



FREEDOM OF THE LEARNER
A Historical Search for Self-Directed Education

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Table of Contents

Introduction	iii
Period I: Sophists (5th Century BC)	1
Period II: Reformation (1200-1700 AD)	3
<i>Peter Abelard (1079-1142): Founder of Scholasticism</i>	3
<i>John Amos Comenius (1592-1670): The Father of Modern Education</i>	4
Post Reformation Era	7
<i>Jean Jacques Rousseau (1712-1778)</i>	7
<i>Heinrich Pestalozzi (1746-1827)</i>	7
PERIOD III: 20TH CENTURY	8
<i>Jean Piaget (1896-1980): Foremost Developmental Psychologist of 20th Century</i>	8
<i>Seymour Papert: First to Raise National Consciousness -Technology</i>	9
<i>Constructivism: Theory about Self-Directed Knowledge and Learning</i>	12
Conclusions and Summary	16
Bibliography	18

INTRODUCTION

Aristotle (383-322 BC) believed that education should be controlled by the state, and that it should have as its main objective the training of its citizens. In *Politics*, Aristotle's last book, he opens with these words:

No one will doubt that the legislator should direct his attention above all to the education of youth The citizen should be molded to suit the form of government under which he lives (History of Education, Higher Education, p.3).

Who is the government Aristotle is referring to? Is it not a small collective minority of human beings exercising authority and power over the majority of society?

The purpose of this paper is to study the historical account of learners in regards to a self-directed educational environment. In this investigation, I focus on the most prominent players who have helped pave the way for *free learning* to exist. I cover three different periods of history: 5th Century BC, the Reformation, and the 20th Century—with the prominent players in *free learning* coming in the latter two eras. I begin with the *Sophists* of the 5th century BC because Saettler speaks of them as having an impact on education pertaining to theories and methods of early professional teachers (Saettler, 1990, pp. 24,26).

Should our education be dictated by others (public), or should our learning process be internally-directed and self-constructed? Depending on the political state and the current philosophical view in history, humans have rarely been independent or self-directed in their pursuit of learning. If we are born to be free, who determines the dominant minds for regulating educational power and authority over others?

Therefore, the primary issue concerning education relates to external demands (decreed by some person or people group), versus internal factors (assembled by the learner). To me, this is a serious matter. Today, we have greater freedom in the educational process than we have had previously. But these freedoms have not always existed, nor have they developed easily or naturally.

Rousseau believed that humans must be trained to be free (Reading Rousseau's *Emile*, p. 7). However, in order for this to happen, we must be educated to live and think for ourselves.

PERIOD I: SOPHISTS (5th Century BC)

Cultural Environment. From as early as the sixth century BC, thinkers in the Greek world were speculating about what the universe was made of, and how it came to assume its present form. These thinkers are conventionally called Presocratics. This was the beginning of Greek philosophy, the love of wisdom. The greatest contribution of these philosophers was their application of rational analysis to the world, which earlier had been viewed only in mythical terms (Dunkel, 1986).

During this time there also developed a collective ideal of devotion to the community. The city-state (*polis*) was everything to its citizens (History of Education, Ancient Greeks, p. 2). The city made its citizens what they were—mankind.

Athenian education reflected *polis* proclivity, but it was moving toward increasing democratization. However, it should be noted that the slave and the resident alien always remained excluded from the body of politics (History of Education, Athens).

Purpose and Nature of Education. In Sparta, the most flourishing city of the 8th and 7th centuries BC, arts and sports gave way completely to an education appropriate to men of a warrior caste. The education of girls was subordinated to their future function as mothers.

By contrast, Athens became the first to renounce education oriented toward the future duties of the soldier. To them, armed combat was only a sport; but the civil aspect of life and culture was predominate (History of Education, Athens).

The growing demand for education in the 5th century BC called into existence a class of teachers known as *sophists*. Although not philosophers, they were the first in Greece to take money for teaching wisdom, or any subject for which there was popular demand, i.e. rhetoric, politics, grammar, etymology, history, physics, and mathematics (Sophists).

In Athens, profound changes were introduced into Greek education as a result of the political transformations involved in the maturing of the city-state. Therefore, the purpose of education for the young Greek male became political participation. This meant, above all, being able on every occasion to make one's point of view prevail.

Two principal disciplines constituted the *sophists'* educational tutoring program: the art of logical argument (*dialectic*), and the art of persuasive speaking (*rhetoric*)—the two most flourishing humanistic sciences of antiquity.

The educational demand was partly for genuine knowledge, but mostly reflected a desire for spurious learning that would lead to political success. As a result, wealthy young men flocked to the dazzling demonstrations of these itinerant teachers' ability to speak persuasively, an ability that they claimed to be able to impart to students. The *sophists* were offering just what every ambitious young man wanted to learn. The greatest single skill that a man in democratic Athens could possess was to be able to persuade his fellow

male citizens in the debates of the assembly and the council or in lawsuits before large juries (Martin).

The overwhelming importance of persuasive speech in an oral culture like that of ancient Greece made the *sophists* frightening figures to many, for the new teachers offered an escalation of the power of speech that seemed potentially destabilizing to political and social traditions (Martin).

Influence on Education. Even with philosophical teachings that followed with Plato and others, the method of teaching remained in the hands of the teacher. In *The Republic*, Plato's best known perspective of education, he writes:

In the ideal state, matters are overseen by the guardian class . . .and slaves, and craftsmen and merchants are to know their place (Smith, 1997).

To Plato, educators (versus learners) were to search for truth and virtue, and in so doing guide those they have a responsibility to teach.

According to Saettler, the *sophists* had enormous influence on subsequent instruction and courses of study. Their use of rhetoric, dialectic, and grammar dominated the design of the seven liberal arts, as they came to be called, and made up the curriculum of European education for a thousand years to come (Saettler, p. 26).

PERIOD II: REFORMATION (1200-1700 AD)

Peter Abelard (1079-1142): Founder of Scholasticism

Cultural Environment. During the Middle Ages, the church and state were joined as one, producing a unified solidarity between the two. This created a supreme sovereignty for both politics and religion. However, power was not shared equally between the Emperor (state) and the Pope (church). Central authority was determined by the one having the greatest leadership influence and power at the time.

By the 12th century, a serious issue began to develop in the field of education. The primary teachers at that time were theologians, who tended to prove their points chiefly by quoting statements from Church Fathers (Kiefer). A dilemma had slowly advanced—numerous religious teachers had begun to mix their own convictions alongside traditionally accepted creeds, claiming equal authority.

This created several problems because their teachings often contradicted canonized writings, including the hollowed Church Fathers. As a result, this started to produce massive confusion with students.

Purpose and Nature of Education. The method of teaching dramatically shifted with Peter Abelard. He did the unthinkable—he dared to break with the strongholds of tradition in the field of education. On the religious side, a hierarchical chasm had been shrewdly constructed by fabricating a distinguishment between the clergy and the laity—the highs and the lows. On the educational side, in like manner, a hierarchical partition had been established between the teacher (state condoned theologians) and the student. The teacher was not to be questioned by his students, who were expected to unconditionally accept the dogmatic teachings of their master instructor.

This subservience began at a very early age. In the contemporary novel, *Matilda*, written for young readers, Roald Dahl relates what Abelard must have been observing in his day:

[The teacher] seemed to understand totally the bewilderment and fear that so often overwhelms young children, who for the first time in their lives are herded into a classroom and told to obey orders (Dahl, 1988, p. 67).

Abelard, an exceptionally brilliant rhetorical and dialectical teacher from Paris, attempted to gently correct this disturbing dilemma. He produced a book called *Sic et Non* (“Yes and No”). In this writing he placed before the student the reasons *pro* and *contra*, on the principle that truth is to be attained only by a dialectical discussion of apparently contradictory arguments and authorities (Turner, 1996, p. 3).

With a diplomatic style, Abelard wrote that “this kind of questioning excites young readers to the maximum of effort in inquiring into the truth, and such inquiry sharpens their minds” (Peter Abelard, p. 2). “All writings belonging to this class are to be read

with full freedom to criticize, and with no obligation to accept unquestioningly; otherwise the way would be blocked to all discussion . . . deprived of the excellent intellectual exercise” (Halsall).

This was a revolutionary approach in schooling! Abelard, also known to be the founder of the University of Paris, was establishing a new precedent whereby unimpeded questions from the student were not only condoned, they were solicited.

Influence on Free Learning in Education. Abelard used Aristotle as his endorsement, who was desirous above all things else to arouse this questioning spirit (Halsall). By doubting we come to examine, and by examining we reach the truth.

Nevertheless, this dissimilar method, allowing any subject or thought to be reasonably examined for the purpose of clarification and understanding, shocked many of his colleagues. They felt that Abelard gave his students the freedom to arrive at heretical conclusions (Saettler, p. 27).

Seeing how Abelard was banned for his unorthodox instructional practices, his successors (Peter Lombard & Thomas Aquinas) were not as courageous. Even though they continued Abelard’s method of writing out questions for students’ examination, they were careful to supply the correct, orthodox response (Saettler, p. 28).

This new intellectual instructional movement, termed *Scholasticism*, played an important role in the rise of European universities and helped lay the groundwork for the later system of scientific inquiry (Saettler, p. 28). From that time forward *Scholasticism* has provided teachers with the option of allowing their students the opportunity to explore their minds more freely and with less encumbrances. Looking back, this was a huge transformation in education. It paved the way for science, which is built upon the free questioning mind!

John Amos Comenius (1592-1670): The Father of Modern Education

Cultural Environment. Comenius lived in an age when people believed that human beings were born naturally evil, and that goodness and knowledge had to be beaten into them. In an oppositional assessment, Comenius believed that humans were born with a natural craving for knowledge and goodness, and the schools beat it out of them (John Amos Comenius: The Father of Modern Education).

Comenius, a Protestant, lived right in the middle of the *30-Years War* (1618-1648) between the Catholics and the Protestants, each accounting for about 50% of the populace (Comenius). The Protestants began to believe that the Catholics, angered at losing so many of its members to the Reformation, were conspiring to root out all traces of Protestantism from the empire.

Centralized in Germany, this war was fiercely violent. The mercenary soldiers so completely ravaged the land, it would take Germany over 200-years to rebuild afterwards.

Comenius was drawn to politics because he preached that the *House of Hapsburg* had committed so many crimes against humanity, that it had incurred divine judgment (Sadler, p. 165). The *House of Hapsburg* was a royal Catholic German family who were one of the principal sovereign dynasties of Europe from the 15th century forward. They were also one of the precipitators in starting this horrendous war.

As a result, Comenius postulated that the starting point of reform must always be the recognition of abuse. However, he believed the problem of reform rested in how to deal with the powers that support abuse (Sadler, p. 166). He preached that rulers are more often “defenders of disorder than of order.” To Comenius, it was indifferent to true Christians who sits on the throne, “Indeed if one of the godly sits on it . . . many flatterers and hypocrites come” (Sadler, p. 167)

An important consideration should be pointed out here: when comparing education in the Middle Ages and the Reformation with today, it must be kept in mind that the most profound difference is—western civilization separates between church and state in the public schools; whereas earlier generations haven't.

Purpose and Nature of Education. Known today as the “Father of Modern Education,” Comenius pioneered modern educational methods. Throughout his life he tried to improve the ways students were taught. His now famous book, *The Great Didactic*—meaningful translation, “*The Whole Art of Teaching*,” explored how people learn and how they should be taught from infancy through the university and beyond. It was a radical work for its time (John Amos Comenius).

Comenius had a conception of *universal knowledge*. However, it is not what one may think. To him, the encyclopedic knowledge is not knowledge of every particular thing, rather a unified understanding of the universe, the self and of all the practical activities of God and man (Davis, 1992, pp. 4,5).

From his hardships, he came to develop a philosophy of pansophism, which stressed political unity, religious reconciliation, and educational cooperation. He advocated systematizing all knowledge, teaching in the common language of students rather than in Latin, and establishing a universal system of education with opportunities that included women and people of all nations (John Amos Comenius: 1592-1670).

He also argued against general textbooks in the classroom. The use of levels of learning (graded school) was originated by Comenius. Students helping and advising other students was part of his plan to get the students involved in their own learning.

Regarding technology, he believed it should be used to support education. He also felt parents should be involved with their children's education not only while in school, but

from birth until school starts (Davis, p. 4). He wrote that knowledge and skill must have a model, “Teach everything thru examples, precepts, and imitation” (Sadler, p. 199).

Quotes from *The Great Didactic*.

Education for Everyone. Not the children of the rich or of the powerful only, but of all alike, boys and girls, both noble and ignoble, rich and poor, in all cities and towns, villages and hamlets, should be sent to school (Comenius on Education).

Naturalness of Learning. The proper education of the young does not consist in stuffing their heads with a mass of words, sentences, and ideas dragged together out of various authors, but in opening up their understanding to the outer world, so that a living stream may flow from their own minds, just as leaves, flowers, and fruit spring from the bud on a tree (Comenius on Naturalness).

Learning by Easy Stages. If we examine ourselves, we see that our faculties grow in such a manner that what goes before paves the way for what comes after (Comenius on Learning).

Influence on Free Learning in Education. One of the book titles about the life of Comenius testifies, “Teacher of the Nations.” His systematic method of education greatly impacted England, Germany, France, Sweden, Hungary, and the Netherlands, not to mention the United States of today (Davis, p. 2).

As Professor Earl Barnes has stated:

[In today's world] there is nothing startling about the educational reforms [which] Comenius [set forth]. They are the commonplace talk of all school conventions. But to see them when no one else has formulated them, to enunciate them before an audience often hostile, and to devote a life of teaching them and working them out—this requires a broad mind and something of the spirit of a martyr, and both these elements were strong in Comenius (Davis, p. 5).

Comenius regarded education as a means of preparing men to live as human beings rather than as a means of fitting them into a predetermined occupation or station (Saettler, p. 29). To him, the one thing in life which was ideally necessary was that *man should know himself*, should master himself, and employ his faculties usefully.

How can a person know themselves unless they have a *free* and *open* environment for learning? That is why Comenius taught that the human mind should be at liberty to examine by methodical and empirical observation. To him, the goal of education was understanding which should be derived by internal deduction, with the responsibility placed in the hands of the learner.

Post Reformation Era

During the post-Reformation era, two philosopher/educators also played a significant role in the developmental stages of *freeing* the learner from the servitude of teachers. Although not as prominent as Abelard and Comenius, they should be briefly mentioned.

Jean Jacques Rousseau (1712-1778)

Cultural Background. Rousseau's era echoed Abelard's: it mattered little whether the teacher had one pupil or many; the master's posture toward his pupils would be the same—distant, stern, authoritative, an embodiment of reason, morality, and the adult world. The teacher's job was to transmit the culture and to shape the child so that he could take his place within that culture. Education's task was to replace the merely human with the moral and the good (Heafford, 1967, p. 43).

Influence on Free Learning in Education. Rousseau wrote that “man is born free; and everywhere he is in chains” (Landry).

He acknowledged that teachers should be well aware that it is rarely up to them to suggest to the student what he or she ought to learn. It is up to the learner to desire it, to seek it, to find it. It is up to the teachers to put it within the student's reach, skillfully giving birth to their desire and to furnish them with the means of satisfying it. It follows, therefore, that the questions from the teacher should be infrequent and well chosen (Reading Rousseau's Emile).

Rousseau recognized the intellectual life of a person. He broke with Herculean strength the chains of the mind, and gave the child back to himself, and education back to the child and to human nature (Reading Rousseau's Emile).

Heinrich Pestalozzi (1746-1827)

Influence on Free Learning in Education. A contemporary of Rousseau, Pestalozzi developed a comprehensive system of instruction based on the educational theories of Rousseau's Emile. He propounded a new system of education taking fully into account the child himself, capable of achieving mentally, physically, and spiritually. Education was to become “child-centered,” adapting the intelligence, feelings, and enthusiasms of the children (Heafford, p. 41).

Pestalozzi also believed that the moral, intellectual, and physical powers of each learner would develop according to natural laws, in successively widening circles of experience (Saettler, p. 36). Continuing the ideas of Rousseau, Pestalozzi *humanized* education. This was the main turning point between the old and new worlds of education (Heafford, p. 43).

Hence, both Rousseau and Pestalozzi kept alive the belief that a *free environment* should exist for the learner in their educational process.

PERIOD III: 20TH CENTURY

Jean Piaget (1896-1980): Foremost Developmental Psychologist of the 20th Century

Cultural Environment. Prior to 1900, educational practice possessed little in terms of a theoretical framework. It was certainly not considered scientific nor subject to scientific study, but was a holistic enterprise in which teachers were expected to teach facts while also shaping character (Wiburg, 1995).

Until about 1890 the “theoretical” elements in teacher preparation were of two kinds: the study of certain principles of teaching and school management, exemplified in the textbooks written by experienced schoolmen that were published in many countries during the second half of the 19th century. But after 1890 psychology and sociology began to crystallize as more or less distinctive areas of study. Students of education began to have a wider and more clearly structured range of disciplines to draw upon for their data and perspectives, and to provide a “scientific” basis for their pedagogic principles (Teacher Education: Late 19th and Early 20th Century Developments).

Countries were starting to be classified as being democratic, nationalistic, patriotic, socialistic, or religious nature. In the U.S., fears developed in the late 1950s because of a loss of technological supremacy with Communist Russia. This encouraged a revival of interest in progressive ideas. As a result, philosophers, psychologists, and sociologists began to redefine the teacher-pupil relationship. More significance was placed on the child’s needs and interests, individual development, and assessment of abilities (Teacher Education).

Purpose and Nature of Education. Piaget began his work in the field of biology, but eventually became the foremost developmental psychologist of the 20th century. He studied many aspects of children’s intellectual development. What intrigued Piaget was epistemology, the branch of philosophy that focuses on the nature of knowledge. But most important, from the point of view of educational technology, was his formulation of models of cognition, which provided guidelines for a fresh, fruitful approach to the problems of instructional design (Saettler, p. 72).

Piaget detected that all children go through four stages of cognitive development. While the ages at which they experience these stages vary somewhat, he felt that each developed higher reasoning abilities (Roblyer, 1997, p. 67).

Piaget believed that a child’s development from one stage to another took place through a gradual process of interacting with the environment. Children develop as they confront new and unfamiliar features of their environment that do not fit with their current views of the world. When this happens, he said, a “disequilibrium” occurs that the child seeks to resolve through one of the two processes of adaptation. The child either fits the new experiences into his or her existing view of the world, called *assimilation*, or changes that

schema or view of the world to incorporate the new experiences, called *accommodation*, (Roblyer, p. 67).

These stages, he felt, occur naturally. Thus, he believed that much of what a child needs to learn cannot and should not be consciously taught. Rather, it should emerge as the natural by-product of experiences. There, Piaget advocated nonintervention, saying that “Everything one teaches a child prevents him from inventing or discovering” (Roblyer, p. 65).

Piaget’s research led him to conclude that the growth of knowledge is the result of individual constructions made by the learner. Piaget wrote late in his career:

The current state of knowledge is a moment in history, changing just as knowledge in the past has changed, and, in many instances, more rapidly. Scientific thought, then, is not momentary; it is not a static instance; it is a process. More specifically, it is a process of continual construction and reorganization (Brooks and Brooks, 1993, p. 25).

Influence on Free Learning in Education. Summarizing Piaget’s educational philosophy, a child’s development took place through a gradual process of stages of interacting with the environment. He felt these stages occurred naturally and couldn’t be consciously taught. If intervened with, the child was prevented from inventing and discovering.

In a traditional educational setting the students’ academic growth has already been planned out for them. It is a controlled environment, and certain demands are made from each student at every grade level. But Piaget believed that education was about forming the mind, not just furnishing it (DeVries, 1987, p. 17).

It is evident that Piaget believed a better learning environment should exist for students—a *free learning environment*. His notion was a learner can profitably search for their own answers. As such, the learner should construct their own learning process. Perhaps this is why Piaget is generally regarded as a major contributor of theoretical principles for *constructivist* thinking.

Seymour Papert: First to Raise National Consciousness about Potential Role of Technology

Cultural Environment. By the late 70s, one of the most significant technological inventions in history appeared—the microcomputer, or in common language, the personal computer. This advancement was revolutionary because of its enormous potential, not only in the learning process, but also in business operations. In a natural response, parents began to be anxious to have their students conversant with computer technology so as to enhance their chances of employment.

At this same time the number of students in schools were beginning to decline. To maintain student numbers, some schools felt bound to introduce (micro)computers as providing ‘an edge’ over neighboring schools and thereby maintaining enrollments (A Brief History of Computers in the Classroom, 1996, p. 2).

However, the biggest problem facing computer users was very limited software availability. Therefore, anyone using the personal computer had to write (in computer language) their own software programs. Obviously, these self-written programs were proprietary as well as confined in their use according to what they were designed for.

What was needed was someone or some company to develop standardized software learning programs for the classroom. And that is where Seymour Papert becomes a very significant person in the history of educational technology, because he helped to do just that.

Purpose and Nature of Education. Papert, a mathematician and pupil of Piaget, characterized children as “builders of their own intellectual structures.” And he asserted that these structures developed in a certain order. Papert believed, given the right resources and experiences (i.e. the personal computer), even very young children could *accelerate* their development and learn concepts involving formal operations (Roblyer, p. 68).

Papert felt strongly that school instruction was frequently counterproductive to children’s natural cognitive development. He frequently echoed Piaget’s beliefs that the most important learning was “learning without being taught,” and that the schools put too much emphasis on structured teaching. Papert believed that the purpose of education should provide rich, motivational environments which foster cognitive growth, and he felt that computers could make such environments possible (Roblyer).

After joining the Artificial Intelligence Laboratory team at MIT in the late 1970s, he began to experiment with a new computer programming language called LOGO. Along with the other members on his MIT team, they began to combine this language with their work with children. In order to make learning via the computer for children easier, they integrated an on-screen “turtle” into the LOGO language. This addition provided the vital link that Papert felt would allow children to move more easily from the concrete operations of earlier stages of Piaget’s hypothesis, to the more abstract (formal) ones (Roblyer, p. 69).

LOGO offered what he called “microworlds,” or self-contained, orderly environments that children could use as “incubators for knowledge.”

Although he never used the term *discovery learning*, Papert felt that children should be allowed to “teach themselves.” With LOGO “new ideas are often acquired as a means of satisfying a personal need to do something one could not do before.” He felt that children need great flexibility to develop their own “powerful ideas” or insights about new concepts (Roblyer).

In his 1980 book *Mindstorms*, Papert wrote:

In many schools today, the phrase “computer-aided instruction” [CIA] means making the computer teach the child. One might say the *computer is being used to program* the child. In my vision, *the child programs the computer* and, in doing so, both acquires a sense of mastery over a piece of the most modern and powerful technology and establishes an intimate contact with some of the deepest ideas from science, from mathematics, and from the art of intellectual model building (Papert, 1980, p. 5).

Papert went on to say that “if we really look at the *child as builder*, we are on our way to an answer.

To Papert, all technology played an essential role in the realization of his vision of the future of education. His central focus was not on the machine, but on the mind, and particularly on the way in which intellectual movements and cultures define themselves and grow. Indeed, the role he gave to the computer was that of a *carrier* of cultural “seeds,” whose intellectual products would not need technological support once they took root in an actively growing mind.

Influence on Free Learning in Education. Papert was one of the first vocal critics of using technology in the context of traditional instructional methods. In *Mindstorms*, he also became one of the first to raise the national consciousness about the potential role of technology in creating alternatives to what he perceived as inadequate and harmful educational methods.

According to Papert intellectual structures were built by the learner, rather than taught by a teacher. Yet, that did not mean that they were built from nothing. On the contrary: like other builders, children allocate materials to their own use as they find out about them— most saliently the models and metaphors suggested by the surrounding culture.

Compare this to traditional educational systems which teach students how to build that which has already been built for them. This makes the student a re-builder, not a constructive builder! This is not the “rich motivational environment” which Papert had in mind.

In a *free* learning environment, the student must be able to develop their own *powerful ideas* and *new concepts*. In this way motivation is built into the instructional method, whereby the student is able to *teach themselves*. Yes, this is revolutionary! But with the advancement of computerized hardware and software, it is now ideally possible to offer our students this dynamic independence and autonomy in their educational pursuits.

Constructivism: Theory about Self-Directed Knowledge and Learning

Cultural Environment. During the last half of the 20th century, two very different views on teaching and learning developed. One view, which one author calls *directed instruction* (Roblyer, p. 55), is grounded primarily in behaviorist learning theory and the information processing branch of the cognitive learning theories. The other view, which is referred to as *constructivism*, evolved from other branches of thinking in cognitive learning theory.

Currently, trends in school instruction seem to be leaning toward more motivating, interactive, and cooperative learning activities in which the teacher is more a facilitator and manager of resources than a means of delivering information to passive receivers (p. 73).

In the 1990's, technology has advanced faster than in any generation of this world's history. Now that the Internet is a reality, the potential and possibilities seem limitless. Combined with very advanced and extensive software rapidly becoming available, a student has the capability of getting a higher education without even physically attending a classroom. The *Educational Technology Leadership* program at *George Washington University* is self-evident to this.

Utilizing these newer educational opportunities, it is easy to see that an external *directed instructional* method would be difficult to employ in this type of environment. Competition and the independent spirit of democracy, not to mention of nature itself, conveys we must look at new ways to educate students—who can be of any age, gender, or nationality.

Going into the 21st century, the *constructivist* method of education seems to be the primary formula which can best fit this educational demand. And to our benefit, it favors the *freedom of the learner* in their educational quests.

Purpose and Nature of Education. *Constructivist* strategies in education are based on principles of learning that were derived from branches of cognitive science. This area focuses specifically on students' motivation to learn and their ability to use what they learn outside of their "school culture" (p. 65).

The *constructivist* method emphasizes students' ability to solve real-life, practical problems. In this model, learners construct knowledge themselves, rather than simply receiving it from knowledgeable teachers. They tend to focus on projects that require solutions to problems rather on instructional sequences that require learning of certain content skills.

In contrast to *directed instruction*, where the teacher sets the goals and delivers most of the instruction, the job of the teacher in the *constructivist* models is to arrange required resources and act as a guide to students, while they set their own goals and *teach themselves* (p. 70).

For example, rather than teaching an isolated objective such as *identifying* animals by phylum and genus, teachers may try to get their students to carry out cooperative projects that *investigate* the behavior of animals in the local environment.

Constructivism is not a theory about teaching. It is a theory about knowledge and learning (Brooks and Brooks, p. vii). To understand *constructivism*, educators must focus attention on the learner (p. 22).

Sometimes instructional activities based on *constructivist* models are more time-consuming, since they may call for teachers to organize and facilitate group work and to evaluate in authentic ways. This is especially true with activities involving newer technologies such as interactive video and multimedia (Roblyer, p. 71).

It is also important to recognize potential contradictions in theorists' view on how teachers should carry out *constructivist* approaches. For example, in contrast to the views of some *constructivists*, Papert feels that learning activities should be fairly unstructured and open-ended, frequently with no goal in mind other than discovery of "powerful ideas" (p. 72)

All *constructivist* approaches call for some flexibility in achieving desired goals. Most stress exploration rather than merely "getting the right answer," and a high degree of what the advocates of *directed instruction* would call *discovery learning*.

Constructivists differ among themselves, however, about how much assistance and guidance a teacher should offer. Also needed in this new educational territory, obviously, are different evaluation methods (p. 72)).

Despite these criticisms, interest in *constructivist* methods are on the rise. More attention than ever before is being focused on carrying out research to measure the impact of learning based upon student problem solving and product development.

Brooks and Brooks provide a detailed description of both classroom practice and its underlying theoretical connections. They provide five overarching principles of a *constructivist* pedagogy (Brooks and Brooks, p. viii). Notice the concepts of Abelard, Comenius, Piaget, and Papert embodied in their recommendations:

1. Posing problems of emerging relevance to learners
2. Structuring learning around "big ideas" or primary concepts
3. Seeking and valuing students' point of view
4. Adapting curriculum to address students' suppositions
5. Assessing student learning in the context of teaching

It sounds like a simple proposition: we construct our own understandings of the world in which we live. We search for tools to help us understand our experiences. To do so is human nature. It is simply honoring and respecting the person in the learning process (p. 4).

Accepting the proposition that we learn by constructing new understandings of relationships and phenomenon in our world makes accepting the present structure of schooling difficult. Educators must invite students to experience the world's richness, empower them to ask their own questions and seek their own answers, and challenge them to understand the world's complexities.

Duckworth describes her vision of teaching in the following way, "I propose situations for people to think about, and [then] I watch what they do. They tell me what *they* make of it rather than my telling them *what* to make of it." This approach values the students' points of view and attempts to encourage students in the directions they have charted for themselves (p. 5).

Constructivism stands in contrast to the more deeply rooted ways of teaching that have long typified American classrooms. Traditionally, learning as been thought to be a "mimetic" activity, a process that involves students repeating, or miming, newly presented information in reports or on quizzes and tests. *Constructivist* teaching practices, on the other hand, help learners to internalize and reshape, or transform, new information. Transformation occurs through the creation of new understandings that result from the emergence of new cognitive structures (p. 15).

When teachers recognize and honor the human impulse to construct new understandings, unlimited possibilities are created for students. Educational settings that encourage the active construction of meaning have several characteristics (p. 102):

- They free students from the dreariness of fact-driven curriculums and allow them to focus on large ideas
- They place in students' hands the exhilarating power to follow trails of interest, to make connections, to reformulate ideas, and to reach unique conclusions
- They share with students the important message that the world is a complex place in which multiple perspectives exist, and truth is often a matter of interpretation
- They acknowledge that learning, and the process of assessing learning, are, at best, elusive and messy endeavors that are not easily managed

Becoming a teacher who helps students to search rather than follow *is* challenging, and, in many ways, frightening.

Every day, millions of students enter school wanting to learn, hoping to be stimulated, engaged, and treated well, and hoping to find meaning in what they do. And every day that educators stimulate and challenge the students to focus their minds on meaningful tasks, to think about important issues, and to construct new understandings of their worlds, both teachers and students achieve a meaningful victory (p. 120).

Influence on Free Learning in Education. *Constructivism* best culminates the *free learning environment* which has been expounded by Abelard, Comenius, Rousseau, Pestalozzi, Piaget, and Papert. It has been close to 700 years since the noted teacher Peter Abelard first proposed a learning climate where unrestricted and non-forbidden

questions were allowed. In fact, he believed this environment should be characteristic for all learning. Examine and inquire as opposed to being decreed.

In its purest form, *constructivism* means allowing the learner to “construct” knowledge, concepts and understanding in their own minds. The focus is on asking questions which help students provide solutions to problems versus learning content skills. Accordingly, learning should be discovered by way of an exploration process, instead of just learning the commonly accepted “right answers.”

I especially like the idea that *constructivism* teaches exploring, questioning, reshaping, transforming, and internalizing information. Thus emerges an autonomous, independent and self-directed human being. And correspondingly, this search for understanding and knowledge continues throughout a person’s life.

A new set of images, reflective of new practices, is needed—images that portray the student as a thinker; a creator; and a constructor. Schools can become settings in which students are encouraged to develop hypotheses, to test out their own and others’ ideas, to make connections among “content” areas, to explore issues and problems of personal relevance (either existing or emerging), to work cooperatively with peers and adults in the pursuit of understanding, and to form the disposition to be life-long learners (p. 127).

The old images of school do not speak directly to the central issue of school reform—ways to evoke student learning through their search for understanding. The images of *constructivism* do (p. 127).

CONCLUSIONS & SUMMARY

A central problem in education is the failure to adapt teaching to the way children think. From this perspective, many learning disabilities are in fact created by schools (DeVries, p. 18). Children beginning school are especially vulnerable when teachers demand they learn what they cannot understand.

Our son in Kindergarten came home from school shortly after the Christmas break with a note from his teacher. Her letter disclosed a chilling declaration that all students (including her Kindergarten class) were going to be spending most of their school days preparing for standardized academic tests at the end of that school year. That meant that one-half of our child's first formal year in public school was going to be dictated by state-directed learning. This flies in the face of a *free learning environment*!

Are the educational problems which exist today that much different than they were in Abelard's day? Going against the tide of tradition, he proposed questions in several subject areas in order to get his students to think interrogatively. This method was frightening to his colleagues, because of the unknown consequential answers and further probes the students may procure by their own *free* initiatives.

In the following century Lombard and Aquinas adopted Abelard's method of allowing questions to be used in the teaching process. However, both the "right" questions *and* the "right" answers to those questions were controlled entirely by the master instructor. As a result, their method changed little the heavily-guarded, restricted traditional educational process? How can a student construct their own world view if they are not given the freedom to think and question *freely on their own*?

Relating the same harmful educational formula with the Free World of today, it might provide an accepted form of instruction in a communist educational system, but it shouldn't exist in a democratic society.

Comenius was the first person to provide a systematized concept for the learning process. He believed strongly that everyone (including rich, poor, males, females, aristocratic, and the repressed) in society should be provided the same opportunity for education. He held that learning should take place unhindered, so that one's understanding of the outer world might be a living stream which flowed from their *own* minds.

Piaget took the position that society's obligation is not only to instruct, but to provide a formative milieu (environment) in which the individual's potential may be developed and not destroyed or smothered (p. 19).

Papert followed in the ideas of Piaget by saying that children should be allowed to teach themselves, learning without being traditionally taught. He saw the child as a capable builder of his or her own mind. Papert also believed that although the focus of learning should not be upon the machine, the computer in the child's control could accelerate learning.

Constructivism primarily is open-ended education, where the student (a human being) constructs knowledge in their own minds. This educational method supports *active learning* whereby knowledge is attained from internally generated efforts; rather than *passive learning* which is something that externally “happens” to you.

I believe we can conclude that the child’s psychological experience in school affects possibilities for social, intellectual, affective, and moral development, and that the teacher’s educational world view affects the nature of the child’s psychological experience in school (DeVries, p. 396).

Constant learning means constant change, whereby growth occurs. Psychologists have observed that one of the greatest facilitators for change to occur is self-acceptance, or being accepted as one is. This runs directly counter to an implicit underlying philosophy of puritanism—that the way to correct a person’s attitude or behavior is to pour on a sufficient amount of shaming, ridicule, moral instruction, and social censure until finally the person feels *bad* enough about himself or herself that a change will be necessary. . . This is associated with psychological paralysis (Miller, 1985, p. 138).

Cannot a related comparison be made with some traditional methods of instruction, dubbed puritanical teaching? Shaming can be brought about by demanding “right” answers to questions, bestowal of low grades, and flunking out of school. Obviously most students learn to change even if it means being unnatural, rather than face the social censure if the pupil does not adapt to the curriculum requirements.

Because *constructivism* “honors” the student by freeing the learner to direct their own educational course, this method builds self-esteem, recognizing one’s present self as worthwhile and acceptable. But this is not to be confused with self-satisfaction or self-centeredness. Rather, self-acceptance is a perspective that recognizes and accepts imperfection in oneself and others as a condition of human nature. Error, though, is not cause for self-denigration (pp. 138, 139).

In summary, a *free learning environment* as proposed by Abelard, Comenius, Rousseau, Pestalozzi, Piaget, Papert, and the theory of *constructivism* is the kind of atmosphere which every teacher should aspire to provide for the learner. With the advancement of technology, it is now fully attainable. Yet, we have a long way to go before this becomes the most prevalent teaching/learning method practiced in our democratic society. It’s up to the new leaders in educational technology to help make this a reality.

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