

Improving Student Success Through Matching Learning and Teaching Styles

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ABSTRACT

This action research study was implemented to determine if conflicts between teaching and learning styles could eliminate student's misunderstandings and create a learning atmosphere for many students who normally struggle in formal learning environments. Its purpose was to create awareness among teachers and students of the conflicts that can and will arise in the classroom, affecting the learning process and the students' view on education.

The writer provided assessment instruments, the TSA for teachers and the LSA for students, supplied from Creative Learning Center in Auckland, New Zealand. Preferences and non-preferences were discovered and a manual was provided to interpret the results for teachers to review and make the necessary changes to accommodate LS in the classroom. Analysis of the data indicated that changes needed to be made in the classroom to meet the needs of the students. Teachers making the changes in their teaching style reported a significant change in classroom management, participation and higher grades overall.

PROBLEM STATEMENT

The problem was that many times students struggled in school because a teachers teaching style conflicted with the students learning style. This was a problem because many children did not understand this and did not know why they were doing poorly in a particular class. The individual style of students was accommodated within the classroom as much as possible to alleviate any stress that a child felt. Each LS was thoughtfully considered and evaluated if it enhanced or hindered the learning process. Information was presented to each student and every time more was discovered about how the student learned.

PURPOSE

The purpose of this study was to determine if a correlation existed between student learning styles and the teaching style of a teacher. The measure of correlation between these factors was to see improvement in student grades and standardized testing scores. The writer noticed students did well in one class and were failing in another, although they had the same potential or ability in both classes. According to DePorter it is "probably a conflict between the student's preferred learning modality and the teacher's teaching style" (1992, p.120).

This study focused on whether or not the teaching style of the teacher affected each student's ability to learn, depending on the student's personal learning style. A group of 276 students from Jefferson Academy High School (JA) was given a learning analysis (LSA-Senior) and twenty teachers from the school were given a teaching analysis (TSA-Education), as it was believed that how an individual learns was the most comfortable way for that individual to teach. "Research supports the concept that most teachers teach the way they learn" (Stitt-Gohdes, 2001, p.137).

The writer's role at the school was a teacher of computer science classes of middle and high school students, for the school year 2003-04. The writer was a member of the student study team and was able to identify many LS from experience with working with a learning style specialist and being the gifted and talented coordinator in previous working experiences. Due to JA envisioning a community of parents, teachers, students and educational and business leaders, working together to create a learning environment that engenders growth in character, academic achievement, and the love of learning, resulting in responsible, productive citizens, the writer knew the analysis would be accepted and appreciated. Public charter schools are mission-led schools with a specific emphasis that are open to changes as long as it benefits the child.

Each teacher in the 7-12 population took the TSA-Ed via the Internet through Creative Learning Systems revealing how the teacher prefers to teach or the teaching style (TS) readily used when presenting. Then the LSA-Senior instrument was given to each student on-line and the learning style was discussed with each, so a better understanding of how students learn would become a part of the education offered. A few selected students' grades were evaluated to see if they are performing well or if they were struggling in any classroom. The teachers' TS was then evaluated to see if it was matching students' individual learning needs.

PROBLEM DESCRIPTION

The problem was that many times a student struggles in school because a teacher's TS conflicts with the student's LS. Due to the many learning style combinations found in our students and the miscommunication that occurs during information delivery, teachers have to re-teach a topic because information delivery conflicts with how students received and processed the information.

Although every human being has a specific LS, teachers often believe the way they learned in school is the best way to teach because of good results previously experienced, and feel that students should have the same positive outcome. However, research did show that the teaching and learning style of a teacher often did not match the LS needs of students. This led to under-achievement in students. The physical learning environment (like lighting levels, seating, furniture arrangement, temperature, etc.) and emotional environment were essential factors in a child's day, which was upset by situations such as conversations cut short in between classes, an overcrowded classroom, unreasonable rules, or impossible deadlines. All of these caused a threatened feeling and significantly reduced a child's ability to perform.

Acquisition or excessive attentional demands on a student created a resentful learner. An example of this might be the traditional teaching method of stand-and-deliver, which had a goal to get and keep students' attention. Many times when a student was asked a question and the teacher got a blank look, it was only a temporary synaptic dis-connection, which was corrected with elaboration. Many teachers still use the old paradigm for feedback, in which the teacher was the only source. For students, learning information created a memory trace, but it was usually not enough to activate the information at test time, which makes it essential that assessment matches the memory mechanism, and the neural pathways used to acquire knowledge (Jensen, 2003). This problem was not addressed due to the lack of knowledge concerning neuroscience and its effects in improving education. Quite often, many teachers felt that a student's low scores and grades were due to being lazy or not motivated for learning.

Problem Documentation

Jefferson Academy enrolled many students from the Jefferson County School District who were interested in attaining a high academic and character potential through an academically rigorous, content-rich educational program. Where the problem lied was with the students who enroll that were simply looking for an alternative school situation due to an unsuccessful experience in the traditional classroom.

According to the Colorado Standards Assessment (CSAP), Jefferson Academy was performing relatively well in comparison to other schools in the district. However, the writer identified students that were slipping through the cracks; a number of students were resentful learners and many students were not performing to a higher potential. The 2003 CSAP scores for JA indicated students would benefit from a teaching method being compatible with their learning style. As an example, the scores for the 7th and 9th grade were shown just to give the reader a view of the circumstances at JA High School. CSAP Scores for 7th grade math, reading and writing determined that an average of 32% was only partially proficient in all three areas out of 62 students. In the area of mathematics the 7th grade, students were 10% advanced 34% proficient and advanced, 26% proficient which leaves 30% that were struggling in this area.

Students respond to learning activities based on personal traits, which cause a mismatch between the student's LS, and a teacher's teaching method. This interfered with learning, raised the discomfort level and lowered the performance of affected students. Alternatively, when the learning styles of students were similar to that of the instructor, greater achievement and personal satisfaction was exhibited.

Matching students' LS with the appropriate TS always led to successful interaction between teachers and the student, and resulted in improved learning outcomes. Matching is a challenge, but a challenge worth striving for. The more closely schools match teaching to the way students' brains actually learn, the more likely it is to reach students and bring out the natural motivation to learn (Jensen, 2003).

Unfortunately this belief system conflicts with many principals, teachers and parents. The writer saw where teaching the same old way over and over and expecting the same results did not work, so agreed with B. Prashnig that every human being has a learning style regardless of IQ, achievement level or socio economic status, and never encountered "good" or "bad" learning styles.

Excessive attention demands on the student created a resentful learner. Teachers that provided only one source of feedback typically limited the students' ability to respond in a positive manner. Many teachers lacked knowledge regarding recent progress and techniques developed from neuroscience studies. Often new information from recent neuroscience findings is regarded as a fad instead of incorporating new techniques to benefit the curriculum. In addition, available tools to assist understanding of how a student learns was often disregarded. Learning styles is a complex construct for which a comprehensive understanding is slowly evolving.

Goals and Expectations

The goal of this study was to show a correlation between students' grades and the TS of the teacher. Students who were struggling because of a mismatch in learning and teaching style were identified. The expectation was to see an increase in students' grades after their LS and the teacher's TS had been identified. The information acquired from the analysis allowed each student to become an advocate for style diversity.

The writer expected to obtain valuable statistical data and insights into students' true learning needs (preferences and non-preferences in certain crucial areas like need for sound, light, mobility & intake; time of day preferences; sensory modalities and brain dominance).

The study revealed trends in teaching styles among the participating teachers (with areas and sub-elements of the TSA where teachers predominantly used traditional/analytic methods, showed a balanced use of analytic/holistic methods or showed marked imbalance in brain dominance factors).

Student preferences in certain areas (like classroom environment, mobility, intake etc) were compared with the TS of teachers in these areas, pointing out mismatches and comparing them with academic (under) performance of students.

Measurement of Outcomes

Pre and post running record scores were compared. The writer/researcher collected all the profiles for the students and teachers, computer processed the responses, generated individual and group profiles, analyzed and compared the results.

Information was given to all teachers to discuss the profiles acquired from the TSA. An interpretation manual was given discussing what each teacher needed to match every student learning needs in the classroom. Teachers were presented with and given information that could be used immediately. They were instructed to use the suggestions for the remainder of the school year, with the understanding that the students scores would be evaluated to see if any improvements had occurred.

Statement of Problem

Students who often struggle in school do so because a teacher's TA conflicted with the students LS. The key to a successful introduction of LS to a classroom was to look for extreme results (strong preferences and non-preferences); to sub group students with similar needs and implement whatever strategies can be used to accommodate different styles. By determining the LS of students did not necessarily mean that teachers needed to cater to everyone's individual needs, but any action taken to match teaching and learning styles benefited the learning process, particularly when teaching something new or difficult.

Several solutions were provided from the literature review by different authors. One, Eric Jensen, makes some key points when dealing effectively with mismatches in the classroom. He stresses that a teacher should not try to "fix" the student, as nothing is broken. That the students would actually appreciate and respect the alternative point of view, but

make sure that rules are followed the same for all. It is important to avoid labeling learners since preferences vary depending on stress levels or circumstances (Jensen, 1998).

For years, educators believed that students learned best when sitting upright at a table with lots of light and in perfectly quiet surroundings. A belief that students who are not able to sit still were not capable of learning and needed to be dismissed from the classroom to only return when ready to sit still and listen. Sounds familiar? Heaven forbid, a student coming to class with a snack, as that was not acceptable or tolerated either. Many fallacies existed then and now, but the intention of the writer was to prove these fallacies wrong.

The writer has seen students changed for the better by learning how to learn, by seeing a personal LSA printed out, like a map to success that was never offered before, even when struggling in school just to survive. Sometimes this first map would show hope or a light at the end of a dark tunnel, something every struggling student could use and appreciate. This information will guide the student into life long learning and a life of not feeling like a failure, which caused many students to give up on learning all together.

The LSA was helpful for many parents too, who have struggled with their children's learning, not knowing where to turn for help. The information regarding a child's learning style did help parents understand why a child was having difficulties in certain areas. Without this information, many parents take the disappointment over a child's underachievement and inflict anger that causes more frustration within the child. This made it harder to succeed as the feeling of being a failure took over and created more baggage that was difficult to dispose of. The writer has seen many a parent feel guilt, frustration and gratefulness over learning about the LS of a child who had been given up on. The analysis could also allow the parent to see (dis)similarities in their own LS compared to how the child learned best. Therefore, the analysis was capable of helping both the student and parent.

SOLUTIONS

Not all the students were comfortable with these innovative teaching methods based on LS, and not everybody was required to try everything. Those who had little self-confidence in learning or felt insecure needed time to adjust before participating in the experiment

To present new material to a mixed group of analytics and holistic, the content was holistically introduced with an anecdote and given as an overview. Then the holistics were allowed to learn in a team with open questions and then followed up with facts; while the analytics heard or read the facts first and then answered closed questions. Creative applications for both teams were used for a final experiment. Being flexible in one's thinking style meant that one could be either quick or reflective in the decision making process. The advantage was that one could then adjust one's thinking style to match the situation. Given the complexity of our western societies, it is almost necessary to be highly flexible in one's thinking style. Being strictly holistic or strictly analytic, only reflective or always spontaneous was not sufficient to cope with our fast-changing world.

Flexibility in the sensory areas (visual, auditory, tactile, kinesthetic) meant that the students could learn well through most, or all, of these senses if the topic or study content was found interesting and the other preferences were matched in a learning situation. Therefore the need for a 'multi-sensory' approach was recommended. Learning through one or two modalities only was not sufficient, and students easily switch off and lose interest. As long as the INTEREST and motivation was present, learning and remembering difficult concepts took place.

Particularly during teenage years, preferences in the social area change as students become more independent from parents and teachers. Be aware of such changes and support students (and parents) in a positive way. However, some students did develop a strong non-preference for authority, which meant the student might become a rebel and/or a discipline problem. This can be seen in the combination of the attitudes: non-conformity with low responsibility and low or fluctuating persistence. Results in these learned (non-biological) areas will often change 'overnight', particularly in teenagers. Many will have question marks in the results that were usually a sign that a change was taking place. As attitudes are learned features, the change through the schooling years is often accompanied by confusion. Honest discussions and interpretation of the LSA results helped most of the time. In difficult cases, additional help of a person the student trusts was needed.

It was a good idea to involve pupils in creating the perfect learning environment. Teachers should explain why the changes occur and let students help design and implement quiet areas, relaxing, soft chairs or couches, darker corners for watching educational videos,

reading, writing, etc. Each learning style classroom at JA now has a comfortable area where students can learn informally on comfortable furniture or on the floor, but it is not advisable to remove all desks from a classroom, as a few students will always need to sit upright at a desk and others need to experience the difference between formal and informal seating.

RESULTS

Firstly, the writer expected to obtain valuable statistical data and insights into students' true learning needs (preferences and non-preferences in certain crucial areas like need for sound, light, mobility and intake; time of day preferences; sensory modalities and brain dominance). These expected outcomes were met and exceeded the goal as data obtained from the TSA and LSA for both teachers and students at JA High School. It provided many insights for both the teacher and the students to make the learning improve from both sides.

The LSA results allowed for the discovery of strengths in creating a classroom environment conducive to learning, management strategies, multi-sensory teaching methods and lesson planning techniques. In addition, it determined the overall Thinking Style, Professional Attitudes and Success Rate with each teacher. The tool helped to enhance professional skills and supported ongoing personal growth for those teachers that took the time to use the information and apply the results to the classroom.

Secondly, the writer expected to reveal trends in TS among participating teachers and although met with initial resistance, this goal was accomplished. The TSA provided information regarding whether the teacher used predominantly traditional/analytic methods or had a balance of analytic/holistic methods in the classroom. In addition, the TSA determined if the teacher had a marked imbalance in brain dominance factors.

Colorado Standards Assessment (CSAP) scores showed that an improvement was seen in the 7th and 9th grade from the scores from 2002-2003 to 2003-2004. Primarily, the only changes that were made were to follow the guidelines for lighting, intake, sound and temperature in classrooms. Other preferences were also implemented but in the short time that the research was conducted, these were the main changes that were put into action.

Discussion

Whether teachers like it or not, the fact is: the way you learn is the way you teach because we believe that what makes sense in our own brain must make sense to everyone else. This couldn't be farther from the truth as there are students whose learning style needs are totally different from the teacher' style and that is where the trouble begins. Many students learned from the LSA that the struggles in the classroom were not just there due to a personal learning style. Instead, they saw how some LS differed from some teachers' TS and once this information became known, it was much easier to understand and work through the problem that was holding back success in certain classrooms.

Overall, the research experience was a positive one. It was difficult though to get many of the changes implemented in the short time that was available, as school was being dismissed for the summer. The writer made as many accommodations as possible, even to the extent of not following all the school rules and even 'going against the stream' for the classroom set-up, only to discover that the students did participate and perform better.

RECOMMENDATIONS

The only recommendation would be to give others wanting to replicate this study to make it a whole school research and breaking the study into smaller sections over a longer period of time. By getting everyone involved and seeing the needs, all at the same time, would encourage more teachers to be open to implement changes. Make needs visible by discussing scores on standardized test available for certain students that are doing poorly in a class that should not be a problem. Many a time a child's scores implicate that better scores should be made in certain classes and the child is not working at the given potential due to a mismatch between learning and teaching styles.