Engaging Educators in a Data-Based Decision Making Process

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Abstract

When teachers are organized as professional learning communities, they are able to create coherent instructional programs that help students improve their academic achievement. Suggestions regarding how educators can engage in a data-based decision making process to improve teaching strategies are offered. Three teaching strategies identified by research as highly influential are recommended: reciprocal teaching, development of meta-cognitive skills, and collaborative learning.

Engaging Educators in a Data-Based Decision Making Process

This paper describes the recommendations I would give to an elementary school about how educators can engage in a data-based decision making process, according to the set of data presented by Huitt, Huitt, Monetti, and Hummel (2009) to improve students' learning. The role that I imagined is a K-6 educator who wants to develop a constructivist teaching approach as described by Alesandrini and Larson (2002) and at the same time, is accountable for learning results. Teachers would be more successful if they would have a wide understanding of their teaching practices' effects (Campbell & Levin, 2008) as research reflects.

The School Setting

The school where I visualize this process would be a private, non-profit, and university-related school. The school's tuition is lower than the majority of private schools in the city. The families that compose the school's community are primarily middle-class families, with many being single-parented. In general, terms, parents get involved in their children's academic development and support school's work and activities.

This PP-12 is a newly established school, which is still developing its culture. The first year it had an enrollment of 70 elementary students, the second year there were approximately 500 students from PP-11, and the third year around 800 students from PP-12. Students' schools of origin were primarily private schools that follow traditional teaching methodologies. Parents and students are seeking for an alternative learning and teaching environment where creativity, critical thought, and diversity are valued. Students are beginning to develop research skills, self-

control, self-assessment, social skills, and nonviolent conflict resolution skills. According to recent standardized tests, students' academic achievement is average.

In terms of infrastructure, the school has large and comfortable classrooms. There is wireless connection in every classroom and digital projectors in almost every classroom's ceiling. There are not Smartboards. Students are allowed to bring their electronics to school such as iPods, iPads, tablets, cell phones, and laptops. There is a computer lab with 20 computer terminals. Beginning in 7th grade students use their personal computers daily, but use of laptops for learning purposes from 4th to 6th grade is still a project to be developed.

Faculty members are highly qualified. Most of them have masters' degrees and an enormous interest to develop their knowledge and skills even further. They constantly try new methodologies and techniques and are a group of professionals that enjoy learning and research. Nevertheless, their capacity to transfer constructivist theory into practice is still in progress.

Engaging Educators

Schools can revitalize themselves if they create professional learning communities (Senge, 2004). This implies that all members participate, express their ideas, and develop together their capabilities to fulfill common goals. This arrangement allows change from within, a self-directed process that promotes teachers' empowerment. More than 20 years of experience demonstrate the effectiveness of establishing professional learning communities to improve schools (Senge, 2004). Teachers can join and make decisions based in research to improve their students' academic achievement. They only need to lose the fear to use data to guide their professional decisions (Flowers & Carpenter, 2009).

Flowers and Carpenter (2009) suggested a process of five steps to help schools' faculty and staff make decisions. The first one is to review the school's improvement plan to highlight its most urgent issues. Data analysis should be integrated to the existing school's initiatives for improvement and never should be isolated (Flowers & Carpenter, 2009). Second, the school needs to define which members will analyze the data (which teams or committees). It is desirable that as many school's community members as possible participate in the process. The third step is to select the data that are most relevant to address the highlighted issues. The fourth step is to examine and discuss the data establishing a common understanding of how to read and interpret the data available. It is necessary an open mind to examine data objectively and without bias. Finally, the group set goals based on data and evaluate progress. Steps three through five repeat continuously until goals are met. In the next section, The steps advocated by Flowers and Carpenter (2009) will be applied and recommendations for implementation will be given.

Improving Teaching Strategies

The mentioned school described its educational practices as innovative and constructivist. At the same time, the administration recognizes that evaluation processes need to take place to assess progress and keep improving teaching for students' benefit. A common understanding among teachers of schools' academic philosophy is necessary to serve students better and help them perform at their highest capacity.

Schools commonly evaluate progress based on standardized tests. It is essential to remember that achievement exam scores are not the only necessary data for schools'

improvement (Flowers & Carpenter, 2009). To contextualize test scores, it is necessary to analyze other equally valid and relevant information such as students' sample works, lesson plans, rubrics or assessment tools.

Hattie (as cited in Huitt et al., 2009) classified as important variables a set of teaching strategies according to their effect in students' achievement. Among the most notable were (1) reciprocal teaching (d = 0.74), (2) the use of meta-cognitive strategies (d = .69), and (3) favoring cooperative versus individualistic learning (d = .59). The selection of these instructional methods is supported by the mentioned research as methods with a high effect on students' achievement. At the same time, they are congruent to a constructivist teaching approach, which makes the decision of improving these teaching strategies not only research based, but aligned to the school's context.

Reciprocal teaching is a technique used to increase comprehension. Palincsar and Brown (as cited in Stricklin, 2011) designed the reciprocal teaching strategy and included four reading strategies: predicting, clarifying, questioning, and summarizing. Students predict what the reading will be about and then will confirm it during reading. Then, they will clarify unknown words or ideas using the context. They will ask themselves questions about what they are reading, and finally, they will summarize what they read. When applying the reciprocal teaching technique, teachers activate prior knowledge before reading and invite students to make predictions. During reading, teachers monitor and invite students to use the four reading strategies. Finally after reading, teachers request students to share their reading experiences and

define the strategies that helped them comprehend what they read. This activity encourages them to make a meta-cognitive assessment.

Meta-cognition refers to the student's awareness and monitoring of his or her own learning process (Ünal, 2010). It also relates to learning higher-order mental processes such as planning learning or selecting skills or strategies to solve problems (Ünal, 2010). Ünal (2010) found that meta-cognition skills are a strong predictor of academic success. Students with higher meta-cognition skills were academically more successful. This evidence supports the effort to develop meta-cognitive skills in the elementary school to help students improve their academic achievement. Reciprocal teaching is an example of a technique that promotes meta-cognitive skills. Self-assessment and peer-assessment activities (Liu, & Lin, 2007) also promote the development of meta-cognition. Teachers should teach meta-cognitive strategies directly to students, design activities that promote them, and use assessment tools that include meta-cognition such as when a student identifies the reading strategy that helps him or her comprehend better.

Cooperative learning is a teaching strategy congruent with the constructivist approach. One of the main postulates of Vygotsky's cultural-historical theory is that people learn in social contexts (Driscoll, 2005). An experimental study made in Pakistan showed that cooperative learning could increase students' achievement (Ahmad, 2010). Two sixth grade groups were part of the study. Cooperative learning was implemented only in one of the groups. Pretests and posttests were administered finding that the experimental group performed better at the posttest.

Teachers should implement teaching strategies that have been proved to be effective and at the same time, encourage supportive learning environments.

A plan for the implementation and development of these teaching strategies can be defined as (1) capacity building through workshops at the beginning of the school year, (2) sharing experiences regarding the implementation of the strategies during the school year, and (3) evaluating results at the end of the year.

At the beginning of the school year, the necessary information about the strategies, and how they can be implemented successfully can be analyzed through workshops. Videos or articles demonstrating how reciprocal teaching should be developed and assessed should be shared with the faculty at the beginning of the year. Internet resources related to how to develop meta-cognitive skills can be shared among faculty members. Videos showing cooperative learning experiences can be analyzed by faculty and implemented in the classrooms.

Once a month, teachers can get together to share their experiences, doubts, successes, failures, and make decisions about the process. It will be indispensable to document the implementation of each teaching practice to analyze collectively what has been achieved and what can be improved. At the end of the year, implementation can be evaluated with the support of an external resource.

The reason for choosing these three teaching strategies relates to their applicability to any subject-matter, congruency with the school's philosophy, and contribution to a coherent instructional program. When teachers collaborate across content areas and grade levels to achieve together common goals and implement consistent teaching strategies they are

constructing instructional program coherence (Oxley, 2008). Reciprocal teaching, developing meta-cognition skills, and implementing collaborative learning are congruent teaching strategies. They may help students improve their performance in any class, at any level, from elementary to higher education, helping them become better learners for life.

References

Ahmad, F. (2010). Effect of cooperative learning on students' achievement at elementary level. *International Journal of Learning, 17*(3), 127–141.

Alesandrini, K., & Larson, L. (2002). Teachers bridge to constructivism. *The Clearing House, 75*(3), 118-121.

Campbell, C., & Levin, B. (2009). Using data to support educational improvement. *Educational Assessment and Evaluation, 21*(1), 47-65. doi:10.1007/s11092-008-9063-x

Driscoll, M. P. (2005). *Psychology of learning for instruction* (3rd ed.). Boston, MA: Pearson Education, Inc.

Flowers, N., & Carpenter, D. (2009). You don't have to be a statistician to use data: A process for data-based decision making in schools. *Phi Delta Kappan, 91(*2), 64-67.

Huitt, W., Huitt, M., Monetti, D., & Hummel, J. (2009). *A systems-based synthesis of research related to improving students' academic performance*. Paper presented at the 3rd International City Break Conference sponsored by the Athens Institute for Education and Research (ATINER), October 16-19, Athens, Greece. Retrieved from http://www.edpsycinteractive.org/papers/improving-school-achievement.pdf

Liu, E. Z. F., & Lin, S. S. J. (2007). Relationship between peer feedback, cognitive and metacognitive strategies and achievement in networked peer assessment. *British Journal of Educational Technology, 38*(6), 1122–1125.

Oxley, D. (2008). Creating instructional program coherence. *Principal's Research Review*, *3*(5), 1–7. Retrieved from http://educationnorthwest.org/webfm_send/620

Senge. P. (2004). *Escuelas que aprenden [Schools that learn]*. Colombia: Editorial Norma.

Stricklin, K. (2011). Hands-on reciprocal teaching: A comprehension technique. *Reading Teacher*, *64*(8), 620–625.

Ünal, M. (2010). The relationship between meta-cognitive learning strategies and academic success of university students (Ahi Evran University Sample). *International Online Journal of Educational Sciences*, *2*(3), 840–844.