Introduction

Psychology, Behaviorism

INTRODUCTION What is theory? A theory is a way of thinking and a model of how things work, how principles are related, and what causes things to work together. Learning theories address key questions, for example, how does learning happen? How does motivation occur? What influences students' development? A theory is not just an idea. It's an idea that is a coherent explanation of a set of relationships that has been tested with lots of research. If the idea survives rigorous testing, that theory is said to have empirical grounding. A theory is developed from practical experience as well as research. Any given theory is usually about one aspect of the learning process. Learning theories are conceptual frameworks that describe how information is absorbed, processed, and retained during learning. Learning brings together cognitive, emotional, and environmental influences and experiences for acquiring, enhancing, or making changes in one's knowledge, skills, values, and world views. There are three main categories of learning theory: behaviorism, cognitivism, and constructivism. Behaviorism focuses only on the objectively observable aspects of learning. Cognitive theories look beyond behavior to explain brain-based learning. And constructivism views learning as a process in which the learner actively constructs or builds new ideas or concepts. Philosophies of teaching and learning, numerous philosophers have studied what the meaning of to teach and learn, and have come up with various explanations of the process of becoming educated.   Their begin to refine their own beliefs and understandings of what it means to know through examining numerous theories of knowledge and making sense of the processes of teaching and learning in their own minds.   An few philosophies and examples of

individuals who exemplify the concepts are worth exploring: Existentialism (Maxine Greene, Jean-Paul Sartre, Soren Kierkegaard, Simone de Beauvoir), Critical Theory (Karl Marx, Henry Geroux, Michael Apple, Paulo Friere), Behaviorism (B. F. Skinner), Cognitivism / Developmentalism (Maria Montessori, A. S. Neill, John Dewey, Knowles, Waldorf Schools, Reggio Emilia Schools), Social Constructivism (John Dewey, Lev Vygotsky, Jerome Bruner, Montessori, Reggio Emilia and Waldorf Schools). 1. 0 LEARNING THEORIES In psychology and education, learning theories are attempts to describe how people and animals learn, thereby helping us understand the inherently complex process of learning. There are three main categories (philosophical frameworks) under which learning theories fall: behaviorism, cognitivism, and constructivism. 1. 1 Behaviorism Behaviorism focuses only on the objectively observable aspects of learning and discounts the internal processing that might be associated with the activity. Learning is the acquisition of new behavior through conditioning. There are two types of possible conditioning: 1) Classical conditioning, where the behavior becomes a reflex response to stimulus as in the case of Pavlov's Dogs. 2) Operant conditioning where there is reinforcement of the behavior by a reward or a punishment. The theory of operant conditioning was developed by B. F. Skinner and is known as Radical Behaviorism. The word ' operant' refers to the way in which behavior ' operates on the environment'. Briefly, a behavior may result either in reinforcement, which increases the likelihood of the behavior recurring, or punishment, which decreases the likelihood of the behavior recurring. It is important to note that, a punisher is not considered to be punishment if it does not result in the reduction of the behavior, and so

the terms punishment and reinforcement are determined as a result of the actions. Within this framework, behaviorists are particularly interested in measurable changes in behavior. 1. 2. Cognitivism Since the Cognitive Revolution of the 1960s and 1970s, learning theory has undergone a great deal of change. Much of the empirical framework of Behaviorism was retained even though a new paradigm was begun. Cognitive theories look beyond behavior to explain brain-based learning. Cognitivists consider how human memory works to promote learning. So for example how the natural physiological processes of encoding information into short term memory and long term memory become important to educators. Once memory theories like the Atkinson-Shiffrin memory model and Baddeley's Working memory model were established as a theoretical framework in Cognitive Psychology, new cognitive frameworks of learning began to emerge during the 1970s, 80s, and 90s. Today researchers are concentrating on topics like Cognitive load and Information Processing Theory. These theories of learning are very useful as they guide the Instructional design. 1. 3. Constructivism Constructivism views learning as a process in which the learner actively constructs or builds new ideas or concepts based upon current and past knowledge. In other words, " learning involves constructing one's own knowledge from one's own experiences." Constructivist learning, therefore, is a very personal endeavor, whereby internalized concepts, rules, and general principles may consequently be applied in a practical real-world context. 1. 4. Informal and Post-Modern Theories Informal theories of education deal with more practical breakdown of the learning process. One of these deals with whether learning should take place as a building of

concepts toward an overall idea, or the understanding of the overall idea with the details filled in later. Modern thinkers favor the latter, though without any basis in real world research. Critics believe that trying to teach an overall idea without details (facts) is like trying to build a masonry structure without bricks. Other concerns are the origins of the drive for learning. To this end, many have split off from the mainstream holding that learning is a primarily self taught thing, and that the ideal learning situation is one that is self taught. According to this dogma, learning at its basic level is all self taught, and class rooms should be eliminated since they do not fit the perfect model of self learning. However, real world results indicate that isolated students fail. Social support seems crucial for sustained learning. Informal learning theory also concerns itself with book vs real-world experience learning. Many consider most schools severely lacking in the second. Newly emerging hybrid instructional models combining traditional classroom and computer enhanced instruction promise the best of both worlds. 2. 0 PHILOSOPHY ON LEARNING THEORIES. People have been trying to understand learning for over 2000 years. Learning theorists have carried out a debate on how people learn that began at least as far back as the Greek philosophers, Socrates (469 —399 B. C.), Plato (427 — 347 B. C.), and Aristotle(384 — 322 B. C). The debates that have occurred through the ages reoccur today in a variety of viewpoints about the purposes of education and about how to encourage learning. To a substantial extent, the most effective strategies for learning depend on what kind of learning is desired and toward what ends. Plato and one of his students, Aristotle, were early entrants into the debate about how people learn. They asked, " Is truth and knowledge to

be found within us (rationalism) or is it to be found outside of ourselves by using our senses (empiricism)? " Plato, as a rationalist, developed the belief that knowledge and truth can be discovered by self-reflection. Aristotle, the empiricist, used his senses to look for truth and knowledge in the world outside of him. From his empirical base Aristotle developed a scientific method of gathering data to study the world around him. Socrates developed the dialectic method of discovering truth through conversations with fellow citizens (Monroe, 1925). Inquiry methods owe much of their genesis to the thinking of Aristotle and others who followed this line of thinking. Strategies that call for discourse and reflection as tools for developing thinking owe much to Socrates and Plato. The Romans differed from the Greeks in their concept of education. The meaning of life did not intrigue them as much as developing a citizenry that could contribute to society in a practical way, for building roads and aqueducts. The Romans emphasized education as the vocational training rather than as the training of the mind for the discovery of truth. Modern vocational education and apprenticeship methods are reminiscent of the Roman approach to education. As we will see, however, strategies to encourage cognitive apprenticeships combine the modeling inherent in learning by guided doing with the discourse, reflection, and inquiry that the Greeks suggested to train the mind. When the Roman Catholic Church became a strong force in European daily life (500 A. D. to 1500 A. D.), learning took place through the church, through monasteries, and through their school system, which included the universities (12th century) the Church built throughout Europe. Knowledge was transmitted from the priest to the people (Monroe, 1925). Much learning was the

memorization and recitation of scripture by rote and the learning of trades by apprenticeship. The primary conception of the purpose of education was transmission-based. Many classrooms today continue a transmission-based conception of learning as the passing on of information from the teacher to the student, with little interest in transforming it or using it for novel purposes. The Renaissance (15th to the 17th centuries) revived the Greek concept of liberal education, which stressed education as an exploration of the arts and humanities. Renaissance philosophers fought for freedom of thought, and thus Humanism, a study of human values that are not religion-based, was born. By the sixteenth century the control of the Catholic Church was being challenged on a number of fronts, from Copernicus (1473 — 1543) who suggested that the sun rather than the earth was the center of the Solar System, to Martin Luther (1483 — 1546) who sought to secularize education (Monroe, 1925). The notions of individual inquiry and discovery as bases for learning were reinforced in the Renaissance. In a sense the recurring ideological debates over education for " basic" skills — the reproduction of facts and rudimentary skills — vs. education for thinking — the effort to understand ideas and use knowledge for broader purposes — replay the medieval vs. Renaissance conceptions of the purposes of education. Rene Descartes (1596 — 1650) revived the Platonic concept of innate knowledge. Descartes believed that ideas existed within human beings prior to experience and that God was an example of an innate idea. He recognized that the body could be appreciated and studied as a zoological machine, while the mind was separate and free from the body. He was one of the first to define precisely the ability of the environment and the mind to influence

and initiate behavior. He also described how the body could produce unintended behaviors. Descartes' first description of reflex action was influential in psychology for over 300 years (Hergenhahn, 1976). While these findings supported the work of behavioral psychologists seeking to understand the genesis of behaviors, his focus on the mind also supported the work of later cognitive scientists who sought to understand the thinking process itself. John Locke (1632 - 1704) revived Aristotle's empiricism with the concept that the child's mind is a blank tablet (tabula rasa) that gets s haped and formed by his/her own experiences. He believed the mind becomes what it experiences from the outside world. " Let us suppose the mind to be, as we say, white paper, void of all characters, without any ideas: How comes it to be furnished? ... Whence has it all the materials of reason and knowledge? ... from experience" (Locke, quoted in Hilgard and Bower 1975). The mind gathers data through the senses and creates simple ideas from experience; these simple ideas combine to develop complex ideas. Locke believed that education should structure experiences for students and that one essential learning was the kind of discipline that could be developed through the study of mathematics (Hergenhahn, 1976). The idea that different disciplines provide qualitatively different mental experiences and means of training the mind undergirds the basis of the discipline-based liberal arts education. Jean-Jacques Rousseau (1712 — 1778) was one of the first philosophers to suggest that education should be shaped to the child. He celebrated the concept of childhood and felt that children should be allowed to develop naturally. " The only habit which the child should be allowed to form is to contract no habit whatever. " (Rousseau, quoted in

Hilgard and Bower, 1975) In Rousseau's novel, Emile (Rousseau, 2000), the hero learns about life through his experiences in life. Complex ideas are built from simple ideas that are gathered from the world around him (Hilgard and Bower, 1975). The child-centered philosophies of Dewey, Montessori, Piaget and others follow in part from similar views. Kant (1724 — 1804) refined and modernized Plato's rationalist theory with his suggestion that " a priori" knowledge was knowledge that was present before experience. For Kant, awareness of knowledge may begin with experience but knowledge existed prior to experience. Kant espoused that these ideas must be innate, and their purpose is to create an organizing structure for the data that is received by the senses. Kant was also one of the first to recognize the cognitive processes of the mind, the idea that the mind was a part of the thinking process and capable of contributing to the thoughts that it developed. This learning theory opened the door to Piaget and others who would further develop the ideas of cognition (Monroe, 1925). Edward Thorndike (1874 — 1949) is considered by many to be the first modern education psychologist who sought to bring a scientific approach to the study of learning. Thorndike believed that learning was incremental and that people learned through a trial and error approach. His behaviorist theories of learning did not consider that learning took place as a result of mental constructs. Instead, he described how mental connections are formed through positive responses to particular stimuli. For Thorndike, learning was based on an association between sense impressions and an impulse to action. Thorndike favored students' active learning and sought to structure the environment to ensure certain stimuli that would ' produce' learning. The

father of modern behaviorism, B. F. Skinner (1904 — 1990), further developed Thorndike's Stimulus-Response learning theory. Skinner was responsible for developing programmed learning which was based on his stimulus response research on rats and pigeons in experiments that provided positive reinforcement for " correct" responses. He considered learning to be the production of desired behaviors, and denied any influence of mental processes. Programmed learning gave proper reinforcement to the student, emphasized reward over punishment, moved the student by small steps through discrete skills and allowed the student to move at their own speed. " There are certain questions which have to be answered in turning to the study of any new organism. What behavior is to be set up? What reinforcers are at hand? What responses are available in embarking upon a program of progressive approximation that will lead to the final form of the behavior? How can reinforcements be most effectively scheduled to maintain the behavior in strength? These questions are all relevant in considering the problem of the child in the lower grades. " Jean Piaget (1896 — 1980) was the first to state that learning is a developmental cognitive process, that students create knowledge rather than receive knowledge from the teacher. He recognized that students construct knowledge based on their experiences, and that how they do so is related to their biological, physical, and mental stage of development. Piaget spent years observing very young children and mapping out four stages of growth: sensorimotor (birth to about 2 years), preoperational (roughly ages 2 —7), concrete operations (encompassing about ages 7- 14) and formal operations (beginning around ages 11 — 15 and extending into adulthood. His work acknowledged the

utility of some behaviorally-guided rote learningwhile also arguing that other activities that support students' exploration are essential: The Russian scientist Vygotsky (1896 — 1934) extended Piaget's developmental theory of cognitive abilities of the individual to include the notion of social-cultural cognition — that is, the idea that all learning occurs in a cultural context and involves social interactions. He emphasized the role that culture and language play in developing students' thinking and the ways in which teachers and peers assist learners in developing new ideas and skills. Vygotsky proposed the concept of the zone of proximal development (ZPD) which suggested that students learn subjects best just beyond their range of existing experience with assistance from the teacher or another peer to bridge the distance from what they know or can do independently and what they can know or do with assistance (Schunk, 1996). John Dewey (1859 — 1952) agreed in part with Rousseau that education should not be separate from life itself, that education should be child-centered, guided by a welltrained teacher who is grounded in pedagogical and subject knowledge. Like Locke, he believed that structured experience matters and disciplinary modes of inquiry could allow the development of the mind, thus creating a dialectic between the child and the curriculum that the teacher must manage. The teacher's goal is to understand both the demands of the discipline and the needs of the child and then to provide learning experiences to enable the student to uncover the curriculum. Dewey believed that the ability of a person to learn was dependent on many things, one of which was the environment. 3. 0 Future trends There are many changes occurring in the twenty-first century which will influence the nature

of learning and learning styles being adopted. Perhaps the most significant change is that universities are now increasingly competing with a range of non-traditional education providers. This will force higher education into a pro-active stance in understanding how students learn best, and how teaching impacts on learning. Additional contemporary changes include globalisation, modularisation, mobility of learners, distance education/elearning/flexible learning, lifelong learning, mass education, and work-based learning. ' The de-institutionalisation of education, in the form of open and independent learning systems, is creating a need for learners to develop appropriate skills' (Knowles, 1975, p. 14). The impact here on learners is the gradual move away from the more traditional forms of teaching and learning, where information was transmitted to the student through physical interaction between teacher and student, to more self-directed, student-centred approaches. Problem-based learning is an example of one approach to learning where the learner needs to take responsibility for his or her own learning, with the teacher now increasingly assuming the role of facilitator of student learning. The impact of technology and the internet will continue to increase, having economic and social implications for society. For instance people can now work from home if they have immediate access to a computer. This may facilitate the increase of distance-learning courses as students no longer have to attend a physical campus to gain qualifications. Increasing modularisation enables many students to learn at their own pace, in their own time. CONCLUSION The Philosophy of education has been shaped over centuries with certain philosophers and their thoughts directly affecting it. A good example is Plato

and his educational philosophy that was christened Republic. He argues that the society would be holistic if children at a tender age would be raised with a system of education that natures their intellectual capabilities with facts, physical discipline, music, art and skills. The same principles can be applied to an individual institution. This can be defined as a collective approach informed by educational philosophy to aid in teaching in a way that the objective of imparting knowledge is achieved within a reasonable time. This philosophy of education is subject to review and modification, total over haul or improvements depending on whether the constant evaluation shows whether the goals set have been achieved or not. The drastic advances in technology have also affected the educational philosophy. The world is moving towards the web 2. 0, where technological interaction between learners and teachers is emphasized. Another factor that informs education philosophy is the fact that the world is changing its educational strategies. At one point in history, education was a transit of knowledge from the tutor to student. With nationals encouraging innovations and research in various fields, students are encouraged to discover, be inquisitive and get to learn through active experiments and research. This is a way that has revolutionized the way education policy makers and other stakeholders define philosophy of education. The relevancy of a given philosophy of education therefore, is determined by the educational needs of a given society. REFERENCES 1- Level3, Issue 2, June 2004, Dublin Institute of Technology, Learning Theories and Higher Education; Frank Ashworth, Gabriel Brennan, Kathy Egan, Ron Hamilton, Olalla SÃ¡enz; 2- Critique of Various Philosophies and Theories of Education; Ted Slater, Philosophy of

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