



## Crises, Reforms, and Scientific Improvements: Behaviorism in the Last Two Centuries

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**ABSTRACT.** The changes in the society evolve the theories; the changes in the theory affect the research; and, in return, the changes in the theory and research change the society. Pursuing this widely-accepted idea, the aim of this paper is to examine the development of behaviorism by analyzing the historical and socio-political events. The paper emphasizes the philosophical bases of behaviorism namely realism, materialism and reductionism, and also some corner stones of scientific, technological, and socio-political events such as World War I and II. In addition to these, effects of those scientific improvements and crises are investigated in relation to the development of behaviorism and education. Behaviorism is still used in many areas of education such as military education and technology-based education. Lastly, this paper might contribute to the literature by pointing out the rebirth of behaviorism in the near future as a result of socio-political concerns.

**Key Words:** behaviorism, human history, philosophical bases, education, psychology.

### SUMMARY

**Purpose and Significance:** The major purpose of this paper is to scrutinize the historical development of behaviorism towards education by analyzing the socio-political events in human history. The paper also emphasizes the philosophical bases of behaviorism namely realism, materialism and reductionism, and also some corner stones of scientific, technological, and socio-political events such as World War I and II, start of technology age. In addition to these, direct and indirect effects of those rise and crisis in human history are investigated in relation to the development of behaviorism and educational thought. The paper might enlighten the process of how behaviorism was shaped through the history and how its results affected educational practices and thoughts.

**Method:** Although there is no specific method as the article is based on the historical examination of the behaviorism, documents related to content of the study were analyzed to reach the historical data. Possible national and international sources were reviewed and investigated; moreover, the chronologies for historical events were also helpful to track the evolution of the human behavior.

**Results:** As a result, when one looks back across the last two centuries, it is ostensible that behaviorism, which was rooted in realism, materialism, and reductionism, has always had an important role in human history, and it has ceaselessly been shaped by the historical events. Although perceived as crises, some events in human history could be accepted as reforms in favor of behaviorism. For instance, wars resulted in devastating events opened doors for technological projects and scientific developments. Furthermore, as the urgent need for military powers appeared, the method for training of soldiers and military personnel required the use of behavioral techniques in education. Moreover, some movements in human history also increased the popularity of the behaviorism and its applications in education such as the industrial revolution giving birth to scientific improvements, use of machines, and technology.

**Discussion and Conclusions:** Behaviorism and behaviorist principles seem to disappear in recent years, and although educational activities are stated to be mainly established upon the constructivist principles, behaviorism mainly existed in human education and training and it still continues to survive in certain educational contexts. For instance, military training and technology integrated education are the major examples besides many others for the use of behaviorism in human life. At this point, an educator should

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certainly question how the new educational trends integrate behaviorist techniques, and whether those trends are really apply new techniques or they are the recovery of behaviorism.

## **INTRODUCTION**

Education and all other components in relation to education have been such issues throughout the years that they have both affected and been affected by many activities, thoughts and changes. As feminist epistemologists, advocating the social-constructivist perspective, state: “the knower cannot be artificially objectified and solitary individual isolated from a historical and socio-cultural setting” (Phillips, 1995, p.11). In the same way, the impact of socio-political changes and scientific developments in the societies can be observed vividly on the educational movements, theories, and philosophies, as the education cannot also be separated from the society we live in. In short, the historical, scientific and socio-political events change the society. The changes in the society shape the theories; the changes in the theory affect the research; and, in return, the changes in the theory and research change the society.

As known behaviorism is a theory which perceives human nature as mechanistic and materialistic by working closely on observable and measurable behavior that can be predicted, explained and controlled by means of behavioral techniques (Curzon, 2004). At this point, the question to arise is how and why behaviors of complex human nature have been regarded as being mechanistic in the view of the social scientists. In simpler words, what have been led to behaviorist view towards the human beings? To answer this question and to understand behaviorist theory better, the reforms and crisis in human history should be examined so that their contributions on education could also be comprehended in a better way.

In human history, there are particular events which could be seen as crises such as wars and under-developed technology; on the other side, scientific improvements and social movements could be accepted as the reforms of the human history. However, it is not that much simple to call an event totally “rise” or “fall” for all societies for all the time. For instance, economic crisis could be the fall of a country, which could also give way to the rise of another country. In the similar way, the results of certain historical events have affected the direction of education somehow. In this article, to examine the changed direction of education, behaviorism –one of the most influential and widespread theory- is to be analyzed concerning the crisis and reforms of the human history.

### **The Place of Behaviorism in Human Thought**

Behaviorism also deals with observable behaviors; and behaviorists claim that understanding human behavior requires the study of particulars of that behavior (Ozmon & Craver, 2007). Looking at the history of human thought, foundations of the behaviorism go back to realism, materialism, and reductionism as summarized in Figure 1. In realism, human nature and everything existing around the human beings can be observed, and this observation results with the explanation of patterns and processes of reality, so the particulars of this reality can be clarified as well in this way.

Another philosophy behind behaviorism is materialism, which claims that “reality can be explained by the laws of matter and motion” (Ozmon & Craver, 2007, p.193). Moreover, materialist theories degrade human mind to body or to a kind of property of body, in this case man is also regarded as a material object (Armstrong, 1968). In behaviorism, body is perceived as material; and behavior is a motion (Ozmon & Craver, 2007).

Behaviorism rooted not only in realism and materialism, but also the philosophy of reductionism which interprets the human activities in connection with the behavioral responses of the animals (Curzon, 2004). In line with the reductionism, famous behaviorists conducted remarkable research on human behavior and

human learning by means of animals. To illustrate, Pavlov studied stimulus-response connection and conditioning with a dog while Skinner made use of his pigeons for analyzing operant conditioning. Furthermore, some notable books can be presented as Thorndike's "Animal Intelligence" (1911) and Tolman's "Purposive Behavior in Men and Animals" (1932).

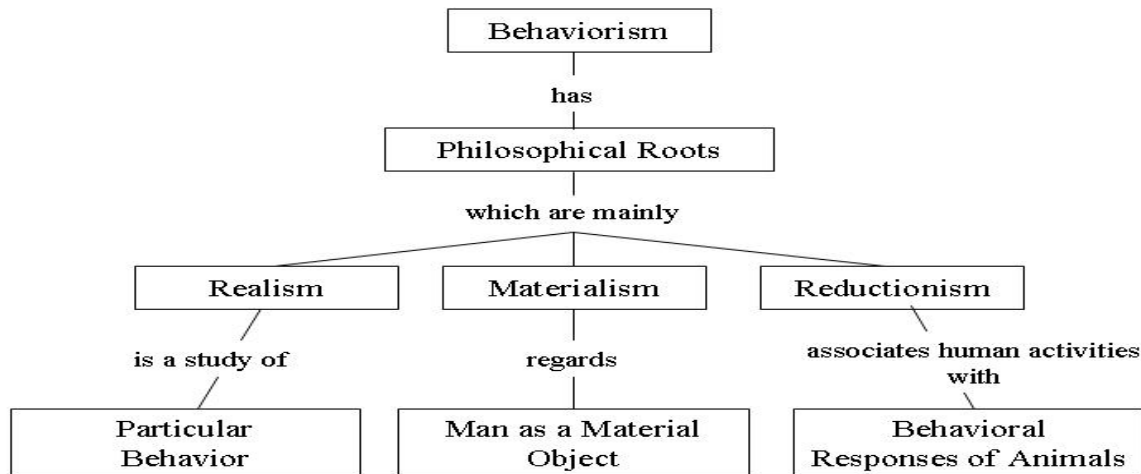


Figure 1. Philosophical Roots of Behaviorism

### The Place of Behaviorism in Human History

The philosophies and thoughts mentioned above and all the others have been flourished under the effects of noteworthy historical events. As known, behaviorism has always had a vital place in human life, but the literature shows that it boomed in early 19<sup>th</sup> and mid 20<sup>th</sup> centuries (Rogers & Skinner, 1956; Ornstein & Hunkins, 2004; Henson, 2006). Therefore, the point to be examined should be why the research on human behavior became that much popular in those years and later. To start with, in those centuries, there occurred staggering events that changed the path of the world; and so the way people live. The Age of Enlightenment in the 18<sup>th</sup> century led to the revelation of the concepts such as "Reason", "Mind", "Rationalism", "Empiricism", "Science" and others (Bilim, 1999). This could be regarded as the rise for human history when the following results were considered. In the same century, the effects of all these concepts mentioned above on the human view of their environment made people rebel to absolute authority, and conclusively, to French Revolution which embodied the demolition of feudalism by the bourgeoisie when elucidated socially (Cobban, 1999). After this point, the continual rise of bourgeoisie, the science, and clarification of the human mind gave a direct way to technological and scientific improvements in the societies. As a consequence, Industrial Revolution in the late 18<sup>th</sup> and early 19<sup>th</sup> centuries broke out, and this revolution can be regarded as one of the most outstanding events explaining why behaviorism has become this much accepted. Since the Industrial Revolution triggered machine-based manufacturing, textile industries, steam-power, technology, factories and urbanization, child labor, organization of labor, machine tools, and economic growth; depending on these, materialism, transfer of knowledge, and worker training came on the scene. All these events yielded to both reforms and fall for human and education. In those years, qualified man power was needed urgently to take place in the industries to work with the machines. To train those workers in a massive and shortest way, the countries were to develop and utilize behavioral techniques. After this period, rapid-growth of behaviorism could be observed, and important progressions were recorded such as the birth of several books and research studies on the field. Some of these can be listed here. In 1863, Sekhenov wrote "Reflexes of Brain" on how brain was working by reflexes. In 1904, Thorndike added his book titled Theory of Mental and Social Measurement to the behaviorist library. Moreover, Pavlov, in 1906, published his first

“conditioning” studies, and in 1912, McDougall created his book “Psychology: The Study of Behavior”. In 1913, Watson’s “Psychology as the Behaviorist Views It” was published. These years also corresponded to the beginning studies of individualized instruction.

Together with Industrial Revolution, the balance among the countries was lost remarkably, and then the new balances were established by the end of the World War I (WW I) and World War II (WW II). While WW I (1914-1918) caused the appearance or rebirth of military power, army, economic changes (increased GDP for Britain, Italy, USA) and manpower issues, technology (use of telephone, wireless communication, armored cars, tanks, and aircraft), decrease in population, and social changes (Güneş, 1999), WW II (1939-1945) resulted in the extermination of people, atomic bombs, the death of 55 million people, Cold War between the US and the USSR, slave work, military production, advances in economy (Yakut, 1999). As a conclusion, USA and USSR became the huge powers of the world.

All these events also affected many areas of the world and human life not only through economic and social systems, but also education systems. In this frame, considering the death of 55 million people, slave work, extermination of people, and atomic bombs seemed to be vital crises for human history; the results of these, indeed, led to reforms for the popularity of behaviorism. As results of those events mentioned, people were needed to be trained to take part in the military service as soon as possible, which could be achieved by means of strong behavioral techniques including repetition, drills, practices, punishment, discipline, physical conditioning, and reinforcement (Lafferty, 2007). In this way, it would be easier to control and lead same-thinking and -acting human masses. Behaviorism regards human beings as a part of machinery production, and the people trained with behaviorist principles were not acting as a whole organism, but as a part of a big organismic system.

These wars, which had indelible effects on countries, also became the milestones for the rapid-growth of science and technology. As in those years Skinner & Rogers (1956) also stated:

Science is steadily increasing our power to influence, change, mold- in a word, control-human behavior. It has extended our "understanding" (whatever that may be) so that we deal more successfully with people in nonscientific ways, but it has also identified conditions or variables which can be used to predict and control behavior in a new, and increasingly rigorous, technology (p.1057).

At this point, it is necessary to mention some of the noteworthy developments in educational arena. Firstly, technology and science fastened the invention of teaching machine in 1925 by Pressey. It was the first multiple-choice machine and used for rote and drill learning (Lumsdaine, 1959). Beginning of experimental use of programmed instruction was also the product of behaviorist studies. The invention of the computer, which was finished in 1942 in Iowa State University, was another landmark for the use of behavioral techniques and research in human life (Munns, n.d.). Nowadays, computer-based instruction, computer-assisted, distance learning, multimedia-usage in learning, computer-based exams, drills and practices are carried out and used by billions of people all around the world.

Besides the impacts of technological and scientific development on the application of behaviorism in education, educational research was also concentrated on the behavioral techniques. There appeared many research studies conducted and new ideas formulated by also including the human beings. For instance, while John B. Watson carried out his famous experiment on conditioning with Little Albert, Burrhus Frederic Skinner created his “Walden II” by residing his imaginary children in his imaginary school in which the education was based on regulation of human behavior to generate almost perfect human beings through behavioral techniques (Skinner, 1948 in O’Neill, 1983).

In psychological area, all these developments were taking place, and at the same time many crucial books were written by the famous educators using the reflections of the behaviorism on their new ideas. In Curriculum area, behavioral objectives gained importance; Franklin Bobbitt and Werrett Charters got affected by the idea of efficiency supported by business and industry. Besides, factory efficiency and job analysis were introduced in the same direction with urgent need for man power (Ornstein & Hunkins, 2004). Bobbit wrote "The Curriculum" (1918) which was the first book presenting the principles of curriculum planning; and curriculum was treated as a science (Oliva, 1997; Ornstein & Hunkins, 2004) and Bobbit (1924) mentioned the man as a "primarily a doer". For that reason, curriculum had to outline "what to do". Furthermore, "How to Make a Curriculum" (1924) was his other book on curriculum making, which was suggested to be based on activity analysis and behavioral objectives (Eisner, 1967). Affected from Bobbitt and Charters, Tyler wrote his book "Basic Principles of Curriculum and Instruction" (1949) which presented a rationale for "viewing, analyzing and interpreting the curriculum and instruction program of an educational institution" as stated by Tyler (1949, p. 1) in the introduction part of his book. This holy book of curriculum and instruction field is notable as to provide evidences for the utilization of behaviorism in educational area, since behavioral objectives and pupil behaviors do still exist and will exist even if the philosophy behind curriculum changes as constructivism or others.

After those years, economic and political fights among countries went on continuously; political events took place. They resulted in such events as the Korean War (1950-1953), the Hungarian War (1956), the establishment of "common market" (1957), erection of Berlin Wall (1961), the Cuban missile crisis (1962), the end of Vietnam War (1975), the fall of Berlin Wall and reunition of Germany (1989), and dismantling of the Soviet Union and the end of Cold War (1991). While these fights and crisis were continuing, the development of science and technology changed the nature and method of the wars. The countries sought out other ways to overcome their rivals, which led to replacement of the horse-sword wars with nuclear and technological wars. The USA and USSR, becoming super powers, started their fight on the space after postponing their wars on earth. Firstly, in 1957, America launched its first satellite into space, which was the beginning of stars' wars. From now on, Russian Yuri Gagarin came on the scene in 1961 to be the first man in space. America did not lose time waiting much, and was patient just for eight years to return the serve by Neil Armstrong, who was the first man on the moon.

This fight between USA and USSR had a great impact on the educational systems of both countries. Science News Letter (a famous magazine) in those years had a title of "Describe USSR Education" and a subtitle as: "The need for the United States to emphasize and support science teaching is dramatized by the advances made by Soviet Russia's scientists and engineers" (1957, p.326). On the other side, Soviet education was a State training program preparing workers for planned, prearranged positions in the labor force (Shimkin, 1959). In the same line, the following developments were being experienced; computer assisted instruction was first used by IBM; programmed instruction was first used in Harvard University and elementary, secondary schools, which systematically arranged environment to provide desired behavior changes (Bijou, Birnbrauer, Kidder & Tague, 1968) by Burrhus Frederic Skinner and Jim Holland (Mergel, 1998); Benjamin S. Bloom introduced his "taxonomy" which is still used for classifying educational objectives that define desired student behaviors as cognitive, affective and psychomotor by educators since 1956; Robert Mager, Robert Gagne and Leslie Brigg developed their "military and industrial approach" in 1962 which suggested a group of instructions for writing behavioral objectives for military and industrial psychology (Mergel, 1998); Robert Gagne established his "nine steps of instruction" in 1965; Norman E. Gronlund created his book "Stating Behavioral Objectives for Classroom Instruction in 1970; and again Robert Gagne presented his "taxonomy" exploring "hierarchical learning". As can be seen all these works and developments reflect the popularity of behaviorism, and its application in education. Table 1 represents the human history and its reflections on behaviorism.

Table 1 *Behaviorism in Human History*

<b>Date</b>	<b>Human History</b>	<b>Behaviorism</b>
18 <sup>th</sup> century till early 1900s	-Age of Enlightenment  -French Revolution  -Industrial Revolution	1863 Sekhenov: Reflexes of the Brain 1904 Thorndike: Theory of Mental and Social Measurement 1906 Pavlov publishes first conditioning studies 1907 Bekhterev: Objective Psychology
1910s-1920s	World War I (1914-1918)	1911 Thorndike: Animal Intelligence 1912 McDougall: Psychology: The Study of Behavior 1913 Watson: Psychology as the Behaviorist Views It 1918 Bobbitt: The Curriculum 1920 Experiment of Little Albert by Watson 1922 Tolman presents "a new formula for behaviorism" 1924 Bobbitt: How to Make a Curriculum 1925 Pressey: Teaching Machine: First multiple choice machine: rote-and-drill learning -Beginning of programmed instruction
1930s-1940s	-World War II (1939-1945) - Cold war (1945-1991)	1930 Skinner's first paper on conditioning 1932 Tolman: Purposive Behavior in Men and Animals 1938 Skinner: The Behavior of Organisms 1943 Hull: Principles of Behavior 1948 Skinner: Walden II 1949 Tyler: Basic Principles of Curriculum & Instruction -Mastery Learning by Morrison
1950s	-The Korean War (1950-1953) -The Hungarian Revolution (1956) -Fear for World War III -The European Economic Union (1957): "Common Market" -Sputnik (1957)	1953 Skinner: Science and Human Behavior 1954 Operant conditioning teaching machine was developed. 1956 Bloom: Bloom's Taxonomy -Computer-Assisted Instruction first used (IBM) -First use of programmed instruction in elementary, secondary schools and Harvard University
1960s	-Yuri Gagarin (1961) -Erection of the Berlin Wall (1961) -The Cuban Missile Crisis (1962): "Russian" try to put nuclear weapons -Close to a <i>nuclear</i> World War III -Neil Armstrong (1969)	1962 Mager, Gagne & Brigg: Military & Industrial Approach 1962 Glaser: Criterion-referenced measure 1964 Krathwohl: Affective Domain 1965 Gagne: Nine Steps of Instruction -Systems Approach (Curriculum Engineering)
1970s-till now	- The end of Vietnam War (1965-1975) -The Berlin Wall comes down; Germany is reunited (1989) -Dismantling of the Soviet Union	1970 Gronlund: Stating Behavioral Objectives for Classroom Instruction 1972 Gagne: Gagne's Taxonomy 1973 Popham & Baker: Expending Dimensions of Instruction

## CONCLUSION

When one looks back across the last two centuries, it is apparent that behaviorism-rooted in realism, materialism, and reductionism- has always had a crucial place in human history and has been shaped by the historical events continuously. Although perceived as crisis, some events in human history could be accepted as reforms or scientific improvements in favor of behaviorism. To give an example, wars resulted in death of masses, starvation, economic crises and other devastating events opened doors for technological projects and scientific developments. Furthermore, as the urgent need for military powers appeared, the method for training of soldiers and military personnel required the use of behavioral techniques in education. Besides, some of the reforms in human history also increased the popularity of the behaviorism and its applications in education. For instance, the industrial revolution also gave birth to scientific improvements, use of machines, and technology in work and social life. For that reason, the man power which could utilize those machines and technology was needed; and the mass education to be provided with behaviorism was the easiest and shortest way of satisfying the need.

Behaviorism was criticized so much for molding all the students and creating stereotyped citizens, and the new trends in education focus more on the students' constructing their knowledge which is known as constructivism (Erdamar & Demirel, 2008; Oxford, 1997). Educational curricula concentrate on enhancing educated individuals rather than generating a certain kind of society (Hargreaves, 1980). Even if educators have supported the utilization of new methods and materials in guiding students to construct their knowledge, behaviorism is still one of the most influential educational theories. The reason for this everlasting popularity could be that the military training still protects its importance; the mass military education and mass education in schools still continue with the bases coming from behaviorism. Through reforms and socio-political movements in history, behaviorism has changed its cover. However, it still exists in technological advancements. In last decades, the methods and materials using in elementary and secondary education have been shifted to computerized-individualized education which is mainly established on behaviorist methods as repetition, direct instruction, token economies, drill and practice etc. As it can be inferred that behaviorism still provides a foundation for instructional technology (Burton, Moore & Magliaro, 1996). Furthermore, when considering on the concept of "change of behavior", it is still so much important for all societies while educating their prospective citizens, it could be concluded that behaviorism is not fallen into disuse as thought. As Burton, Moore and Magliaro (1996, p.27) proposed "Behaviorism 'worked' even when it was often misunderstood and misapplied. Behaviorism is simple, elegant, and consistent."

Even though behaviorist principles seem to disappear and educational activities are stated to be mainly established upon the constructivist principles, behaviorism still continues to survive in educational context. When one looks from this point of view, constructivism could be questioned as: is it real constructivism or is constructivism constructing the behavior or is changing the behavior purposively from a different angle? Therefore, educational institutions and program developers or curriculum specialists should reconsider their educational approaches, methods, materials, and resources to understand that their educational perspectives or theories are really constructivist or not.

In addition, as mentioned, mass education which stresses on the reconstruction of individuals to protect secularity of social units and emerging of rational states, was the prevalent feature of education in the last two centuries (Boli, Ramiez & Meyer, 1985). However, by the progressive movement and liberal winds, education has started to be connected with the growth and improvement of individual person (Hargreaves, 1980). In the imposed atmosphere of the 21<sup>st</sup> century, the concept of "nation-state" has started to be forced to change by the influence of globalization (Eken, 2006) and has lost its meaning as a result of the given importance sub-identities under the constitution of a country. Similarly, the individualism has gained much more emphasis in educational institutions and practices and this much individualism and disunity could be regarded as a threat by nations as for the stability and security of the country (Hargreaves, 1980). In this line, the education might enter the familiar phase; countries might soon make use of behaviorism in educational contexts to provide their *unity* and *integrity* again.

## REFERENCES

- Armstrong, D. M. (1968). *Materialist theory of mind*. London: Routledge
- Bijou, S. W., Birnbrauer, J. S., Kidder, J. D. & Tague, C. (1968). *Programmed instruction as an approach to the teaching of reading, writing and arithmetic to retarded children*. US Department of Education, Educational Resources Information Centre. (ERIC Document Reproduction Service No: ED019191).
- Bilim, C. (1999). *Aydınlanma çağı*. Anadolu Üniversitesi, Açık Öğretim Yayınları. In Güneş, İ & Bilim, C. (1999). *Çağdaş dünya tarihi*. Eskişehir: Anadolu Üniversitesi Yayınları
- Bobbit, F. (1924). The new technique of curriculum-making. *The Elementary School Journal*, 75, 71-77.
- Boli, J., Ramirez, F. O., Meyer, J. W. (1985). Explaining the origins and expansion of mass education. *Comparative Education Review*, 29 (2), 145-170.
- Bondi, J. & Wiles, J. (1989). *Curriculum development a guide to practice*. United States: Merrill.
- Burton, J.K, Moore, D.M. & Magliaro, S.G. (1996). Behaviorism and instructional technology. In D.H. Jonassen (Ed.), *Handbook of research for educational communications and technology* (pp. 46-73). New York: Macmillan.
- Curzon, L. B. (2004). *Teaching in further education*. London: MPG Books Ltd.
- Cobban, A. (1999). *Social interpretation of French revolution* (2<sup>nd</sup> ed). UK: Cambridge University Press,
- Eisner, E. W. (1967). Franklin Bobbitt and the "science" of curriculum making. *The School Review*, 75 (1), 29-47.
- Eken, H. (2006). Küreselleşme ve ulus devlet (Globalization and Nation-State). *Selçuk University Journal of Social Sciences*, 16, 243-262.
- Erdamar, G. & Demirel, M. (2008). Yapılandırmacı öğrenme yaklaşımının duyuşsal ve bilişsel öğrenme ürünlerine etkisi. *Türk Eğitim Bilimleri Dergisi* 6 (4), 629-661.
- Güneş, İ. (1999). *Birinci Dünya Savaşı*. Anadolu Üniversitesi, Açık Öğretim Yayınları. In Güneş, İ & Bilim, C. (1999). *Çağdaş dünya tarihi*. Eskişehir: Anadolu Üniversitesi Yayınları.
- Hargreaves, D. H. (1980). A sociological critique of individualism in education. *British Journal of Educational Studies*, 28 (3), 187-198.
- Henson, K. (2006). *Curriculum planning: integrating multiculturalism, constructivism and education reform*. United States: Waveland Inc.
- Lafferty, B. (2007). Behaviorism. Individual foundations report (EDUC 605 course). Retrieved in 12.11.2008 from [http://5laffs.googlepages.com/EDUC\\_605\\_FR.pdf](http://5laffs.googlepages.com/EDUC_605_FR.pdf)
- Lumsdaine, A. A. (1959). Teaching machines and self-instructional materials. *Educational Technology Research and Development*, 7 (3), 163-181.
- Oliva, P.F. (1997). *Developing the curriculum*. United States: Longman.
- Ornstein, A.C. & Hunkins, F. P. (2004). *Curriculum: foundations, principles and issues*. United States: Pearson.
- Oxford, R. L. (1997). Lawrence Erlbaum Associates, Inc. Constructivism: Shape-Shifting, Substance, and Teacher Education Applications. *Peabody Journal of Education*, 72 (1), 35-66.
- Ozmon, H. A. & Craver, S. M. (2008). *Philosophical foundations of education*. New Jersey: Pearson Education Inc.
- Rogers C. R. & Skinner, B. F. (1956). Some issues concerning the control of human behavior. *Science*, 124 (3231), 1057-1066.
- Phillips, D. C. (1995). The good, the bad, and the ugly: The many faces of constructivism. *Educational Researcher*, 24 (7), 5-12.
- Mergel, B. (1998). *Instructional design and learning theory*. University of Saskatchewan. Retrieved 16th January, 2009 from <http://www2.yk.psu.edu/>
- Munns, R. (n.d.). *First-computer controversy finally nearing a conclusion*. The Associated Press. Retrieved in 15th January, 2009 from <http://www.scl.ameslab.gov/ABC/Articles/First-computer.html>
- Science News Letter (1957). Describe USSR education. *Science News Letter*, 72 (21), 326.
- Shimkin, D. B. (1959). Soviet-U.S. Education. *Science News Letter*, 75 (15), 234-235.
- Skinner, B. F. (1948). *Education in Walden Two*. USA: Macmillan Publishing Company, Inc. In O'neill, W. F. (1983). *Rethinking education: Selecting readings in the educational ideologies*. USA: Kendal/Hunt Publishing Company.
- Tyler, R. W. (1949). *Basic principles of curriculum and instruction*. Chicago: University of Chicago Press.
- Yakut, K. (1999). *İkinci Dünya Savaşı*. Anadolu Üniversitesi, Açık Öğretim Yayınları. In Güneş, İ & Bilim, C. (1999). *Çağdaş dünya tarihi*. Eskişehir: Anadolu Üniversitesi Yayınları



# Krizler, Reformlar ve Bilimsel İlerlemeler: Son İki Yüzyılda Davranışçılık

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**ÖZ.** Bilindiđi gibi toplumdaki deđişiklikler teorileri deđiřtirmektedir ve teorilerdeki deđişiklikler arařtırmaları etkilemektedir; sonuç olarak teori ve arařtırmalardaki deđişiklikler de toplumu etkilemekte ve deđiřtirmektedir. Bu görüř dikkate alındıđında, bu makalenin amacı tarihi ve sosyo-ekonomik olayları analiz ederek davranıřçılıđın geliřimini incelemektir. Makale özellikle davranıřçılıđın felsefi temellerini (realizm, materyalizm ve indirgemecilik) ve bilimsel, teknolojik ve sosyo-politik geliřimleri tetikleyen Birinci Dünya Savařı ve İkinci Dünya Savařı gibi önemli olayları vurgulamaktadır. Bunlara ek olarak, bu olayların etkileri sonucu meydana gelen insanlık tarihindeki iniřler ve çıkıřlar, davranıřlıđa ve eđitime olan etkileri kapsamında ele alınmaktadır. Davranıřçılık günümüzde halen askeri eđitim ya da teknoloji-destekli eđitim gibi eđitimin birçok alanında kullanılmaktadır. Ve sonuç olarak, bu makale yakın gelecekte birlik bütünlük çabaları ve sosyo-politik bařka nedenlerin sonucu olarak davranıřçılıđın yeniden popülerlik kazanacađına iřaret etmesi bakımından yazın alanına katkıda bulunacaktır.

**Anahtar Sözcükler:** davranıřçılık, insan tarihi, felsefi temeller, eđitim psikolojisi.

## ÖZET

**Amaç ve Önem:** Bu makalenin en önemli amacı, davranıřçılıđın tarihsel geliřimini eđitime olan etkileriyle birlikte ve insanlık tarihindeki sosyo-politik olayların da bir sonucu olarak irdelemektir. Makale aynı zamanda davranıřçılıđın felsefi temellerini vurgulamaktadır ve bilimsel, teknolojik ve sosyo-politik geliřimlere ve deđiřimlere neden olan Birinci ve İkinci Dünya Savařları gibi bir takım tarihi olayları incelemektedir. Bunların yanı sıra, insanlık tarihindeki iniřlerin ve çıkıřların davranıřçılık prensiplerine ve bunların eđitimde uygulanıřına dođrudan ve dolaylı etkileri tartıřılmaktadır. Bu bağlamda, bu makale davranıřçılıđın tarih içerisinde nasıl řekillendiđine ve bunun eđitim uygulamalarını nasıl etkilediđine ışık tutması bakımından önemli olabilir. Ayrıca, bu makale yakın gelecekte birlik bütünlük çabaları ve sosyo-politik bařka nedenlerin sonucu olarak davranıřçılıđın yeniden popülerlik kazanacađına iřaret etmesi bakımından yazına katkıda bulunacaktır.

**Metot:** Makale konu olarak davranıřçılıđın tarihsel geliřimini ele aldıđı için, genel olarak belge analizine başvurulmuřtur. Tarihi bilgilere ulařmada, yerli ve yabancı kaynaklar taranmıř ve incelenmiřtir, ayrıca, tarihi olayları bir akıř içerisinde sunan kronolojiler insanlık tarihinin evrimi takip etmek bakımından oldukça faydalı olmuřtur.

**Sonuçlar:** Sonuç olarak, geçmiř son iki yüzyıla bakıldıđında, köklerini gerçekçilik (realism), maddecilik (materyalizm) ve indirgemecilikten (reductionism) alan davranıřçılıđın, insanlık tarihinde her zaman önemli bir role sahip olduđu ve sürekli olarak tarihi olaylarla řekillendiđi görülmektedir. Öte yandan, insanlık tarihinde bazı olaylar iniř gibi algılansa da davranıřçılık açasından çıkıř olarak kabul edilebilir. Örneđin, yıkıcı etkilerle sonuçlanan savařlar, teknolojik projeler ve bilimsel geliřmeleri beraberinde dođurmuřtur. Ayrıca askeri güce ihtiyacın ortaya çıkıřı, asker ve askeri personelin talim ve terbiyesinde kullanılacak yöntemler de eđitimde davranıřçı tekniklerin kullanımını arttırmıřtır. Bunlara ek olarak, sanayi devriminin bilimsel geliřmeleri dođurması, makine ve teknoloji kullanımı gibi insanlık tarihindeki bazı çıkıřlar da davranıřçılıđın ve onun eđitimdeki uygulamalarının popülerliđini arttırmıřtır.

**Tartıřma:** Her ne kadar davranıřçılık ve davranıřçı ilkeler son yıllarda kayboluyor gibi görünüyor olsa da ve eđitim etkinliklerinin daha çok yapılandırma (constructivist) ilkelere dayandırıldıđı söylene de davranıřçılık büyük ölçüde insan eđitimi ve terbiyesinde varlıđını sürdürmeye devam etmektedir. Örneđin davranıřçılıđın insan hayatındaki birçok kullanım alanının yanı sıra askeri eđitim ve teknoloji destekli eđitim buna verilebilecek bařlıca örneklerdendir. Bu noktada, eđitimci, yeni eđitim akımlarının içerisinde nasıl davranıřçı teknikler barındırdıđını ve bu yeni akımların gerçekten de yeni yöntemler mi uyguladıđını yoksa bunların davranıřçılıđın bir bařka sürümü mü olduđunu kesinlikle sorgulamalıdır.<sup>2</sup>

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