastly, it unclear how they can use this data to improve instruction. ONEder's data dashboard shows teachers, down to the individual level, how close their students are to achieving instructional goals.

Data-driven decision making is a complex undertaking, even for an educator who understands how to view and interpret data. Data should not replace the myriad of decisions that teachers make in their classrooms daily that inform their instruction; it should be used to augment those decisions. However, it requires time and effort for teachers to become proficient in the process of using data to support their instructional decisions. Educators must have specific uses in mind when examining data, and the decisions they make must be both strategic and timely (Secada, 2001). Data can help point to or inform goals, but goal setting is a process that should use data as one of the many tools that the stakeholders who are involved in the goal-setting process bring to the table.

Data requires study and analysis to make it useful. Software and platforms have become part of this process for both data collection and analysis. Although ONEder is a fairly new software platform, having only been developed in 2011, early research shows it to be a viable tool for assisting

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teachers make use of data. Currently only a handful of studies have been done and most of them were conducted using the former versions of the software; Autismate and TeachMate 365 (www.ONEder.com). Despite this, ONEder shows promise in both the product design and technical support that the company provides when looking at the research data on the types of strategies that must be in place for large-scale instructional change. These strategies include helping teachers become better at using data for goal-driven instruction and in giving them a voice in improving the product based on their feedback. This makes it a tool that has a specific use for data and instruction that is teacher-influenced and teacher-informed. ONEder can also be used for data-collection and instruction that is timely. This is because it collects real-time data on the current students

in a teachers' classroom. More in-depth research should be done with schools utilizing ONEder to see how the platform has impacted goal-driven instruction and academic gains to ascertain how useful this tool is in assisting teachers to develop in this aspect of their teaching.

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