Language Arts in Mathematics and the Common Core

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Abstract

The purpose of this research is to discover and better understand the sometimes hard to find elements of language arts in Mathematics. Specifically, this research is intended to dissect the Common Core standards and content, and find how Language Arts are incorporated into mathematics differently than the previous standards. Some questions this research hopes to answer include: What changes does the Common Core bring with respect to language arts in Mathematics? How do these changes affect English Language Learners? Another aspect that will be discussed is the possible repercussions and implications that the new common core will have on mathematics with respect to incorporating language arts into the curriculum, along with why it is imperative for this incorporation. This research discusses useful strategies used to implement language arts in Mathematics with respect to The Common Core.

**Introduction**

The first step in understanding language arts and its application is understanding exactly what language arts entails. The realm of language arts involves many complex aspects and facts that can be difficult to understand. For that reason, a definition of language arts should first be established so that we may have a common understanding for the goal of this research. Put simply, language arts is the area of the curriculum where students are taught a variety of skills needed to become an expert in using the desired language, in this case English. Language arts generally refer to proficiency in reading and as the student’s progress they begin to incorporate oral skills and the ability to publically, and formally, present information.

Mathematics is an interesting area when it comes to language arts because the two subjects are generally regarded as opposites when it comes to academics. Historically, we have separated math and language arts because we believed that there was no room for overlap between these two areas of study. It has been thought that they were too opposite to incorporate both into the same curriculum, but now we are beginning to understand the importance of language arts in every subject. We now understand that there is a certain aspect of literacy that can, and should be taught at all levels and in every subject area. In mathematics, math literacy is the key to better understanding math, mathematical concepts, and abstract thinking. Language arts can be improved in mathematics through vocabulary expansion, journaling experience, word association through experiment, and through a variety of other ways-using mathematics. By increasing math literacy, we hope to increase the student’s English Language literacy, and vice versa, by increasing language literacy, we hope to assist students in understanding mathematics, one of the more difficult subjects. Now we are able to see the importance of incorporating language arts into all subjects, more specifically, mathematics.

**Language Arts in Common Core**

With the new common core hovering over our heads many questions are being asked pertaining to the content of the curriculum. One of these questions is, “How will the common core incorporate Language Arts, specifically into mathematics more so than the previous standards?” In order to fully answer this question we need to first discover where we currently are when it comes to Language Arts in the classroom. This answer is somewhat subjective, but I think an agreement can be made that today’s education system has tried many different ploys trying to promote language arts in school, such as, No Child Left Behind, Federal Title I part A program, PROP 227, etc. We, as a society, have tried many different strategies to promote and raise the level of language arts in the education system as a whole. I think it is fair to say that we are not doing a good enough job of this in our math classrooms, let alone in our entire education system. According to the U.S. department of Education (2014), disadvantaged students in the first grade have a vocabulary that is approximately half that of an advantaged student, meanwhile 60 percent of America’s prison inmates are illiterate, and 85% of all juvenile offenders have reading disabilities. Also since 1983, more than 10 million Americans have reached the 12th grade without having learned to read at a basic level, while more than 6 million Americans dropped out of high school altogether. The answer is clear; there is an important issue when it comes to how we are teaching language arts in the classroom and because of this, we are failing future generations when it comes to their education.

**Common Core the Answer?**

With how bad our statistics are it would be hard to imagine things getting any worse. It is obvious that a change is needed, and needed now. Is the Common Core the answer for our struggling nation? To answer this we need to know what changes the Common Core is presenting and how those changes integrate language arts with respect to mathematics. According to Berger (2013), the Common Core is “urging English language arts teachers to assume responsibility for teaching technical reading, along with literature, poetry, and composition.” The Common Core is also encouraging language arts and math teachers to collaborate in order to “teach mathematical reading and writing.” The Common Core acknowledges that there is a difference between mathematical literacy and language arts literacy, it is calling for practice and specialized support in each facet. Realizing the difference between the two types of literacy is a great step for our educational system, and may be just what we need as a country.

Answering our previous question, is the Common Core the answer for our struggling nation? I think the fair answer is it is a step in the right direction. Jago and Schmoker (2013) state that the “Common Core State Standards could have a transformational effect on American education” (p.1). In theory, the California Common Core State Standards should greatly help our education system and more importantly our language arts system, by emphasizing not just content but application in the real world through language arts. But the only way we will know if the Common Core will bring us out of our tailspin is to apply it to our classrooms, and see how successful it truly is.

**Application**

So, how do we apply the Common Core to our classrooms while prompting language arts? According to Berger (2013), the first step we need to take is to realize that teaching language arts is not solely the responsibility of the English teacher; it is the school’s responsibility and more commonly, the nation’s responsibility. Therefore, all teachers should actively participate in molding students literacy needs in each specific content area. It is imperative for teachers to remember that they are first and foremost educators of all knowledge, and their area of specialty is the means through which they teach all knowledge. How do I as a math teacher do my part in teaching language arts, and what are some successful techniques I can use in order to fully incorporate language arts into my math classroom? Jago and Schmoker (2013) claim best way to apply Common Core is through, “Building knowledge through content-rich nonfiction and informational texts, reading and writing grounded in evidence from text, and regular practice with complex text and its academic vocabulary”(p. 2). With respect to mathematics this entails regular practice with math vocabulary, written and oral rationalization of application, abstract use of knowledge, and through open-ended experiments, investigations, and rich texts. Jago and Schmoker, also state that, “Instead of attempting to create a curriculum that ‘covers’ the bewildering array of discrete standards in the Common Core, start instead with a careful review and discussion of the three shifts listed above”(p.3). This means that in order to successfully apply the Common Core to any and every subject matter, we must first understand that we do not have to cover every little detail. Our previous downfall was being too broad and failing to actually retain any information being taught. Common Core brings a new emphasis on Language Arts, and with that emphasis comes a new responsibility for teachers of all content areas, including math, to integrate the language arts into their subject area. The Common Core should be used to understand and develop the literacy needs of students.

**Implications**

There is no doubt that the Common Core Standards will be some sort of impact, given the new emphasis on language arts that it holds. If the Common Core is successfully implemented and the schools are delivering quality education, then there is a major opportunity for the Common Core to have a transformational effect on the way we educate our students. Obviously, this has many factors, but the tools are there for us to be successful in our education system, we have been given a new start and direction for a new path, towards a complete national literacy, specifically in mathematics. With the new start students will have better understanding of mathematical literacy, meaning that they will be more inclined to understand not only content but more importantly application, which is where we greatly struggle currently. The key for us, as a nation, is to simply raise literacy in our students. This alone will have great effects, rendering the general population to higher educational standards. Increased literacy and language acquisition will eventually prompt a new generation of a higher educated population. Through better-educated students, our secondary education will flourish and our parents will be well suited to teach their children the importance and need for literacy in each and every household. As for not following through with the Common Core, we have seen the road that inadequate education leads to. We, as a country, have decided that it is not the road that we want to venture down any further. If we fail as educators, parents, administrators, and even students, then we decide to continue down the path of illiteracy.

**Conclusion**

With the Common Core comes a new opportunity to educate the minds of students in a way that we have never fully applied before. The Common Core brings us an opportunity to greatly affect the educational status of our country. More importantly, the Common Core brings us a new duty to educate, administer, teach, parent, and primarily learn. As an educator I am privileged with the task of teaching children and focusing on our new national goal of raising literacy. The Common Core defines a long needed understanding of literacy and language: a higher standard. This emphasis is not just for the English or Language teacher, this emphasis is for the whole school, each and every classroom, including mathematics. Literacy is the key for a successful future and the Common Core is the way that we have decided to pursue that goal. In order to obtain it we must dedicate ourselves not to the curriculum, not to the Common Core, but to the needs of our students. Dr. Ben Carson states it perfectly when he says,

“Reading activates and exercises the mind. Reading forces the mind to discriminate. From the beginning, readers have to recognize letters printed on the page, make them into words, the words into sentences, and the sentences into concepts. Reading pushes us to use our imagination and makes us more creatively inclined. If we commit ourselves to reading thus increasing our knowledge, only God limits how far we can go in this world” (Carson and Murphy, 1992, p.152).

Literacy is key. It is essential for us as a society to understand the Common Core, recognize how to apply it to our learning, regardless of content area, and to capitalize on the opportunity it offers to better teach, to grow, and to learn.

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