

Readiness for active student engagement: Principals' perceptions related to the challenges of hands-on activities in a district of Belize

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Active student engagement strategies, such as hands-on activities, have been an important instructional strategy in schools throughout the world, but traditional passive teaching methodologies are common. This is true in regions of Belize, where limits in resources and educational capacity create barriers to improved student engagement. This research surveyed principals in Belize regarding their perceptions of the current state of active teaching methodologies in their schools. The responses suggest that there are benefits to active student engagement, but a lack of materials and teacher training, and concerns with safety make the use of hands-on lessons more difficult.

Give the pupils something to do, not something to learn; and the doing is of such a nature as to demand thinking; learning naturally results.

– John Dewey

Introduction

Ken Robinson (2013) recently discussed in a TED Talks speech his perception of student characteristics and general factors that increase achievement in schools. Each student is different, he stated, which suggested that education should be personalised to address the innate curiosity and creativity of the individuals being taught. Personal meaning is important to education, and it is the factor that moves classrooms from standardised compliance to deep learning experiences. Robinson's assertions resonate with many in the education profession, as there is an increased emphasis in schools on creating meaningful learning opportunities for students that move beyond the teacher-directed classrooms of the past (Gerstman, Salehi & Lobo, 2011; Covell, Mcneil & Howe, 2009). This can be seen in project-based learning and other hands-on initiatives (Kaldi, Filippatou & Govaris, 2011), as well as new books for teachers that address student engagement through active participation (Schlechty, 2012). The fundamental purpose of these types of instructional methods is to get students involved deeply in meaningful lessons that align with the desired curriculum (Schlechty, 2012).

Student engagement is a requirement for learning (Mo, Singh & Chang, 2013; Dotterer & Lowe, 2011), so schools that are looking to increase achievement often focus on this foundational need. Increasing engagement can occur through

reforming instruction, which may include strategies ranging from increasing classroom time to changing the methods of presenting the curriculum. The purpose of this paper is to examine the readiness of teachers in a region of Belize for increasing hands-on activities as a strategy for increasing student achievement. This was done through an action research project that surveyed the perceptions of local principals on this issue.

Student engagement

The effect of student engagement, sometimes referred to as on-task behaviour, on academic achievement, has been examined for the past 50 years. Initially researchers identified the positive effect that student engagement had on student achievement (Carroll, 1963; Bloom, 1976; Walberg, 1982). Over time researchers began to refine this view of student engagement and identified the concept of academic learning time, which is achieved when students are on task, at the correct level of difficulty and experiencing success. Researchers concluded that this could increase the impact that student engagement had on achievement (Fisher, Filby, Marliave, Cahen, Dishaw, Moore & Berliner, 1978; Squires, Huitt & Segars, 1983).

As researchers continued to examine the issue of engagement they began to focus on the factors that teachers control within the classroom. It was determined that engagement occurs when teachers create a positive classroom environment (Fullerton, 2002) and are accepting, supportive and challenging (Shernoff, Czikszentmihalyi, Schneider & Shernoff, 2003). It was also verified that student engagement increases when teachers vary their instructional techniques and the types of activities and assignments provided for students (Cotton, 2000). Teachers who engage students in authentic activities, such as hands-on instruction related to the content of study, increased student engagement (Weiss & Pasley, 2004). Research with educationally 'at risk' students suggests teachers who incorporate a variety of instructional strategies in the classroom including hands-on-learning, and simulations increase engagement and student achievement (Langer, 2001).

Schlechty (2012) extends upon the teacher's responsibility for student engagement. He asserts that the primary role of the teacher is to design work that is engaging and meaningful for the greatest number of students in the classroom. These assignments should be authentic and require active student engagement to the extent possible. This ideal is discussed within many schools but is often not realised.

Belize education

The area of Belize where the researchers collected data has schools that are both religious and government supported (Wainwright, 2008). The classrooms often have multiple grades, and many of the principals have full teaching loads as well as administrative duties (Achtem, 2010). These classes have traditionally been teacher-directed through lectures and other passive learning activities, but there has been interest in implementing teaching strategies to increase active student engagement.

There has been training in the country to change this tradition through grants and other initiatives that are designed to promote student engagement (The Guardian, 2012).

One of these efforts includes a European Union grant to increase the use of hands-on activities in mathematics and science classes. The Stann Creek district in Belize collaborated with grant workshop trainers to provide teachers with hands-on instructional strategies designed to create more meaning for students learning abstract concepts (The Guardian, 2012). This training occurred in the Banana Belt region, which did not include the region of Belize being studied for this research, but its focus suggests instructional methods are inconsistent or lacking.

The limited understanding among teachers of hands-on learning methods may be due to insufficient professional development. Steinbach (2012) found that politics and tradition were limiting the effectiveness of increased educational requirement for teachers in parts of the Caribbean. Furthermore, Hickey, Gill, and Brown (2011) have found that lack of training is an obstacle to school improvement in southern Belize. Many of the teachers do not have an educational background beyond high school, and the local education agency does not have the financial or human resources to consistently build upon this human capital. Teachers may lack an understanding of strategies to make hands-on activities effective and are sometimes resistant to trying something that others are not doing. Even when teachers use hands-on activities in the Caribbean, research suggests that student assessments do not complement this instructional method (Ogunkola & Clifford, 2013). Professional development of teachers is an important factor in any initiative: in Belize; in other Caribbean countries, and elsewhere.

George (2013) reported on an effort in the Caribbean to examine the efficacy of culturally relevant practical instruction in science. Teachers in this study were a part of an educational initiative in the local university that provided instruction to these professionals related to bridging the decontextualised learning of the classroom to the relevant components of everyday life. Many of the strategies used hands-on activities, and there were benefits related to increased meaning for the students and better teacher relationships with the community. Challenges included teacher awkwardness with the new strategies and concerns with not meeting the expectations of peripheral stakeholders in regard to student curricular progress. The teacher concerns were often related to uneasiness with changing traditional modes of instruction.

The lack of teacher education is exacerbated because the principals in this region feel disempowered in regard to the ability to make personnel decisions or improve on existing circumstances. Teachers are often placed in school by a central church administrator or government agency; therefore, there are campus leaders who feel that there is little that can be done to address an ineffective teacher. If professional development activities and conferences are not effective, termination or nonrenewal is not an option. This means that a principal with a full teaching load must find time to provide job-embedded professional development. This

challenge places an emphasis on consistent communication, modelling, and short walk-through visits that can be used as a foundation for teacher development.

Method

Action research is a common form of inquiry among practitioners wanting to know more about the current status related to a specific topic within one's group or organisation. McNiff and Whitehead (2011) define action research as a "form of enquiry that enables practitioners in every job and walk of life to investigate and evaluate their work" (p. 7). This evaluation may lead to an improved understanding of the participants and/or organisation, and may provide the foundation for influencing others. Since action research is localised there is no expectation of generalisation of data. Practitioners use the increased knowledge about the problem studied in order to provide the foundation for more focused improvement (Coghlan & Brannick, 2010).

Data was collected through a convenience sampling of Toledo principals (n=29) who had five or more years' experience as a principal during a workshop in August 2012 that addressed instructional leadership as related to active student engagement. The researchers had provided training for these principal 12 times during the previous four years, so there was familiarity among participants, and surveys were often used to determine current states and needs within the local education system. This particular survey was designed to provide data for future topics that may be needed to increase student engagement in this particular region of Central America. In this instance, student engagement was considered as hands-on, active engagement in meaningful learning activity.

Surveys have been used regularly in determining perceptions among a group of subjects. It is the most widely used method of data collection in the social sciences (Neuman, 2000), in part because of its ease of use. This survey had a total of five questions in two parts. The questions were piloted through researcher reflection on previous involvement with the respondents. One section provided fixed response options for the principal to answer regarding the prevalence of hands-on learning lessons taught by their teachers, and the second part solicited open-ended responses. The two questions that provided fixed response options were as follows: (1) *What is the average percentage of time students participate in 'hands-on' activities in your teachers' classrooms?* and (2) *What is the biggest obstacle to getting students involved in 'hands-on' activities?* The open-ended questions included the following: (3) *How much training have the teachers had on 'hands-on' activities?* (4) *What concerns do you have regarding increased use of 'hands-on' or project-based activities?* and (5) *What benefits do you recognise that 'hands-on' or project-based activities can provide?* The principals provided responses and these were disaggregated to determine themes, and these were often presented along with quantitative data. This created a description of the themes and reflects general characteristics of action research. Gay and Airasian (2000) stated "action research utilizes all the forms of inquiry that can be used to examine, critique, and

understand a researcher's practice. Both quantitative and qualitative approaches are useful" (pp. 596-597). The researchers in this study found value in both methods.

Results

The results of this study were derived from a survey given to principals (n=29) in a region of Belize, Central America during a workshop in August 2012. The purpose of the survey was to determine the current state of hands-on student engagement in the region and readiness for increasing this method of instruction. The results were as follows.

(1) *What is the average percentage of time students participate in 'hands-on' activities in your teachers' classrooms?*

This question was to determine the current state of hands-on engagement in the classes as perceived by the principals. Most of the respondents (20) answered that less than 40% of the classroom time has any hands-on activity, with the most frequent answer being between 6% and 20%. Nine of the principals stated that more than 40% of classroom time was spent on hands-on activities.

(2) *What is the biggest obstacle to getting students involved in 'hands on' activities?*

The biggest obstacle to the utilisation of teaching methods that are hands-on was perceived to be a lack of resources by the principals. This option, chosen by 19 principals, was due in part to the general problem with lack of supplies in the area, suggesting that any active student involvement must utilise common materials. In other reasons checked, principals perceived that the lack of teacher training was a major obstacle 52% of the time. Sixteen principals said that having multiple grades each class hindered active student involvement.

(3) *How much training have the teachers had on 'hands-on' activities?*

This open-ended question had a variety of responses, from a significant amount of training to very little. The principals who believed the training was adequate made responses similar to this one: "Perhaps I want to believe about 80% training. Most provided by TFAB [sic] and ministry." This related to a long history of workshops between the non-governmental organisation Teachers for a Better Belize (TFABB) and the local ministry of education. Five of the principals mentioned TFABB directly as the main source of teacher training in hands-on activities. Workshops with TFABB are usually limited to once a year and have occurred for over a decade, and this long relationship has been perceived as valuable to the region.

The responses to this question suggests that ten of the principals felt there was enough 'hands-on' training of teachers to have an impact in the classroom. Many of the principals used a percentage, such as the previous quotation related to "80% training", but others offered statements such as "quite a bit of training as most teachers are qualified", or "enough to have meaningful lesson."

The bulk of the responses (19) did not believe that teacher training in 'hands-on' methods was adequate. Many respondents simply said "very limited" or "very little", although one comment stated, "well on most training most of my teachers have little training but they still trying [sic] to do their best in having students engaged." As stated previously, TFABB was mentioned often with comments like "only in TFABB workshops" and "every TFABB workshop annually". One comment discussed an early effort of TFABB to assist in the development of teachers: "I can recall that most of my teachers had limited hands-on activities. The last time we had hands-on activity session was at [a previous] workshop, about 6-7 years ago."

(4) *What concerns do you have regarding the increased use of 'hands-on', or project-based activities?*

This question was designed to identify the fundamental concerns of principals regarding more active engagement activities. Resources, as expected in a country that has little money for schools, were a top concern with 13 of the respondents mentioning this challenge. An example of this is a principal who stated "I'm concerned that we had [sic] limited resources and limited amount of time". Another participant wrote, "Is it affordable? Need resources suggesting different hands-on activities (teacher references)", while one commented "it may become too expensive for parents and teachers". These comments alluded to concerns with sustainability of hands-on curricular activities.

The next highest response was a concern that active student engagement was not used enough, thus decreasing the effectiveness of the classroom. Seven of the respondents wrote comments regarding the positive effect of hands-on activities in the classroom. For example, one principal wrote, "Well I do believe it is a very good idea to improve "hands-on" activities to increase students [sic] environment". The following comment was a representative of this theme: "High concerns since that's how students learn better. Students learn when they do rather than just observing".

Issues of safety and connectedness to the curriculum were expressed as a theme in five of the responses. Safety comments included "some students uncooperative – need to choose materials less dangerous to students", or simply, "more supervision". This concern suggests an underlying problem of classroom management in some schools. Regarding connectedness to the curriculum, principal comments included, "Teachers should ensure that hands on projects or activities are relevant [sic] to the topics in the curriculum" and "Must be well research/coordinated [sic] and follow sequence with curriculum stand". Included in this theme was a concern with parents' and curricular expectations: "Parents want to see exercise books filled with notes. They are not ready to accept "a report" from children but nothing in their exercise book". A final curricular concern related to the adaptation of students, written as "students will not be able to transform theoretical knowledge into practical use."

(5) *What benefits do you recognise that 'hands-on', or project-based, activities can provide?*

This question was to determine whether principals found hands-on activities to be important for student learning. The responses were all positive with two major themes emerging. Twenty five of the respondents described deeper learning as an important result of this type of instruction. One principal wrote, "Once connected to curriculum or have a purpose, it becomes extremely engaging and meaningful. Students learn or even discover new things on their own." Another comment reported that "experience/experiments help students learn faster, they also remember solutions for a long time", and still another commented, "helps chn [children] learn faster and quicker, and have better understanding of the lesson".

The second major theme related to an increase in motivation, sometimes described as a decrease in discipline problems. Examples of these types of responses included "students will understand the concept. Students can prove their talents and build up self-concept/esteem. Students will be more engaged and lesser [sic] misconduct to deal with". Comments more clearly related to motivation included, "increase knowledge, fun way of learning", and "it will build students curiosity". The subthemes of curiosity and additional meaning were common motivational descriptions.

Discussion

Since John Dewey (1916) first suggested that students learn by doing, educators have advocated for more student engagement. Entire pedagogical methods of instruction have been developed on this premise. Recently, increasing active student engagement has become a focal point in classrooms throughout the world. Moving teachers toward this form of active student engagement can be difficult, both because it does not meet the traditional organisation of students in rows, and similarly, it may require a different set of procedures for effective classroom management and safety.

Belizean classrooms are beginning to feel the pressure to move toward a more hands-on methodology. A recent European grant has resulted in math skills being taught with more manipulatives, and general educational movements are challenging the efficacy of many traditional methodologies (Schlechty, 2012). Change is often slow, but recognition of the need for educational change has begun in many places. The data from this research suggests the respondents believe that hands-on and other active student engagement strategies have value. Most of these principals believe such strategies create an environment that promotes deeper, more meaningful learning, and as a result, improves student behaviour. Beliefs that are supported by the literature.

This is not to suggest that the respondents did not have concerns. Training of teachers in the region is of primary importance. Developing a new initiative without addressing the educational needs of those who work with the students on a daily basis would likely result in ineffectiveness and frustration. The education

department in the area would need to commit to increasing teacher training in active student engagement methodologies and develop a professional development plan that supported it. This may be the most important concern to address, but it is not the only one.

Respondents were also concerned with safety issues related to having students actively engaged. There are definitely more safety risks compared with traditional methods, but the professional development of teachers could provide strategies for keeping these to a minimum. Resources are limited, so some financial assistance in providing basic safety equipment must be found.

Safety equipment is not the only resource required to make this work. Hands-on suggests something that the student manipulates, creates, and develops, and often these are consumables. In a developing country that has limited resources of any type, this is a serious consideration. One solution is to take advantage of the many international partners that assist with projects in the region. This would require on-going communication to help provide what was needed, and since some of the assistance is short term, this can be difficult. However, groups that wish to help should already be engaged in asking what is actually needed. A greater focus on these hands-on educational needs could be beneficial in forcing partners to communicate more effectively.

The other way to handle the resource challenge is to have teachers use what is available naturally. This region has abundant natural resources within the rain forest, and villages exist because of their ability to adapt. Workshops that focus on innovative ways to use nature for the hands-on experiences would be providing lessons that are not dependent upon international partners, and it would result in an increase in meaning.

There are clearly challenges to any change, and active student engagement continues to be a difficult transition for many teachers globally. The potential success of this initiative depends upon the commitment of the practitioners in the region and continued training that provides educational support, resources, and strategies for using local material will help the process.

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