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Support of Scientific Inquiry in the General Classroom Setting

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I fully support scientific inquiry in the classroom setting based on my experience as a preschool, first grade, and second grade general education teacher. My belief is supported by my professional opinion, knowledge of the Common Core Standards, as well as peer reviewed research from *Inquiring to Inquiry Learning and Teaching in Science, Scaffolding* and *Achievement in Problem Based and Inquiry Learning: A Response to Kirshner, Sweller, and Clark.* I also have opinions on *Why Minimal Guidance Does not Work: An Analysis of Failure of Constructivist, Discovery, Problem-Based, Experiential, and Inquiry Based Teaching* would disagree with inquiry based learning in the general education setting. This is why I personally believe inquiry learning has it's place to engage students with scientific content.

All of my professional experience has been at the elementary level. Young students use inquiry across all subjects math, reading, science, social studies, and social employability skills. From the Tedtalk video shared, as he described his students and his children's natural ability to ask questions as they learn and explore. It's also incorporated into our learning standards. In the Iowa Core standards, students are expected to ask and answer questions through text-text, text-self, and text-world connections they have seen or experienced. Standards are designed for students to build upon prior knowledge to deepen their understanding. The Common Core standards want students to be able to: explain, identify, compare and contrast, research, determine, clarify, and demonstrate understanding. To me, all of these are asking students to use their natural curiosity and skills of inquiry!

I related to the article, *Inquiring into Inquiry* the most when he described our goal as educators isn't to push information into students head, just so they can remember, but to engage them to collaborate and apply their skills toward their future endeveors (Alberts 3). I liked how this article described that it isn't just about learning content, but also the structure of scientific

inquiry and what that process alone can do for students. Students should be able to conceptualize a problem before they know the outcome and process possible solutions. I thought it was interesting how Alberst reflected back on his own educational experience and remembered inquiry based assignments he had completed in his past. As an educator, that's exactly what I want for students. Alberts then goes on to describe motivation. I feel that his description of motivation encompasses a student centered classroom in which students have the freedom to engage, explore, and collaborate. It makes me think about how much work as a teacher we put into setting the expectations for students so that they are able to collaborate effectively with one another. As well as establishing a classroom culture trusting enough for students to wrestle with inquiry. In order to motivate students to work inquiry based, routines and procedures need to be set and practiced so that this type of learning can take place (Bybee 27).

The rest of the chapters go on to describe what inquiry learning looks like and sounds like in the classroom setting. Noisy-messy yet students are engaged and working. It doesn't align with a traditional teaching model where the teacher is relaying all the information as well as manipulating the materials. I was really interested in the chapter on Teaching Inquiry Based Learning to Students with Disabilities. I love how this chapter described the importance of inclusion, small group work, and hands on learning being beneficial for all students. Students with physical disabilities getting modifications in order to experiment, those with learning disabilities getting extended time to complete assignments. Research supports students with disabilities engaging in inquiry based learning showed greater academic achievement versus those who received a traditional model (McGinnis 429).

The last article I dived into was *Why Minimal Guidance During Instruction Does Not Work: An Analysis of the Failure of Contructivist, Discovery, Problem-Based, Experiential, and*

Inquiry Based Teaching because I was interested in seeing what research did not support inquiry-based instruction. To me, it's hard to imagine why it's not an effective classroom strategy so I was interested in learning more. I was immediately shocked as I read on by how much I agreed with this article. Novice learners need a structure designed to deliver content information so that they can then apply those skills into inquiry based instruction (Kirschner, Sweller, Clark 76). Without adequate content, learners cannot be successful as they dive deaper. It reminds me so much about my own classroom setting in how I deliver structure, content, and accountability to early learners. A lot of what is taught in first grade is the basic math and learning to read and so much of it is guided. However, it has to be so that early learners can lay the foundation to their education.

I was a bit disappointed as I read on and realized how much I guide for my students, I thought I was more student based than what I really am. When the article stated, "...noted that when students learn science in classrooms with pure-discovery methods and minimal feedback, they often become lost and frustrated, and their confusion can lead to misconceptions" (Kirschner, Sweller, Clark 79). Provided me with the reassurance that I needed. Students need direct instruction on content and through assessment strategies will teachers be able to know that students are ready to dive deeper into the content and take on an inquiry based approach. From what I read and understood direct instruction on content can then lead to mastery. Once students have mastered the content they can then take their skills and apply them to a scientific inquiry (Kirschner, Sweller, Clark).

From these articles, I still stand in support of inquiry based learning if students have a mastery of the content. My position as an elementary teacher is that laying the foundation of learning through direct instruction can ultimately lead to students diving deeper into the content.

In first grade, students will be unable to apply inquiry based learning into their reading, writing, or math skills. I do however feel that there is a place for inquiry learning in science in first grade. Students are currently exploring sound and light through Foss Learning. I have see students explore a scientific phenomenon through asking questions and manipulating tools. Using their natural curiosity, I am excited to try more inquiry based learning with students.

Works Cited:

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