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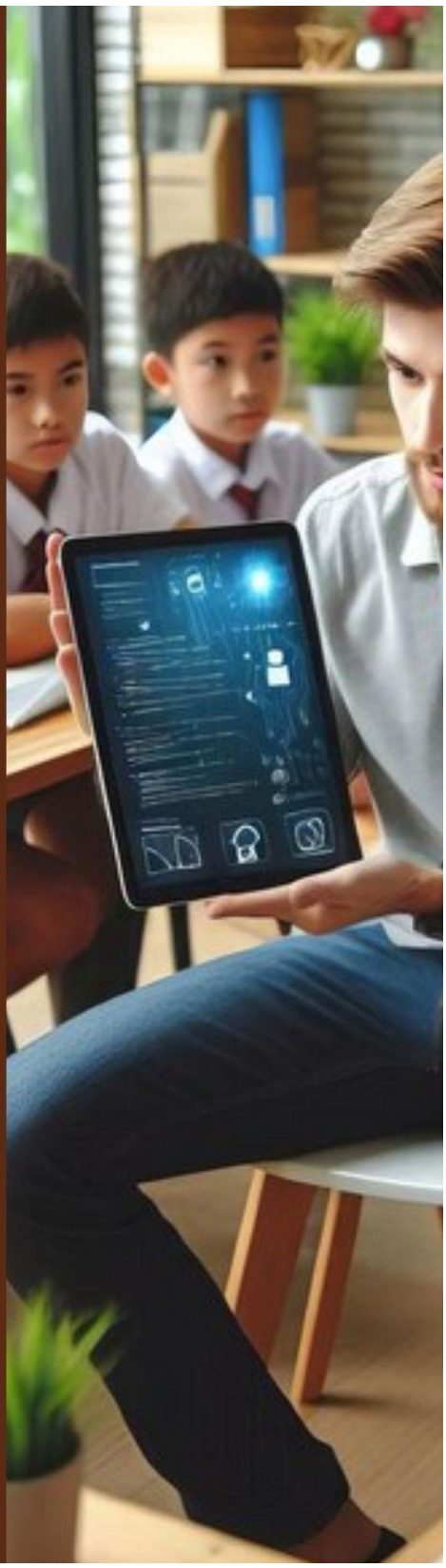

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ConstructivismLearningTheory:AParadigmforTeachingandLearning

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Abstract: *An important concept in education is constructivism. It has huge ramifications for the ways in which educators pass on their knowledge and acquire it. pupils must be the centre of attention if we are to achieve success in transforming education for all pupils. The greatest significant impact of constructivism so far could be the emphasis on student-centered learning. As a result, the essay delves into constructivism learning theory, a paradigm in education. The psychological theory of learning known as constructivism provides an explanation for the ways in which individuals may learn and acquire new information. Consequently, the field of education stands to benefit greatly from it. Everyone learns and makes sense of the world based on their own unique set of experiences, according to this viewpoint. Both the theory's conceptual framework and the hallmarks of a constructivist classroom were covered. This article presented seven educational aims of constructivist learning settings and six advantages of constructivism. A tabular form was used to spell out the significant contrasts between the constructivist classroom and the regular classroom. Also covered were the foundational ideas of constructivism as well as its many ramifications for the classroom. The study's findings suggest that in order to incorporate these principles into their work, instructors should reflect on their practice. Additionally, constructivist teachers should urge students to continually analyse how the activity is helping them acquire knowledge.*

Keywords: *Constructivism, Learningtheory, Paradigm, Teaching and Learning*

I. Introduction

One major limitation of education is that it requires students to actively build their own knowledge, rather than just receiving it from their lecturers. In other words, they find new information, change it, compare it to old, and update rules when they are no longer relevant. The learner is seen as an active participant in the process of acquiring information in this constructivist perspective on learning. The contributions of thinkers like Piaget (1980), Dewey (1919–1929), Bruner (1961), and Vygotsky (1962) provide the foundation of constructivist theories of learning. Both von Glasersfeld (1995) and Bednar, Cunningham, Duffy, and Perry (1992) have made numerous suggestions for instructional designers based on constructivist theory. These suggestions centre on the idea that learning outcomes should centre on the process of knowledge construction and that learning objectives should be derived from real tasks that have clear goals. Von Glasersfeld (1995) echoes this sentiment, arguing that learning is more of a process than a stimulus-response phenomena, necessitating self-regulation and the formation of conceptual frameworks via abstraction and reflection. Regarding this matter, it should be mentioned that constructivism may be understood in several forms, and that these various perspectives have both commonalities and differences. A fundamental tenet of the constructivist method of instruction is the idea that all cognition—including learning—is the product of "mental construction." What this means is that when pupils learn, they do so by making connections between new material and what they already know. Both the teacher's and the students' preexisting views and attitudes, according to constructivists, have an impact on how successfully a concept is taught.Constructivism is a school of thought in psychology that lays out potential avenues for information acquisition and the process of learning. Consequently, the field of education stands to benefit greatly from it. Humans, according to this view, build their own knowledge and meaning by making sense of the world around them. Pedagogy is not limited to constructivism. Piaget's Constructivist theory of learning is central to several school reform initiatives and has far-reaching effects on pedagogy and theories of learning. While some studies have shown positive outcomes from using constructivist pedagogical approaches in the classroom, others have found negative outcomes. Knowledge, according to Driscoll (2000), does not need to correspond to any

actual reality; it can simply exist in the human mind. Students will always be attempting to construct their own internal representation of the world based on their observations. Learners build their own world based on the knowledge they take in from each new experience, which they will include into their mental models. As Jonassen (1994) points out, one common misunderstanding about constructivism is that it encourages pupils to "reinvent the wheel." Actually, the student's natural curiosity about the universe and how things function is stimulated by constructivism. Instead of trying to figure out how the wheel works, students should focus on understanding how it rotates. They

becomeengagedbyapplyingtheirexistingknowledgeandreal-worlde
xperience,learningtohypothesize,testingtheirtheories,andultimatelydrawingconclusionsfromtheirfindings.

ConstructivismTheoryofLearningExplained

When it comes to the way individuals learn, constructivism is essentially a scientifically grounded paradigm. It states that individuals build their own knowledge and comprehension of the world by means of experiencing things and reflecting on those experiences (Bereiter, 1994). New information forces us to reevaluate our beliefs and assumptions in light of our prior knowledge, which may lead us to revise our positions or just dismiss the new data as unimportant. Whatever the situation may be, we actively build our own knowledge. To do this, we need to probe, experiment, and evaluate our current knowledge.A variety of pedagogical approaches may be advanced in the classroom by adopting a constructivist stance on student learning. Active learning, in its broadest definition, often entails encouraging students to generate new information via activities like experiments and solving real-world problems, and then to discuss and reflect on their actions and the ways in which their understanding is developing. The instructor takes the time to learn about the students' background knowledge before designing an activity that would build upon and address their current ideas (Oliver, 2000). The fields of education, sociology, psychology, and philosophy all contribute to constructivism. Teachers should be familiar with constructivism and its principles, but they should also be aware of the ways in which this learning paradigm affects classroom instruction and professional development opportunities for educators (Tam, 2000).Human learning, according to constructivists, is a process that consists of constructing new information upon the basis of prior knowledge. Here, reception, not construction, is central to the learning process, as opposed to the more traditional approach that sees learning as only the passive transfer of knowledge from one person to another.The central concept of created knowledge revolves on two other essential ideas.First, based on what they currently know, students build new understandings.Nobody has ever scratched a blank slate and written fresh information on it. Rather, students bring their existing body of knowledge to class, and that knowledge shapes how they take in new information and apply it (Phillips, 1995). Learning is not a passive process, according to the second idea. In this unique learning environment, students challenge their prior knowledge. Students may adjust their prior knowledge to fit new information if it conflicts with what they already know. Throughout, learners actively participate by drawing on existing knowledge, making mental notes of what's important in new learning experiences, evaluating how well new information fits with what they already know, and making adjustments to their understanding as needed (Phillips, 1995). Driscoll (2000) argues that a philosophy known as constructivism learning theory may help students develop their reasoning and mental abilities. The core idea of constructivism learning theory is the significance of experiences, or links to the surrounding environment, in the educational process.According to proponents of constructivism as a theory of learning, individuals build their own knowledge and meaning from the things they encounter in the world. Accommodation and assimilation are two important ideas in the constructivist theory of learning that lead to the creation of new knowledge by the person. When a person assimilates, they merge their new experiences with their old ones. This leads people to change their perspectives, reconsider their misconceptions, and prioritise what's really essential in life. In contrast, accommodating one's mental capability entails re-framing one's perception of the world and one's exposure to novel experiences. When things don't work the way people imagine them to, they have to adjust their expectations and rethink their expectations in light of the new reality. A common comparison between constructivism and objectivism is to say that the latter is constructivism's polar opposite. Researchers in behaviourism, including Skinner (1953), provide the groundwork for most of objectivist philosophy. According to objectivists, there is an objective truth that exists independently of human cognition and that any person's understanding of that truth may be right or wrong. As long as the right circumstances are in place for learning, objectivists believe that people may acquire and transmit knowledge in the form of discrete bits of data. As stated by Jonassen in 1991, Although the majority of the first research in formal instructional design was based on objectivist theory, contemporary scholars have acknowledged that learning environments that align more closely with constructivist principles may provide better results. When it comes to teaching complex abilities like problem solving or critical thinking, the perceived advantages of constructivist learning may be very beneficial (Tam, 2000.) Assuming constructivist theory provides the most accurate description of learning, it follows that classrooms should be designed to put students in close contact with the subject matter in order to maximise their learning. Because a learner can only make sense of things by direct experience. This leads one to believe that a conducive constructivist learning environment is necessary for constructivist learning to occur. Providing opportunities for active learning is essential in any constructivist learning environment, since the core tenet of all constructivist learning is that it must be an active process (Tam, 2000).

BasiccharacteristicsofConstructivistLearningEnvironments

Tam (2000)liststhefollowingfourbasiccharacteristicsofconstructivistlearningenvironments,whichmustbeconsideredwhenimplementingconstructivistinstructionalstrategies:

1) Knowledgewillbesharedbetweenteachersandstudents.
2) Teachersandstudentswillshareauthority.
3) Theteacher‟sroleisoneofafacilitatororguide.
4) Learninggroupswillconsistofsmallnumbersofheterogeneousstudents.

PedagogicalGoalsofConstructivistLearningEnvironments

Honebein(1996)summarizeswhathedescribesasthesevenpedagogicalgoalsofconstructivistlearningenvironmentsas:

1) Toprovideexperiencewiththeknowledgeconstructionprocess(studentsdeterminehowtheywilllearn).
2) Toprovideexperienceinandappreciationformultipleperspectives(evaluationofalternativesolutions).
3) Toembedlearninginrealisticcontexts(authentictasks).
4) Toencourageownershipandavoiceinthelearningprocess(studentcenteredlearning).
5) Toembed learninginsocialexperience(collaboration).
6) Toencouragetheuseofmultiplemodesofrepresentation,(video,audiotext,etc.)
7) Toencourageawarenessoftheknowledgeconstructionprocess(reflection,metacognition).

BenefitsofConstructivism

1.Childrenlearnmore, andenjoylearningmore whentheyare activelyinvolved, rather thanpassive listeners.2.Educationworksbestwhenitconcentratesonthinkingandunderstanding,ratherthanonrotememorization.Constructivismconcentratesonlearninghowtothinkandunderstand.

3. Constructivistlearningistransferable.Inconstructivistclassrooms,studentscreateorganizingprinciplesthattheycantakewiththemtootherlearningsettings.

4. Constructivismgivesstudentsownershipofwhattheylearn,sincelearningisbasedonstudents'questionsande xplorations, and often the students have a hand in designing the assessmentsaswell. Constructivist assessmentengagesthe students' initiatives and personal investments in their journals, research reports, physical models,andartisticrepresentations. Engagingthecreativeinstinctsdevelopsstudents' abilitiestoe xpressknowledgethrough a variety of ways. The students are also more likely to retain and transfer the new knowledge to reallife.

5. By grounding learning activities in an authentic, real-world context, constructivism stimulates and engagesstudents. Students in constructivist classrooms learn to question things and to apply their natural curiousity totheworld.

6. Constructivismpromotessocialandcommunicationskillsbycreatingaclassroomenvironmentthatemphasizescollaboration and e xchange ofideas. Studentsmust learn how to articulate theirideasclearly aswellasto collaborate on taskseffectively by sharing in group projects. Students must therefore exchange ideas andso must learn to "negotiate" with others and to evaluate their contributions in a socially acceptable manner. Thisis essential to success in the real world, since they will always be exposed to a variety of experiences in whichtheywillhavetocooperateandnavigateamongtheideasofothers.

DifferencebetweenTraditionalClassroomandConstructivistClassroom

Intheconstructivistclassroom, thefocustendsto shiftfrom theteacher to the students. Theclassroomis no longer a place where the teacher ("expert") pours knowledge into passive students, who wait like emptyvesselstobefilled. Intheconstructivistmodel,thestudentsareurgedtob eactivelyinvolvedintheir ownprocess of learning. The teacher functions more as a facilitator who coaches, mediates, prompts, and helpsstudentsdevelop and assesstheir understanding, and thereby their learning. And,in the constructivist classroom,both teacher and students think of knowledge not as inert factoids to be memorized, but as a dynamic, ever-changingviewoftheworldweliveinandtheabilitytosuccessfullystretchandexplorethatview.

The chartbelow comparesthe traditional classroom tothe constructivistone. Onecansee significantdifferencesinbasicassumptionsaboutknowledge,students,andlearning.

TraditionalClassroom	**ConstructivistClassroom**
Curriculumbeginswith thepartsofthewhole.Emphasizesbasic skills.	Curriculumemphasizesbig concepts,beginningwiththewholeand expandingtoincludetheparts.
Strictadherencetofixedcurriculumishighlyvalued.	Pursuitofstudentquestionsandinterestsisvalued.
Materialsareprimarilytextbooks andworkbooks.	Materialsincludeprimarysourcesofmaterialandmanipulative materials.
Learningisbasedonrepetition.	Learningisinteractive,buildingonwhatthestudentalreadyknows.
Teachers disseminateinformation to students; students are recipientsofknowledge.	Teachers haveadialoguewithstudents,helpingstudentsconstruct theirownknowledge.
Teacher'sroleisdirective,rootedinauthority.	Teacher'sroleisinteractive,rootedinnegotiation.

Assessmentisthroughtesting,correctanswers.	Assessmentincludesstudentworks,observations,andpointsof view,aswellastests.Processisasimportantasproduct.
Knowledgeis seenas inert.	Knowledgeisseenasdynamic,everchangingwithourexperiences.
Studentsworkprimarilyalone.	Studentsworkprimarilyingroups.

PrinciplesofConstructivism

Constructivistteachingis basedonrecentresearchaboutthehumanbrainandwhatis knownabouthowlearningoccurs.CaineandCaine(1991)suggestthatbrain-compatibleteachingisbasedon12principles:

1. Thebrainisaparallelprocessor.Itsimultaneouslyprocessesmanydifferenttypesofinformation,including thoughts,emotions,andculturalknowledge.Effectiveteachingemploysavarietyoflearningstrategies.
2. Learning engagestheentirephysiology.Teacherscan'taddressjusttheintellect.
3. Thesearchformeaningisinnate.Effectiveteachingrecognizesthatmeaningispersonalandunique,andthatstudents'understandingsarebasedontheirownuniqueexperiences.
4. Thesearchformeaningoccursthrough'patterning'.Effectiveteachingconnectsisolatedideasandinformationwithglobalconceptsandthemes.
5. Emotionsarecriticaltopatterning.Learningisinfluencedbyemotions,feelings,andattitudes.
6. Thebrainprocessespartsandwholessimultaneously.Peoplehavedifficultylearningwheneitherpartsorwholesareoverlooked.
7. Learninginvolvesbothfocusedattentionandperipheralperception.Learningisinfluencedbytheenvironment,culture,andclimate.
8. Learningalwaysinvolvesconsciousandunconsciousprocesses.Studentsneedtimetoprocess'how'aswell as'what'they'velearned.
9. We have at least two different types of memory: a spatial memory system, and a set of systems for rotelearning. Teaching that heavily emphasizes rotelearning does not promote spatial, e xperiencedlearning andcaninhibitunderstanding.
10. Weunderstandandrememberbestwhenfacts andskills areembeddedinnatural,spatialmemory .Experiential learningismost effective.
11. Learningisenhancedbychallenge andinhibitedbythreat. The classroom climate shouldbe challengingbutnot threateningtostudents.
12. Eachbrainisunique.Teachingmustbemultifacetedtoallowstudentstoexpresspreferences.

Implicationsofconstructivismforteachingandlearning

Centraltothetenetofconstructivismisthatlearningisanactiveprocess.Informationmaybeimposed,but understanding cannot be, for itmust comefrom within.Constructivism requiresa teacherto act asafacilitator whose main functionisto help studentsbecome active participantsin their learning andmakemeaningfulconnectionsbetweenpriorknowledge,newknowledge,andtheprocessesinvolvedinlearning.Brooks and Brooks (1993) summarize a large segment of the literature ondescriptions of „constructivistteachers". Theyconceiveofaconstructivistteacherassomeonewhowill:

- ❖ encourageandacceptstudentautonomyandinitiative;
- ❖ useawidevarietyofmaterials,includingrawdata,primarysources,andinteractivematerialsandencouragestudentstousethem;
- ❖ inquireaboutstudents" understandingsofconceptsbeforesharinghis/herownunderstandingofthose concepts;
- ❖ encouragestudentstoengageindialoguewiththeteacherandwithoneanother;
- ❖ encouragestudentinquiry byasking thoughtful, open-endedquestions andencouragestudents toask questionstoeachotherandseekelaborationofstudents" initialresponses;
- ❖ engagestudentsinexperiencesthatshowcontradictionstoinitialunderstandingsandthenencouragediscussion;
- ❖ providetimeforstudentstoconstructrelationshipsandcreatemetaphors;
- ❖ assessstudents" understandingthroughapplicationandperformanceofopen-structuredtasks.

Hence, from a constructivistperspective,the primaryresponsibilityof theteacher istocreate andmaintainacollaborativeproblem-solvingenvironment,wherestudentsareallowedtoconstructtheir ownknowledge,andtheteacheractsasafacilitatorandguide.

II. Conclusion

Constructivism is a theory that asserts that learning is an activity that is individual to the learner. Thistheory hypothesizes that individuals will try to make sense of all information that they perceive, and that eachindividualwill,therefore,"construct"theirownmeaningfrom thatinformation.Constructivism representsoneofthebigideasineducation.Itsimplicationsforhowteachersteachandlearntoteachareenormous.Ifour

effortsin reforming education for all studentsare to succeed, then we must focus on students. To date, a focuson student-centered learning may well be the most important contribution of constructivism. The principles ofconstructivism, increasinglyinfluential intheorganizationof classroomsandcurricula in schools, can beapplied to teaching and learning. The principles appeal to our modern views of learning and knowledge butconflict with traditional practices. Teachers need to reflect on their practice in order to apply these ideas to theirwork. Constructivist teachers encourage students to constantly assess how the activity is helping them gainunderstanding. By questioning themselves and their strategies, students in the constructivist classroom ideallybecome"e xpertlearners."Thisgivesthemever-broadeningtoolstokeeplearning.Withawell-plannedclassroomenvironment,thestudentslearnHOWTOLEARN.

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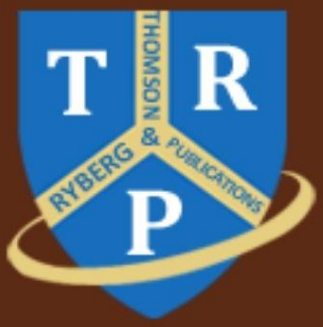

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