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# Evaluating a Behaviorist and Constructivist Learning Theory for 21st Century Learners

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Critical Issues in Learning Theory

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## Abstract

Two educational theories have long been held in a strong debate as to which one has the greater impact on student learning. In one aspect, the behaviorist educational theory holds weight as a traditional guided learning model through which the teacher guides learning. Students are motivated extrinsically and stimuli are provided to promote learning. In another aspect, the constructivist education theory emerges in most current curriculum and instructional models. Constructivist theory asserts that discovery learning, and more self-directed goal setting are more beneficial to the twenty-first century global learner. Through examining research on both of these educational theories and providing practical solutions for instruction this paper aims to promote a blending of both theories for learners of this technological century.

## Introduction

In an exploration of the constructivist theory versus the behaviorist theory which one has more benefit to students of the 21st century? The political relevance in learning theory stems from common core standards which focus more on constructivist learning theory than behaviorist theory which has been a major focal point in education for some time. As an educator, the instructional and curricular mandates from core standards strike a personal chord as many of the prescribed units and curricular guides favor one learning theory. The freedom that educators have had to tweak and adjust guided instruction for learners becomes strained as federal mandates and standards regulate student learning. An examination and exploration of how exactly both theories contribute to core standards and learners of the 21st century are worth close analysis. Two critical issues in learning theory show in the behaviorist and constructivist theory as education moves toward a core standard focused on rigorous standards of science, technology, engineering, and math. Realizing that on one level students are by nature accustomed to behaviorist learning, a concept of an older teaching style versus an emerging style holds many prospects. The behaviorist view asserts that learners learn through positive or negative behaviors as well as supporting these behaviors with extrinsic motivators. The constructivist view asserts that learning constitutes more of a discovery learning aspect and aims students towards conceptual understanding. The concept of which theory is the best way to educate our students for the 21st century, a return to basics through the behaviorist and cognitive theory versus a curriculum strongly rooted in constructivist theory, are both worthy views. The critical issue going forward with common core seems to be how exactly we should educate students. Currently the focal point by educational leaders as well as many state officials support S.T.E.M. , testing, and raising standards. By challenging and pushing students educators must meet more direct

expectations from a national standpoint. The common core also revolves around real world experiences to allow students to discover learning in a real and tangible way unique for their lives. A constructivist learning theory worth analyzing explores whether or not more educators familiar with the traditional behaviorist theory may need more professional personal development or more testing to best serve the needs of the 21st century student. One issue worthy of discussion and worth posing examines whether or not the focus on one cognitive type of learning theory more neglects student's natural inclination towards discovery. There are substantial parts of constructivist- theory that seem embedded in national standards for common core, but at the cost of guiding students for creativity. When students seem to be pushed into science technology engineering and math programs, a special political agenda seems to exist. Often teachers who know their students best, believe we should best educate our learners. Currently a shift exists in students writing from a longer thorough analysis, towards a more instant, objectified right or wrong technical response. Learning under this new model designates a hit or miss component instead of a lifelong curiosity and appreciation for personal growth. The constructivist theory seeks to afford students the freedom to discover their own learning, while the behaviorists' theory seems to utilize more feedback, stimuli, and reinforcement.

#### Constructivist and Behaviorists Overview

Ultanir (2012) discusses the constructivist approach from Dewey indicating, "According to him, the history of the theory of education has been shaped by two opposing ideas. The first is that education is an internal development based on the student's natural talent. The opposing idea, on the other hand, argues that education is a process of external building, independent from talent or abilities." (p. 199). In Ultanir's discussion the view of constructivism as instructing learning is

coherent with many common core standards that aim to tap into student's natural talent. A big proponent of common core standards in ELA is to have students interact with a text and annotate or develop and construct meaning from an evidence based standpoint. However much of the first semester is spent analyzing and annotating as teachers model the process through guided learning. Many of the ideas of providing education as a process of external building relate to students developing their own views, and exploring their own capacities.

According to Volet and Wosnitza (2012), "In recent years, there has been growing support of the view that in any learning situation, individuals can pursue multiple goals at the same time, such as learning goals, social goals, well-being goals, and performance goals, and that these goals can be in harmony or conflict, and can evolve as the situation unfolds." (p. 514). In educational and learning theory there are different learning styles and different goals students work towards. Intrinsically speaking, many students under the constancy of testing are conditioned to believe that learning results in giving educational stakeholders what they want and then forgetting the information learned. The ability to realign the different learning goals such as social and performance goals may show a greater approach at branching learning from a behavior based theory to a constructivist theory.

Oakland (2012) indicates "Accommodation tends to be painful (Lewin, 1947) because parts of existing schemata and what the learner believes in must be broken down, transformed, and restructured with new elements to fit the new experience." (p. 122). This relates to the new concepts of common core and helps to explain how students must be scaffolded to embrace new concepts of the common core standards and learning. A gradual shift needs to occur from the behaviorist perspective to the constructivist perspective instead of an immediate change. Many students currently in high school are embracing new schemata and new learning styles while for

the past eight to ten years they matriculated under the guises of No Child Left Behind and guided learning. The ability to accommodate the concepts of common core are harder today for kids when they are not fitting the schema they are used to for the past several formative educational years. A new schema entirely related to real world application is the intent of common core but the execution must be appropriate and relative to learning theory students are already accustomed to in school. As brain functions increase and students become more cognizant of learning differences as both students and teachers don't guide but facilitate learning.

According to Ultanir (2012) "The situation in which individuals perceive, interpret, and explain the same object differently despite the sensation can be approached to the constructivist approach." (p. 196). Within this approach students may be asked to take an instructional task and view it in a multitude of sensory or learning perspectives. Additionally common core standard instructional practices that are focused around the constructivist theory models allow students to tap into different interactions with texts.

In terms of learning, perception, and educational retention many students learn through direct interaction and engagement. According to Torrance (2012), "More social constructivist approaches see knowledge and understanding as constructed through interaction, rather than transmitted through instruction, placing emphasis on the interaction of teacher and student, student and task, and indeed student and student." (p. 326). The ability to construct one's own learning shows promise and benefits as students may encounter scenarios and problems which they will have to solve themselves. However, a certain level of cognitive development and judgement requires social interaction with peers and other learners as well. In addition many students guide one another in collaborative efforts which also speaks to common core standards focus on collaboration.

## Research and Overall Summary:

According to Swiderski (2011), “Learning involves not only the building and rebuilding of mental structures as an individual interacts with the environment, but also the representation and storage of these structures in an individual’s mind such that, when needed, information can be easily retrieved.” (p. 240). A question can be made to ask how does a constructivist perspective within common core ask students to retrieve information? Many students retrieve information just to regurgitate it back on tests, but what learning theories under common core work towards inspiring lifelong learners? When students use behaviors to retrieve information to the degree that learning comprises memory tricks such as recall or mnemonics they utilize these on instructional and assessment practices.

Swiderski (2011) continues, “from formal academic environments to real-world situations, which should allow them to take advantage of what they know in everything they do.” (p. 243). This approach is embedded within the common core view of learning as having real world and big idea applications. However educational theories which help to guide student learning may provide practical approaches such as scaffolding. When students utilize discovery learning students experience a connection to real world situations in which their education connects to lifelong goals and relevancy. Volet and Wosnitza (2012) continue “students pursue multiple goals and that those goals are related to four main goal domains, those being future goals, achievement goals, social goals, and personal well-being goals.” (p. 515). In terms of socialization of students and achieving these four goals, a major focus seems to rotate around why and how students are developing both socially, and cognitively. Within constructivist theory achievement goals and social goals may constitute projects or assessments that ask students to create or discover new findings. Specifically from a scientific standpoint, science labs may

provide a direct correlation to achievement as students pose a hypothesis and develop their findings and learning in a final report. In regards to a behaviorist perspective goals may differ into more of a social capacity as group members both articulate their hypotheses and their findings from the experiments. Gangi and Reilly (2013) add, “The CCSS primarily focuses on children’s heads, not their hearts and minds. The word *analysis* appears 94 times in the CCSS; the word *feelings* eight times, the word *emotion* twice in a clinical sort of way, and the word *affect* not at all.” (p. 12) A constructivist view in combination with the CCSS aims to allow learners to guide their own learning, but with a constant focus on analysis students are being guided on how they are to analyze content. To some degree, students must form emotional engagement with certain texts in order for it to provide real world relevance to them. Behaviorist and constructivist theories both aim to guide learning as a real and relevant process, but assessment may afford us the opportunity to gauge how effective these theories are in regards to retaining learning.

Oakland (2012) asserts, “constructivism makes up an important theoretical ingredient in a variety of studies on learning, but we were not able to identify any studies including constructivism as a methodology in studying student learning outcome.”(p. 120).

Many of the assessments on common core relate to objective goals and standards, but the idea of these as an effective learning outcome begs discussion. Many of the performance tasks as well as assessments aim to get students prepared for the PARCC assessment. While traditional assessments ask students objective test questions and multiple choice questions they seem to address the behaviorist perspective. The PARCC asks students to use their discovery learning and construct responses related to the content they have learned. Unfortunately in regards to the

implementation and alignment of the constructivist theory the research needed to detail student learning still has not been proven or disproven yet.

Lastly Oakland (2012) states, “Learning content itself is not specified in constructive learning since the focus in this type of learning theories is on how learning evolves. But content makes up an implicit ingredient in that constructivism assumes that what is being experienced is being assimilated and accommodated in cognitive structures.”(p. 123) Another major component of the assessment and constructivist approach of common core aims to provide real world relevancy for students. Aligning curriculum and standards with real world skills helps to prepare students for future jobs in the fields of science, technology, engineering, and math. A substantial connection between the content and accommodation as well as content retention has to align with standards for global learners entering into the global workplace.

Oakland (2012) provides a unique perspective asking, “The question is not what experiences do to the learner but more how the learner creates experiences through interaction with an environment.” (p. 123). Constructivist theory poses that learners do, construct, and discover learning within their own environment. In terms of a behaviorist theory, a considerable question that may be posed is whether or not the curriculum and instruction are substantial enough to afford students positive and productive interactions with STEM based environments. Additionally with student learning ranging across a gambit of different learning styles and abilities, how can stakeholders be ensured the curriculum addresses all student individual learning styles under a common learning theory? Different learning modalities may call for engagement as well as learning theory that embraces substantial cognitive interaction. Magni, Paolina, Cappetta, & Proserpio (2013) state “cognitive absorption occurs when people are so involved in an activity that nothing else seems to matter” (p.53). This absorption of

learning from a constructivist view works as students are learning for an intrinsic value, and for the good of the collective group. These are strong tenants of common core that call for cognitive interactions and shared learning. Additionally curriculum and theory that provides learning where nothing else matters as Magni et. al. state inspires students to become lifelong competitive learners.

Consequently Rowan-Kenyon, H. T., Swan, A. K., & Creager, M. F. (2012) provide the view that, “Students’ perceptions were influenced by experiences both inside and outside the classroom, as reflected in their discussions about the nature of family involvement, teacher support, and sources of motivation.” (p. 7) Learning that evokes more than just the curriculum or learning theory or more than just a job for learning. As students are inspired to be lifelong learners and utilize curriculum for cognitive development, consideration must be given to support, motivation, and goals set by individuals invested in each student’s success.

Another view related to core standards that may serve to embrace lifelong learning shows in a technological area as Hense, & Mandi (2012) state, “challenging tasks or problems that players regard as authentic and relevant, either in relation to the reality of the game that they can relate to, or in relation to their own experience.” (p.21). Curriculum and learning theory that relates to instruction that is authentic, and relevant helps when theory aligns with personal experience. One such way that this theory connects to these learning styles comes through behaviorist type computer games. Hense, & Mandi (2012) continue “Learning in the context of computer games can here be interpreted as the joint construction of socially shared knowledge, as this has been traditionally examined through research on learning communities or on collective information processing.” (p. 21). From a technological standpoint that supports learning through different mediums, computer games work towards not only guiding learning,

but also allowing students to discover and interact with their environments. Another behaviorist aspect of computer games and computer learning shows as Hense & Mandi (2012) assert, “Accordingly, behaviorist learning mechanisms can be expected to be most effective in terms of practicing and repeating routines, primarily in the areas of perception and motor skills, but they can potentially also be useful for the acquisition of factual knowledge.” (p. 21). Rote learning evokes a consistent approach to learning routine and repeating tasks in order to learn as the game guides players along difficult levels. Computer learning evokes a blended view of behaviorist and constructivist views as learners experience both intrinsic and extrinsic motivation factors to continue learning the game.

Weurlander, M., Söderberg, M., Scheja, M., Hult, H., & Wernerson, A. (2012) indicate “the idea that formative assessment methods can act as tools for learning by affecting students’ motivation to study and by making them aware of their own learning contributing to their learning process.” (p. 758). Weurlander et. al. ‘s view relates to computer games and learning as students repeat the process and are challenged. This also relates to the model of Piaget at students learn new schemas and incorporate their learning into new challenging environments. In game learning as well as instructional models that are familiar to game models students acquire knowledge by interacting with the technological aspect of their environment. One idea of assessment and curriculum a co-worker employed was to design his class around an actual video game. The units would be considered mission trainings, and each level boss would be a major assessment. Students could repeat any of the trainings and then take on the boss again to move onto the next level and the next boss. This modified approach to curriculum and learning theory supports both behaviorist and constructivist theory as students discover new missions and guide their own learning. Weurlander et. al (2012) add, “ the design of assessment tasks is up to the

teacher and students' learning is likely to improve if teachers consciously use a series of assessment tasks to facilitate learning in a variety of ways." (p 758). Under common core teachers that are afforded to use the flexibility of instruction to engage learners may improve student output and overall academic engagement.

A blended perspective of behaviorist and constructivist learning theories creates a combination of guided instruction, appropriate engagement and self regulated learning. As Ultanir (2012) adds "From a behavioural perspective, it is thought that the appropriate task of a teacher in the development of behavior responses is to provide stimulation and reinforcement." (p. 208). This shows in curriculum and instruction which teachers may choose to stimulate student interest. Common core aims to provide more rigorous and appropriate standards, but student engagement must be paramount primarily for optimum learning. Contrarily, Ultanir (2012) suggests "A point stressed in the constructivist paradigm is that the learner occupies the top position rather than the teacher. The learner gains by interaction with his or her own environment, and in doing so understands his/her own characteristics and perspectives." (p. 205). The constructivist learning of the common core does allow learners the ability to interact with texts and environment and different perspectives. Lastly common core standards do allow learners to connect to these contexts as they state, Ultanir (2012) adds, "learning is best undertaken in real world contexts in which students may acquire and test concepts." (p. 205). These contexts relate curriculum and instruction as students in real world scenarios are able to practice their learning throughout careers and in their personal lives as well. The freedom of instruction that the constructivist view can provide allows students to test concepts for their own personal benefit.

Crossouard, B., & Pryor, J. (2012) indicate “The emergence of outcomes-based national qualifications frameworks can also of course be considered as a curriculum issue, as can the increasing instrumentalism apparent in contemporary curricula.” (p. 254). Many of the issues related to curriculum mimic contemporary curricula through students as being full compared to compete with global learners as well as making sure their educational assessments are on par with their global counterparts.

With connections to construct meaning from a constructivist theory and discovery learning among learners Gangi and Reilly (2013) reveal, “The CCSS claims to be internationally benchmarked but does not say which nations.” (p. 10). The core standards aim to develop skills in which students can compete in the global workforce and maneuver in the global working place with all nations. In regards to this students that are exposed to a combination of learning theories such as behaviorist and also constructivist view the techniques and approaches students use in their interactions for the 21st century.

Hall (2011) states, “the interplay between learning technologies and the production of educational relationships is central, and is tied to a contextual historical critique of the communal, associational uses of those technologies.” (p. 281). The future research needed within both the constructivist and behaviorist theory shows in the implication of uses future technology holds for education. Technology has the power to impede or progress education versus a traditional model which involves some of the same techniques with greater application.

#### Relation to Curriculum and Instruction

The debate between constructivist and behaviorists theory relates to curriculum and instruction and the schooling of children as the methodology used in educating students. Many theories exist on how to educate global learners and the debate as to which one is best between constructivist

or behaviorist approach tied with common core promotes various views. As the future of education moves more and more toward full immersion of Technology future educators will have to consider the older model of behaviorist perspective with a modern constructivist approach. Curriculum and instruction professional will be called to mold traits of both of these theories into a curriculum designed around global needs and technological access. Educators can use this to better meet the direct needs of their students through addressing their needs and choosing instruction from a constructivist or behaviorist perspective. An example of meeting their needs shows in our a+ programs. These are after school labs in which students complete modules for credit and remediation. In essence the computer programs are constructed from a behaviorist perspective. Once students are allowed to move on a facilitator or teacher will gauge their work and assess them through a constructivist's model engaging in social and peer instruction.

#### Future Research Needed

The future research needed may seek to answer the question of which learning theory will be most beneficial to students of the 21st century. How are technology and higher expectations impacting education, and what proof in test scores or curriculum proves educators should prepare students more so for these careers over other careers? A large majority of our society is shifting away from the old proverbial reading, writing, and arithmetic towards rigor, science, technology, engineering, and mathematics. Additionally based on the research provided curriculum and instruction that blends both perspectives together may serve as a bridge between students who have come from one educational paradigm into this new core standards curriculum. Many of the challenges learners of today will face are not even known to them as technology will take learners to unknown heights. Many of the skills and tools that constitute

learning at one point or another involve guided training, assessing and discovering solutions, and also analyzing issues for the most beneficial conclusion. Within this research combined with the goals of learners the theories of constructivism coupled with behaviorism will effectively impart students with tools to successfully compete within a global society.

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