Modality of Instruction: Auditory, Visual, Tactile, and Textual Strategies

Every student, whether at elementary, commencement, collegiate or graduate level has varying educational needs and strategies to learn and retain information. The way in which those students learn best is considered to be their modality, which can vary from auditory or listening strategies to visual learners who learn best from drawings, charts, sketches, etc. Sloan et al. states that learning styles are chosen when there is a correlation between perceiving and processing pieces of information which results in the acquirement of knowledge (2004).

While there are a wide variety of how-to-articles and book reviews relating to the practice of teaching to cater to students favored modalities, very little quantitative or qualitative research has been done to determine which teaching strategy best fits the needs of students. This is most likely because every student is different and modality choices are often a matter of opinion, not fact. The few studies done found on differentiating modalities will be discussed here to try to answer the following question: What are the differences in elementary student’s learning styles?

The findings of the five articles have been sorted into four themes that were emergent: (a) in favor of auditory modalities; (b) claims that visual modality is the most effective for students; (c) in support of using multiple modalities to cater to student needs; and (d) two of the five articles also posed the question of teaching towards non-modality matching. Recommendations towards non-modality teaching were given by Sloan, et al., so that students are prepared when something is taught outside of their
favored learning style (2004). These four themes from five articles pertaining to modality will be analyzed, discussed, compared and contrasted in the following pages.

Auditory Modality and High Performance

Students that favor auditory learning internalize information best when it is heard or told to them. A study done by Conway and Christiansen (2005) showed strong evidence to support the suggestion that students learn best through auditory strategies, concentrating on statistical learning and retention. While modality refers to ones senses, Conway and Christiansen also suggest that tactile learning or engaging in the touching sensory is often ignored when studying modality strategies (2005). Subsequently, the other studies found during this research did in fact ignore tactile modalities.

The study was separated into tactile, visual, and auditory experiments, in which the participant was asked to answer questions based on vibrations on their hands, patterns shown in visual sequences, and pitch sequences. The second half of the experiment combined modalities using the same hypothesis and strategies. Conway and Christiansen’s results concluded that auditory learning was overwhelmingly superior to that of the other modalities in several instances (2005). The study also changed the constraints of the auditory experiment to rule out small errors, but ultimately received the same results. Students were able to identify with auditory learning for statistical information. (Conway and Christiansen, 2005).

Visual Modality and High Performance
Two of the articles in my research favored visual modality as the best means for students to retain information. A study done by Newcomer and Goodman was separated into two sections, the learning of meaningful material and the retention of nonmeaningful materials. Based on a series of 18 modality tests, 167 students in the study were labeled high auditory or low auditory as well as high visual or low visual (2001). Newcomer and Goodman were able to conclude that the fourth graders in their findings learned from visual materials such as graphs and drawings with a higher efficiency than auditory materials (2001). However, they also hypothesized that there was a possibility of such high visual scores because of low individual schema of auditory associations. (Newcomer and Goodman, 2001) The final hypothesis was not tested in this study.

Another study suggesting that individuals more frequently use visual modalities was conducted by Berger and Donnadiue (2006). Their study explored the ways in which children and adults categorize objects based on their own schemes and modality preferences. In both experiments 2 and 3, children and adults both responded to the schema category visually, where auditory stimuli was not always utilized. (Berger and Donnadiue, 2006). They then went on to suggest the hypothesis that the lack of usage of the auditory stimuli could be due to lack of experience, but was not tested in this particular study. (Berger and Donnadiue, 2006).

Multiple Modality Usage and High Performance

There are several studies that suggest that combining modalities such as visual and textual, or auditory and textual, will give students a greater opportunity to process the information presented. Beyond substantial research, there are is a large number of how-to
articles and book reviews instructing educators to teach material in a variety of ways to meet the needs of every student in their classroom. Ginns hypothesized that when educators taught combining modalities rather than only teaching to cater towards visual modalities that students would process the material more efficiently. He also hypothesized that the efficiency of that processing would be dependent on the amount of interactivity with that material (2006). After testing a wide range of students and material he concluded that students who did use a range of material from different modalities outperformed those who used only one modality, supporting the first two of his hypotheses.

Non-modality Matching

Two of the studies found suggested teaching in a way that does not match students with their preferred modality, and for several reasons. Sloan et al. suggests that catering to students modalities hinders their academic performance, that as teachers we are doing them a disservice when doing so (2004). The study states that when we do modify the way we teach material for each student, they will later in life be unprepared when things are presented to them in a way other than their preferred method. Sloan also suggests that we as teachers are already engaging in modality teaching each day simply because we use all 5 of our senses regardless (2004).

Newcomer and Goodman also raise important issues towards non-modality matching, including the gaps in testing to determine which modality each child truly learns best by (2001). They suggest that matching instruction which each child’s modality, in order to be most effective, is an extremely large task as educators
(Newcomer and Goodman, 2001). Perhaps the question should then be raised that if we as teachers spend a small portion of time catering to twenty visual learners and a large amount of time instructing towards an auditory learner, are truly doing what’s best for every student?

Summary

In this literature review an attempt was made to answer the question: What are the differences in elementary student’s learning styles? Clearly each student no matter what grade level has a preferred ways of instruction. These differences are perceived to be the way they process information, or their modality. Modalities cater to one’s senses, and making a connection between perceiving and processing information. Because of the lack of quantitative and even qualitative substantial research, the question may have not been truly answered. Perhaps the real question should be: Does teaching to cater to modalities help student performance? Even when that question is raised, there then seems to be a lack of testing to find which modality each child uses efficiently, only raising more questions that ultimately could be researched.

Based on the studies found, there does seem to be a general consensus to teach utilizing multiple modalities and prepare lessons accordingly, whether they are visual, auditory, textual, or tactile. When this occurs, it allows for each student to retain information using their preferred modality. That should be, of course, the ultimate goal of teaching: to reach each student in a way that will most benefit their education.

References:


