THE REASONS FOR GAINING AND LOSING THE POPULARITY OF A PARADIGM IN CONSTRUCTIVISM: WHY? AND HOW?

Abstract: In the context of paradigmatic transformations, different approaches have periodically dominated in the field of educational sciences, as happened in other fields. There are views related to which the scientific paradigms are rising rapidly and falling slowly. The purpose of this study is to investigate why? and how? paradigms gain and lose their popularity. Constructivism studied as a basic paradigm in this study. In Turkey, MoNE changed the primary and secondary school curriculum based on constructivism approach which was a new concept for teachers and researchers. Within this change an increases research happened about constructivism. Because of the increase and popularity of the constructivism the researchers of this article decided to analyze this change in a paradigmatic change. The researchers collected data from researchers who studied and experienced the constructivist approach in their papers. So, this study used phenomenological approach to why, what, and how participants experienced the constructivism. The study reached the findings that the reasons why scientists start to conduct a research were "intellectual curiosity, faddism, external history, belief and authority"; the reasons of maintaining a study based on a specific approach were "development and belief", and the reasons of not continuing their study were explained as "dullness, hobbies and belief". Consequently, an approach in Turkey does not show a rapid rise and then a slow decrease, contrary to what is expressed theoretically; it can be said that it shows a very rapid uptrend and a very strong downward trend.

Keywords: Kuhn, paradigm, paradigmatic change, constructivism, paradigm shift, paradigmatic lose

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INTRODUCTION

Human history includes many periods in which certain paradigms (ideas-phenomenon/approach) dominates the scientific thoughts and works. Kuhn exegesis, The Structure of Scientific Revolutions, is arguably the most important book about the history and philosophy of science ever written (Schwartz, 2018). Kuhn (1970) defines paradigm in his book as the dominant and widely accepted theories and concepts in a particular field of study. This paradigm dominates and leads the thoughts and works because they are accepted the best way to understand the phenomena at that time. Paradigms are sometimes seen best way for thinking and gathering the people together to work but sometimes paradigm can blind the people and lead limited questions to ask for their observations. When a dominant paradigm cannot explain the phenomenon, an Anomaly occurs. Anomalies many times can not persuade the people to abandon the dominant paradigm when someone must articulate an alternative paradigm that accounts convincingly for the anomaly (Kuhn, 1970). A scientific revolution occurs when enough people in the community abandon the old paradigm and change their thoughts or works the new paradigm. This new paradigm entirely changes the thoughts of the people and they look at the world completely different view.

Kuhn (1970) used the concept of paradigm to cover all the explicit or implicit beliefs, rules, values, and conceptual / experimental tools that a particular scientific approach uses to question nature and find a whole relationship in nature. The paradigm, which dominates in a certain area of scientific study for a certain period, can lose its power over time and begins to show a tendency to fall. This paradigm changes over time and replaces with a new one.

There is no publication related with Kuhn's paradigm explaining constructivism in Turkey. There are a lot of publications in Google Scholar or other indexes about constructivism but there is no article analyzed the constructivism in the light of Kuhn paradigmatic change. The constructivist view of learning argues that students do not come to the classroom illiterate but arrive with lots of strongly cultivated ideas about how the instinctive world works (Wing-Mui-So, 2002). In the view of constructivists, students are not to be passive beneficiaries of knowledge equipped by teachers and teachers are not to be curators of knowledge and classroom managers (Fosnot, 1996). From this aspect, learning is a process of gaining new knowledge, which is active and complex. This is the result of an active interaction of key cognitive processes (Glynn, Yeany & Britton, 1991). It is also an active interaction between teachers and learners, and learners try to make sense of what is taught by trying to fit these with their own experience.

APPROACHES IN PARADIGM CHANGES

Questions such as "How are the paradigms settled?" "Why do they change?" "Why is the existing paradigm abandoned?" and "Why does a popular paradigm begin to lose its influence?" come to mind. There are different opinions from pioneering names such as Rogers (1995), Christensen (1997), Kuhn (1970) and Popper (1992) in this regard. According to Rogers (1995) about the change in the context of the paradigm, there are five reasons for accepting an innovation in the process of change. The first of these is the relative advantage, that is, the new idea or product is better than the replaced one. The second one is suitability, that is, it is more suitable for today's requirements and needs. The third one is complexity which means the new product or service is easier to understand than the older one, and thus it spreads faster. The fourth one is testability, that is, the product can be easily tested. The fifth one is observability, that is, the results of the new product can be observed by everyone.

Alterations- transformations taking place during the paradigm shift process are also described as "Disruptive innovation" by Professor Clayton M. Christensen of Harvard University (Christensen, 1997). Innovations and technologies destroy the ones used before by replacing them. Here the destructive term is used to mean "substitute". Disruptive innovation is the emergence of a product or service in any industrial field, which is not initially attracted to the attention but stubbornly stays on the scene, eventually replacing competitors' products or services and leading to a massive demolition in that industry (Behara & Davis, 2015). These are home phones which were replaced with cell phones and analog cameras with digital cameras, but not vice versa.

In education we can give some disruptive innovations examples of educational technology such as letter, newspaper, radio, gramophone, TV was replaced by now with computers, mobile phones. Disruptive innovations lead to paradigm shifts (Mbatha, 2015).

The paradigmatic transformation of Thomas Kuhn must also be examined in relation to the change of paradigms. Kuhn's paradigm might best be understood in terms of its life cycle. A paradigm is born when a "concrete scientific achievement" resolves debate over foundations, assumptions, and methods in a scientific field of inquiry (Walker, 2010: 435) Kuhn (1970) described the paradigmatic transformation as five stages in his work, The Structure of Scientific Revolutions.

Figure1. Thomas Kuhn's stage of Paradigmatic shift
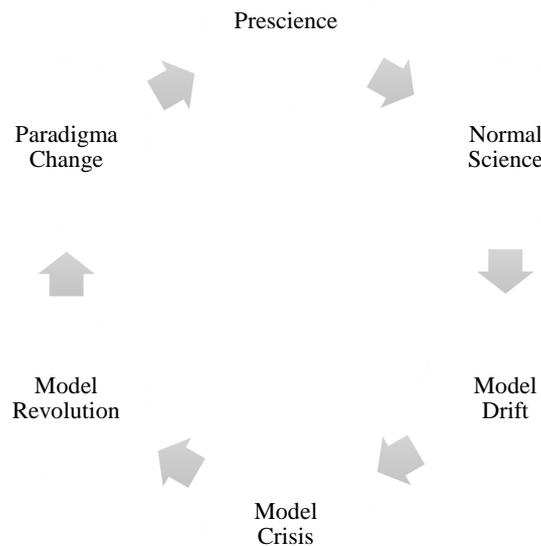
Kuhn gives the classic example of Copernican model of solar system changes the Ptolemaic model and the development of Newtonian physics. The replacement of one model by another model is called "paradigm shift" (Hairston, 1982). These changes are disruptive, and it occurs when the number of unsolved problems in a discipline reaches to crisis proportions. But these changes are not widely accepted by the old paradigm followers immediately because they have intellectual and emotional investment to old paradigm. Kuhn calls this old paradigm as normal science (Kuhn, 1970). Normal science continues for a long time until some experiments start to find inconsistencies with the old paradigm. But by the time the new paradigm can demonstrate that it will solve the problems that old paradigm could not solve, the resistance to the new paradigm will be fade away. Many of the new scholars, philosophers and academicians will start to adopt the new model and research about it. The paradigm should supply to its followers with "topic, tools, methodologies and premises" (Lehnert, 1984, s.22).

In the Kuhn approach, a world in which Newton's laws are valid and a world in which Einstein's laws are valid can never be identical. The other must be wrong for one to be true. Just like capitalism and socialism in political revolutions, it can be said that this view of Kuhn is not fully accepted in the field of education. The paradigm shifts from behaviorism to constructivism did not kill or destroy behaviorism. Behaviorism is a branch of psychology that, when applied to a classroom setting, focuses on conditioning student behavior with various types of behavior reinforcements and consequences called operant conditioning.

As explained above, there are changes in scientific approaches in every period. One of the main arguments on which Thomas Kuhn's theory

is based is that scientific development is not based on a linear and cumulative process. According to him, scientific progress is not in a linear way, but it shows itself in radical changes and breaks. The reason behind these radical changes and breaks are the paradigm shifts caused by scientific revolutions (Denktaş, 2015). There is a view that scientific paradigms rise rapidly and fall slowly in the process of change (Bornholdt, Jensen and Sneppen 2011). This asymmetric situation is said to reflect how difficult it is to put out an entirely original idea when considering the ease with which the minds are subject to erosion through innumerable changes.

It is also possible to give examples to different scientific approaches or disruptive innovations competing from the field of educational sciences, which is described as paradigm by Thomas Kuhn.

Table1. Changes in Approaches in the Field of Educational Sciences

	Tendencies
Scientific Research	Qualitative → Quantitative
Psychology	Behaviorism→Cognitive→ Postmodern Therapies
Educational Administration	Effective School Movements → quality school movements → world-class school movements
Curriculum Development	Curriculum Development → Understanding Curriculum
Process of Learning	Traditional / Behavioral → Active Learning →Constructivist→ Information navigation

As seen in the Table 1. the change occurs in all dimensions of the life. As we begin this research, the question why an approach is suddenly popular has been the starting point. Again, because of the observations in academic sense it has been observed by the researcher that Constructivist approach is beginning to lose popularity. In this study, "Constructivism" was examined as a theme with priority to find out an answer to this question.

The purpose of this study is to investigate Why? and How? The constructivist approach gained and lost its popularity in recent years. Beginning by the 2005 the popularity of constructivism started the increase exponentially but after about ten years it started to lose its popularity according to some observations of the researchers. Constructivism studied as a basic paradigm in this study. In this context, the answers to the following questions were sought:

1. How does the number of publications change on the constructivist approach as a paradigm?
    1.1. How does the number of publications about constructivist approach in scientific indexes change between 2000-2016? How will this change follow in the upcoming years?
    1.2. How does the number of publications about constructivist approach changes in Turkey?
    1.3. How does the number of publications about constructivist approach changes in other countries according to the Google Trends Application?
2. What are the reasons for the change in the number of studies on the constructivist approach as a paradigm?
    2.1. Why did the researchers start studying the constructivist approach?
    2.2. Do they continue their study of the constructivist approach? Or did they quit? What are the reasons for continuing and quitting studies?

METHOD

MODEL OF THE RESEARCH

This study has been carried out using the phenomenological design. The basic principle of the phenomenological studies is that those who have similar experiences have common opinions and perceptions and the researcher treats these common perceptions as "basic characteristics" and tries to explain them (Fraenkel, Wallen and Hyun, 2012). It focuses on phenomena that we are

aware of but do not have an in-depth and detailed understanding. In the context of this study, according to our observations we are aware of the issue that constructivist approach has been popular for a certain period and has recently started to lose its popularity. This phenomenon has been investigated in terms of the data obtained from different sources within its context, depending on the selected pattern.

CONSTRUCTIVIST APPROACH AS A RESEARCH CONTEXT (PHENOMENON)

In this research, which analyses the reasons for the increase/decrease of popularity of an approach in a scientific field, "Constructivism" has been taken as a context. Concerning the teaching process, there has been a shift from the traditional approach to the constructive approach recently because of the changing paradigm in primary school curriculum by MoNE (Orakcı, Durnalı and Özkan, 2018). The constructivist approach has become one of the focuses of many researchers and thousands of studies have been done.

In 2005, primary education programs in Turkey were prepared based on the constructivist approach (Şentürk and Aydogmus, 2017). As seen above, the constructivist approach seems to have been rapidly popular in Turkey if it is considered in the context of paradigmatic transformation or disruptive innovation. As we begin this research, the question why an approach is suddenly popular has been the starting point. Again, because of the observations in academic sense it has been observed by the researcher that this approach is beginning to lose popularity. In this study, "Constructivism" was examined as a theme with priority to find out an answer to this question.

SAMPLE

In phenomenological studies, data sources are individuals and groups that live the focus of phenomenon of the research and the ones that can express or reflect this phenomenon (Fraenkel, Wallen, & Hyun, 2012). For this reason, criterion sampling was used in the study. In this context, firstly academicians who have done at least one scientific study related to the constructivist approach between 2000 and 2016 as the result of the literature search of various databases have been identified. Then, at least 10% of the academicians who studied between 2000-2005,

2006-2010 and 2011-2016 were identified. Those who have studies with one author, or two authors were preferred in this process.

Semi-structured interview form was sent as an e-mail to these academicians. Forty (40) academicians giving feedback were included in the study group. Semi-structured face-to-face interviews were also conducted with 10 researchers who responded to the semi-structured interview form via e-mail. 70% of the participants are males and 30% are females. 20% of the participants are Professors, 30% are Associate Professors, 35% are Assistant Professors and 15% are independent researchers who are not working in a university.

DATA COLLECTION

Semi-structured interview form and systematic literature review techniques were used to collect data in the study.

SYSTEMATIC LITERATURE REVIEW

Within the scope of the study, systematic literature review was used to be able to create both the working group and to reveal the change in the numbers of works on constructivism with respect to years. In this process, between 2000-2016 years, the "Google Scholar, Web of Science, ULAKBIM (Turkish Academic Network and Information Center), YÖK Thesis Search (Council of Higher Education) and EBSCOHOST databases were scanned. When the scans were carried out in the databases, they were screened based on "year". For example, the web of science was scanned with the key words "2011-2011 / 2012-2012". Only studies carried out in the field of education were taken as a basis.

Secondly, "Google Trend" application was utilized to find search frequency. This application can be used to discover multiple search terms and terms in different languages (almost) in real time. Within the scope of this study, scanning statistics on "constructivism" taken as a cross section in the research in the world and in Turkey were calculated. The data obtained with Google Trends was downloaded to the computer in CSV format and converted into Microsoft Excel format. Later, the graphs were drawn converting data into annual data. The data obtained from each key term was combined and a whole graph was drawn.

The numbers displayed in Google Trend Apps show the total number of searches made for a term compared to the total number of searches made on Google over time. The downward-sloping line means that the relative popularity of the search term is decreasing. However, this does not mean that there is a reduction in the total number of searches made for the subject term. It only means that its popularity is decreasing when compared to other searches.

SEMI-STRUCTURED INTERVIEW FORM

It was used in the research process to determine the opinions of the working group on the topic. The form consisting of open-ended questions was examined by two specialists in their fields besides the researcher in terms of suitability for the purpose of the research. The final form was sent via mail to the working group. The questions on the form are given in the table 2. There are two semi-structured questions in the form.

Table 2. Semi-Structured Questions

Question 1: Why did you start study/studies on constructivism?
Question 2: Do you continue scientific studies on the constructivist approach (article, thesis, book, paper...)? Please explain your answer and the reasons. Yes. Because… No. Because

The interview form mentioned above in table 2 was sent to the researcher via e-mail who studied on the constructivist approach and they were asked to reply. The purpose of study was explained to most of these participants by calling.

In the scope of the study, negotiations were also conducted to reveal the in-depth implications of the phenomenon studied. Interviews are data collection processes that allow interaction, flexibility, and probing. The talks were conducted face to face, by Skype program and telephone. In the process, semi-structured interviews were conducted by asking the questions determined initially. In necessary situations, confirmation or re-interview with previous interviewees was conducted for different questions.

DATA ANALYSIS

Inductive content analysis is a qualitative method of content analysis that researchers use to develop theory and identify themes by studying documents, recordings and other printed and verbal material (Chron, 2021). As the name implies, inductive content analysis relies on inductive reasoning, in which themes emerge from the raw data through repeated examination and comparison. Inductive content analysis was applied to the data obtained from the semi-structured interview form. Analyses were carried out to reveal the meanings. First, the codes were set, and the themes were deducted. The results were presented with descriptive explanations. A situation-based approach was applied in the analysis of the data and in the presentation of the results. In the presentation of the data, the criterion of intensity (different opinion) was tried to be taken into consideration.

Regression analysis was conducted to determine the direction of change in research results in the search engine according to years. Before the analysis, it was checked whether the publications obtained in each search engine overlap. Publications from multiple search engines were received as a single. In the analysis process, the "curve estimation" process was performed to determine which model was more compatible and it was determined that it was the most explanatory model of the "cubic" model ($R^2 = 0.947$). As a result of this analysis, how the change would be in the following years was tried to be predicted.

RELIABILITY AND VALIDITY

Inter-rater reliability checking was conducted by two experts by experience once an initial coding frame had been developed. The inter-rater reliability between the coders was 80%, in line with Miles and Huberman (1994) that 80% agreement on 95% of codes is sufficient for internal reliability in the study. The compliance percentage was figured out 80%. The research process for external reliability was explained in detail. The data are kept by the researcher to be shared with the ones requesting it. Participants were asked to confirm their comments after the interview for internal validity. The results of the analysis obtained were shared with some

participants. The relationship of each specified theme with other items was checked and tried to be integrated. The internal validity with the examples of direct quotations of the participants in the interview process and the external validity with detailed explanations of the research committed in the research process was tried to be enhanced.

FINDINGS

In this section, findings obtained about research questions are presented.

A time series regression analysis was conducted to determine how this change in the survey would be depending on the years ahead. The results obtained are as follows.

Table 3. Regression Values for the Suitability of the Model

	Sum of Squares	df	Mean Square	F	Sig.
Regression	4661763,606	3	1553921,202	70,818	.000
Residual	263308,394	12	21942,366		
Total	4925072,000	15			

According to the findings in Table 3, the proposed model was found to be fit for analysis.

Table 4. Values of Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
VAR00001	-371,999	94,342	-3,091	-3,943	.002
VAR00001 ^2	70,687	12,695	10,271	5,568	.000
VAR00001 ^3	-2,835	,492	-6,498	-5,764	.000
(Constant)	469,385	190,972		2,458	.030

Since the value of the time variable p is less than 0.005, it is a significant predictor of the number of scans. Time change formula for models is below:

Scanning number=469,385 -371,999 * time + 70,687 * time ^ 2- 2,835 * time ^ 3. Estimated number of scanning for 2016 and 2017 because of this formula estimation are given in the graph. According to the findings in the graph, there is a rapid rise and a rapid decrease, and this decrease will continue in 2017 as well.

The number of studies conducted in Turkey regarding the constructivist approach in this research question, and the changes in the number of studies by years, and the Google scanning statistics regarding this approach have been analyzed. The findings obtained from the literature analysis are presented in the following graphic.

Graph 1. Changes in the number of studies done on the constructivist approach over the years in Turkey

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
EBSCOhost	0	0	0	0	0	0	0	1	5	8	13	7	11	9	5	0
ULAKBIM	0	1	13	12	27	44	58	112	113	189	225	232	240	260	136	49
Web of Science	0	0	0	2	6	10	4	46	20	90	118	64	88	64	50	24
YÖK	0	4	3	8	4	15	25	34	60	49	50	29	30	26	24	14
Google Scholar	5	6	38	33	102	80	177	291	374	542	850	931	1085	1234	1016	737
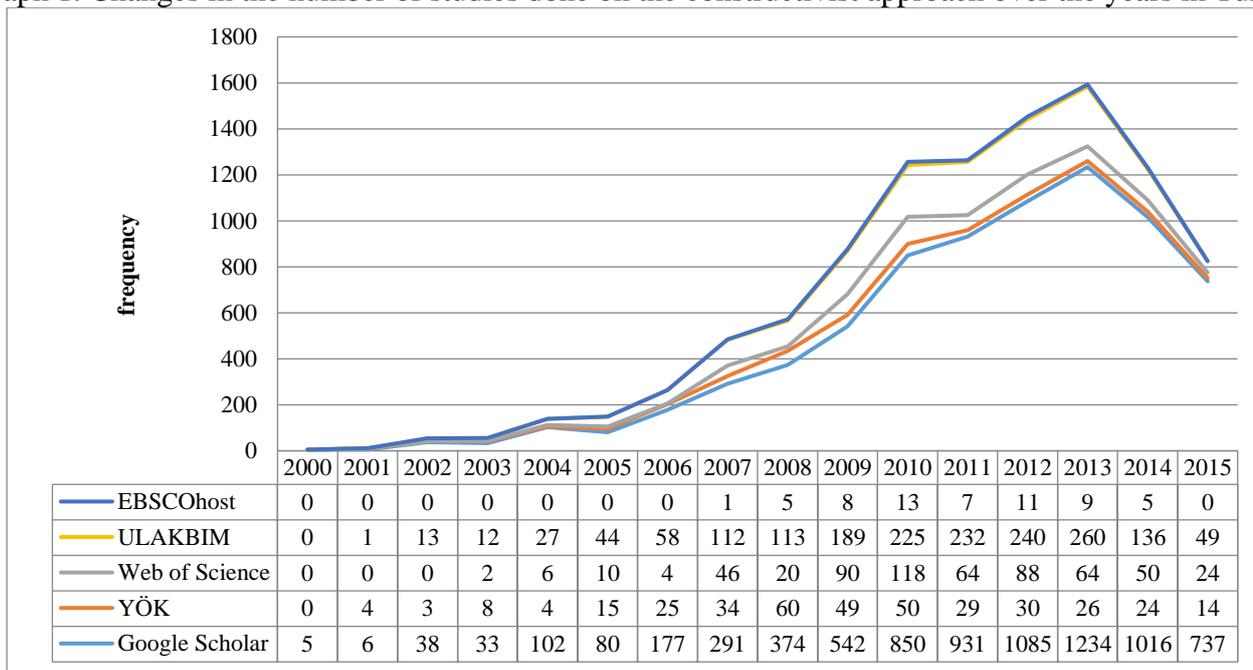
As it can be seen from the graph, it is understood that very few studies were done about this topic between 2000-2005, when the structural change in the program and learning processes in education system in Turkey were put into practice. It is observed that the rate of increase in scientific studies related to the constructivist approach is the highest in 2008-2010. It is seen that there was a standstill between 2010 and 2011 and most publications were carried out in 2013. In the same graph, it is seen that the studies related to this subject decreased dramatically after 2013 and continued in 2015.

Graph 2. Change trend of publications related to constructivist approach by years
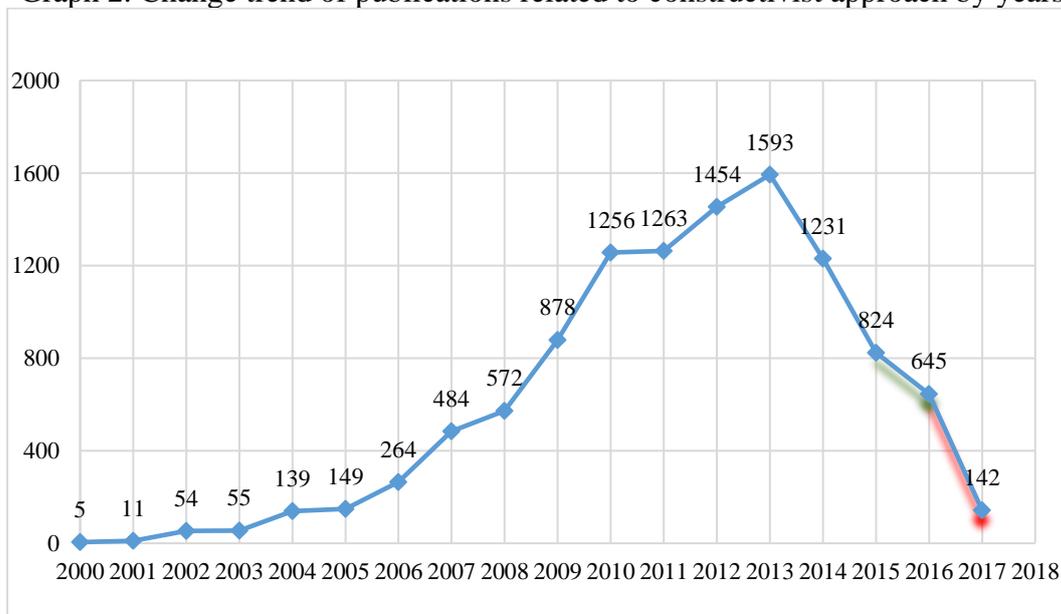
As a result, although there is an increase in the number of scientific publications in the field of education in Turkey, it can be said that there are dramatic decreases in the number of studies on constructivism and this decrease will continue in the following years. Red line was computed through regression prediction. Within the scope of the study, scanning results in this approach were analyzed using the trending Google app. The findings are as follows.

Graph 3. Scan results of the constructivist approach around the world
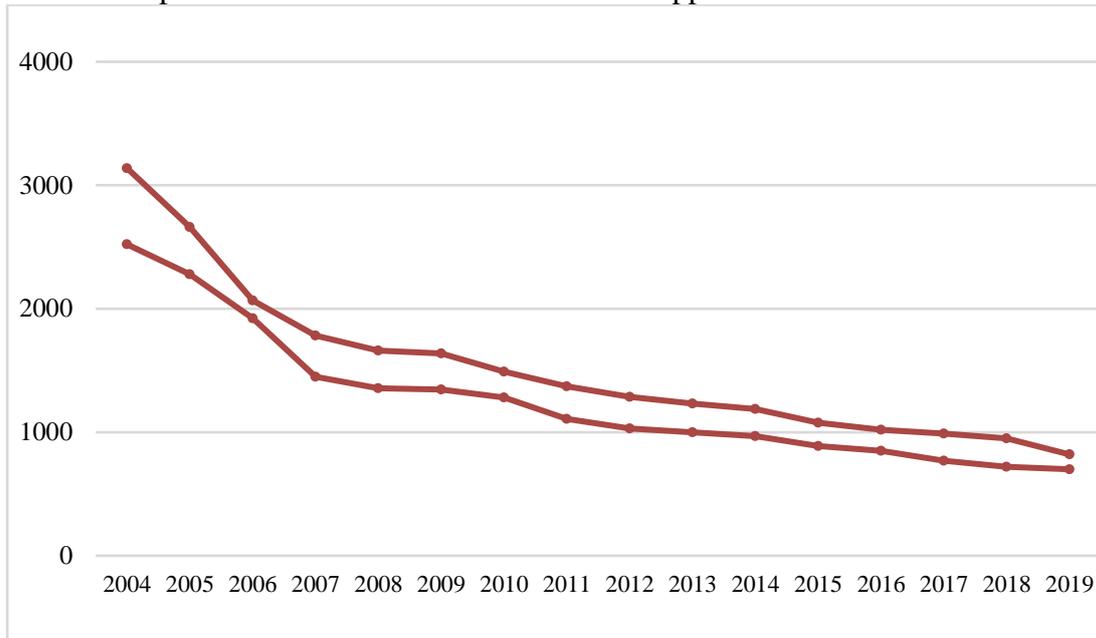
As it is seen in Graphic 3, the number of researches done on Google using the keywords "constructivist and constructivism" is the highest in the world in 2004 and there is a dramatic decline towards 2016.

Graph 4. Scan results related to constructivist approach in Turkey
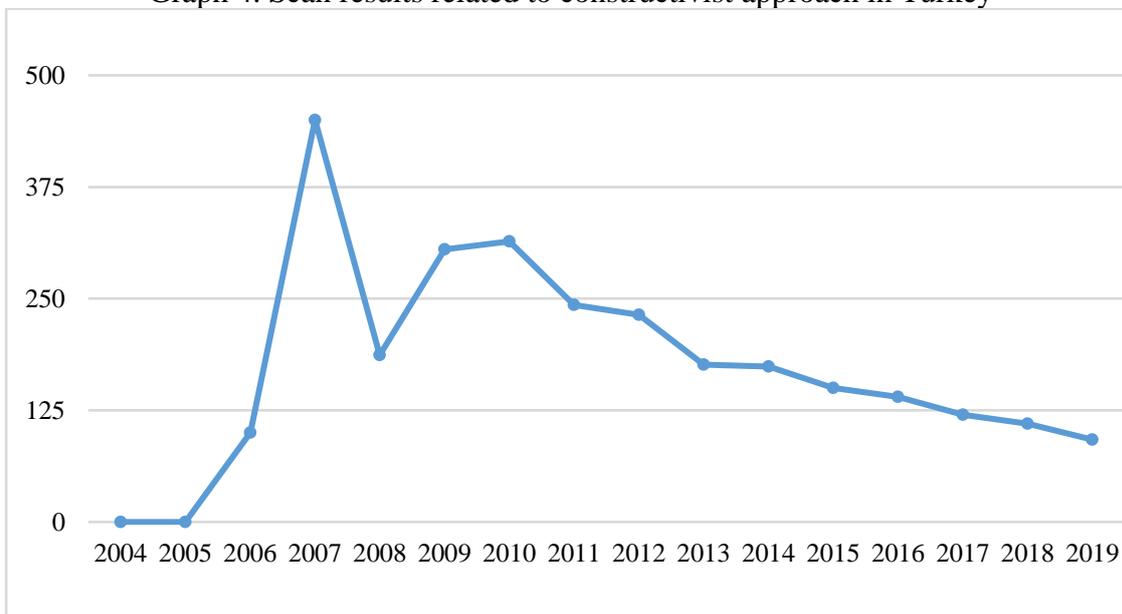
When the level of scanning made using the word "constructivist" in Turkey was examined, it was seen that there was no scanning to be included in the index in 2004-2005, but it was seen to increase very rapidly from 2006 to 2007. It was understood that there was a decline again in 2008, but it was understood that there was a rise between 2009 and 2010 again and then it dramatically decreased towards 2019. As a result, when the findings related to the number of studies related to this subject in the database and the findings related to the Google scanning indexes

were examined, it can be said that the constructivist approach had a rising popularity initially and then it decreased, or its popularity decreased.

The reasons why researchers started scientific studies on an approach and why they studied on this subject – the status and the reasons whether they continued studying on this subject were investigated. As a result of the analysis of the findings, the following themes and codes related to these questions were obtained.

Figure 2. The themes related to the reasons why scientists study on the constructivist approach, the reasons why they continue or not the studies
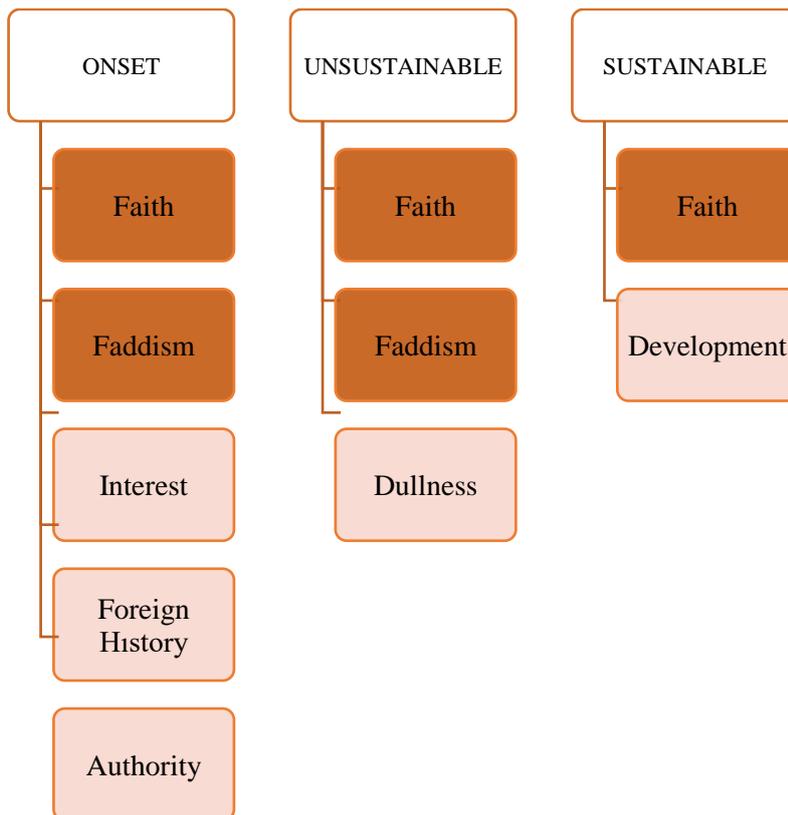
Loss of faith, faddism, intellectual curiosity, external history, and authority as reasons for the scientists to start study on the constructivist approach. The reasons for not continuing the studies related to the constructivist approach were found to be Loss of faith, faddism, and dullness as well as the Loss of faith and development themes related to the reasons for continuing the studies. Based on an approach, it is seen that the theme of Loss of faith is common in the dimensions of starting study, continuing the study or not. Faddism is also one of the reasons to start studying and not to continue studying. These themes and codes are explained in detail below. The findings of participants' reasons for starting the study using the constructivist approach are given below.

Table 5. Themes and Codes Related to the Reasons for Doing Constructivist Approach Studies

Theme	Code	Example Quotation
Intellectual curiosity and interest	- Curiosity - Being related to study field	*... This approach aroused my interest. For this reason, I studied on it because I was wondering ... (A16)* *... I started to study because this approach is directly related to my work area ... (A1)*
Faddism	-It is a new approach - Trendy - Everyone is studying on this issue - To enjoy studying current topics - To be most studied work after Literature review - To be a subject studied abroad - To be the newest approach	*I started studying on this subject because everyone in my field studied on this topic ... (A3)*
External history	- The Ministry has started to implement this approach since 2005 - Problems in implementation of the Ministry regarding the constructivist approach - To determine the degree of availability of the approach - Identifying the problems of the approach in practice - To determine the effectiveness of the approach -There are not enough studies on the implementation of this subject	*... When the Ministry of Education began to implement this approach, various problems arose. I started to work on this subject to contribute to the better implementation of this approach. (A35)*
Loss of Loss of faith	- Solving existing education problems - Problems that cannot be solved in the current level (Malformation) - Relative advantage - Suitability to today's requirements and needs - Results can be observed by everyone	*... this approach is better than the classical approach. (A23)* *I believe this approach will contribute to the problems in our country's education system. (A21)*
Authority-Guidance	- Guidance of people in authority	*.. I had to do this study because my adviser wanted me to work on this issue. (A18)*

Participants in the title of "Intellectual curiosity" theme seemed to indicate that they are working on studies based on a constructivist approach because of being newly emerged approach, curiosity about this approach and being close to study subjects they previously studied.The second theme of the participants' reasons for starting study on the constructivist approach was defined as "faddism". Many people in the field of education have made this approach popular by working on this approach.

Some participants stated that they decided to study because of reasons such as everyone has started to study on this approach, having a high trend, being in the most studied topics in the literature review. As a result of the analysis of the findings within the scope of the research, another theme was defined as "external history". Each science field has internal and external history. External history is about the relationship of problems which a country experiences with scientific activities in that country. In a country, there is "a" problem in the education system, and if there are researches on "a" in scientific fields, there is an external history of scientific activities. This indicates that the relationship between the needs of the society and scientific production has been established (Tekeli, 2012). When findings were examined in the Table 5, it was understood that some participants started to study on this

approach because of reasons such as the Ministry of Education putting this approach into practice, problems in practice, solutions to the problems in practice, and reaching the results of how to implement the approach best. In the scope of the study, the fourth theme was called "Loss of faith". Some participants stated that this approach would solve current educational problems and that their positive aspects were more favorable than other approaches (relative advantage), and that they started working on this approach because of the Loss of faith that it was appropriate for today's educational conditions and that their outcomes could be observed in a concrete way by everyone.

The final theme of the participants' reasons for starting the study on the constructivist approach was called "authority". Especially postgraduate researchers declared that they started to study on this approach because of the guidance of their advisors. In the study, the reasons that the participants continue or not their studies on the constructivist approach were searched. The findings obtained as an analysis of the collected data for this purpose are presented below.

Table 6. The Themes and Codes Related to the Status and Reasons for Resuming Work on the Constructivist Approach

Theme	Code	Example Quotation
Elaboration	- The necessity of continuing the studies to apply the approach - Good understanding of the matter - The necessity of longitudinal studies on such approaches	Further different study on the constructivist approach needs to be pursued. (A16) …I do not think this approach has been understood enough yet. Therefore, studies on this subject should continue. (A21
Loss of faith	-The approach having solved the problems	I continue to study because I believe that the study should be continued, as this approach can bring solutions to criticism in our country's education system. (A38)

According to findings of Table 6, it was determined that the views of participants who continue studies on this approach focus on 2 themes such as "development and Loss of faith". Participants seem to have continued studying on this approach because of the "Loss of faith" that it should be studied constantly, by this way the practice can be "developed" and that this approach brings solutions to the problems in the education system to be able to apply this approach effectively.

When the findings were examined within the scope of the research, it is seen that most of the participants are not carrying on their studies on this approach. As a result of our analysis of why they did not carry on their studies, 3 themes were created as "dullness, faddism, and Loss of faith" (Table 7).

It is stated that studies on this approach have not been carried on because of the reasons such as the fact that many studies related to this approach have been perceived under the theme of "dullness", the works are now perceived as being all the same, and the satisfaction given by many studies related to this approach.

It is understood that some participants stopped studying on this approach because they are now heading to more popular topics, this approach has lost its update and that is, they have found new hobbies.

It is seen that they did not study because of the "belief" that this approach could not solve the problems; the approach itself involves problems that arise from itself in practice, structure of education system and failure to implement due to anomalies in the system etc.

Table7. The Themes and Codes Related to the Reasons for not Continuing Studies on the Constructivist Approach

Theme	Code	
Dullness	- Having been studied a lot - Having been studied from all dimensions so no dimensions to study - Satisfaction - Starting to repeat research findings - Nothing new to be able to add to previous studies	I quit because there are so many studies on this approach and there is not a dimension to be investigated. (A11)
Faddism	- Directing attention to other topics - Dealing with more current topics -Having lost actuality of the approach	I directed my attention to other topics because more recent topics emerged. (A18)
Loss of fatih	- Cannot bring solutions to the problems - Anomaly in the system - Consisting problems in practice - Contextual practice of approach not being possible (political-economic etc.) - Continuation of old practices - Teachers not using this approach by focusing on exams - Inability to apply in the conditions of our country Anomaly in system	This approach has not brought solutions to the problems in our education system. So, I started to work on different subjects. (A23) Although this approach looks good, it is very difficult to implement because of the structure of our education system.

DISCUSSION AND CONCLUSION

The following results were obtained from this study in which the reasons and the extent of the increase and decrease of the popularity of an approach were researched.

As a result of the analysis of the data obtained from the survey, it was found out that there were very few studies on the constructivist approach in Turkey until 2004-2005, the number of studies started to increase rapidly after 2005, reached its peak in 2013 and it started to fall very quickly afterwards. As a result of the regression analysis carried out, the change in the constructivist approach in the databases showed a statistically linear trend and it came to conclusion that the decrease in the study numbers could continue in the next years. In the study data collected from Trend Google application reveals that the number of searches related to the constructivist approach shows a rapid increase in the world and then a decrease but the rise and fall in Turkey is more dramatic. So this approach in Turkey has a faster rise and fall. It is seen that the number of publications related to the constructivist approach has increased since 2004-2005. Blessinger, Reshef and Sengupta (2018) states that "Paradigm shifts may be the result of new

knowledge being introduced into the domain through new evidence or as a result of new ways of conceptualizing or thinking about a problem or as a result of fundamental changes occurring in society". With the implementation of the programs created by the Board of Education in 2005 based on the constructivist approach, the number of studies carried out in this regard seems to increase very rapidly. The results obtained above support the argument that the claim that "the paradigms rise rapidly but fall slowly" differed in Turkey at the beginning of the research by the researcher. As can be seen from the results, an approach rises and falls very rapidly in Turkey. This may be because of Loss of faith, faddism and losing intellectual curiosity about constructivism in Turkey.

An attempt has been made to search for an answer to why an approach begins to settle in a field. In this context, the question why the study on the constructivist approach started was asked. As a result of the analysis of the data, it has been understood that scientists started to study on this approach because of the reasons such as "intellectual curiosity, faddism, external history, Loss of faith and guidance of authority".

One of the most important characteristics that a scientist should possess is "intellectual curiosity and interest". Isaac Newton said that "I do not

know what I may appear to the world, but to myself I seem to have been only like a boy playing on the seashore and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary."An intellectual curiosity, an experimental skill, and in Ball's own words (2014),' it was defined as "The belief that you can start from anywhere to understand everything." It is noteworthy in this work that very few scientists emphasize that they have begun to work on constructivist approach by curiosity motive which is defined as a virtue and the main factor of the development of science and scientific thought. In the research, "external history" is the main reason for scientists to start working based on constructivist approach. Every science field has its own internal and external history. External history is about the relationship of problems in a country where scientific activities are living in that country. In a country, there is "a" problem in the education system, and if there are researches on "a" in scientific fields, there is an external history of scientific activities. This indicates that the relationship between the needs of the society and scientific production has been established (Tekeli, 2012).

With the preparation of programs in the field of educational sciences in Turkey based on constructivist understanding, there has been a great increase in the studies carried out on this subject. It can be explained in this way that the participants have started to study on the constructivist approach because of the implementation start of this program from 2005, problems in the implementation of this approach, and so on. What is interesting and expected here is that the educational system is influenced by the developments in the academic world, while the academic field in Turkey is influenced by the education system. Scientists should research and find out the suitability of the conditions of Turkey and apply them in education systems. However, after the application starts, the rightness or wrongness of it is researched and revealed.

One of the most remarkable results in the research is that scientists are "faddism" among the reasons to start working on a scientific approach. Under this theme, it has been determined that scientists started to work on this approach because of being new, trendy, everyone's working on this subject, being the most sought theme in review of literature, and having pleasure in studying new topics. Hallinger (2003) states similar thoughts about academic faddism that "Leadership models in education are subject to the same faddism that is apparent in other areas of education. Today's favourite brand is soon replaced by another". He says instructional leaderships at schools shaped much of thinking without critics in 1980s. As one of our biggest deficiencies as a country, we make "importation of information" in the field of information as it is in every area.

Another theme among the reasons for starting studies on the constructivist approach is "Loss of faith". Tellis (2017) states that Darwin evolution theory is still in impact because many people believe that theory could explain many things. In this study, it was found out that scientists believe that the constructivist approach can bring solutions to the problems and the anomalies in the education system and that it is more appropriate for today's conditions. In addition, some scientists have a belief in Rogers' view (1995) that this approach is better than the other approaches (relative advantage). Defining scientific revolutions as the replacement of the tradition of making an old science, Kuhn (1970) suggests that the choice between opposing views of science is largely a socio-psychological process. According to Thomas Kuhn (1970), the direction of scientific progress can change with the beliefs and socio-cultural structures of scientists. From this point of view, the scientific process we claim to create unquestionable results is in fact can change direction with our subconscious, attitudes, and decisions.

In the research, "development and belief" themes were found as reasons for the scientists to continue their study on the constructivist approach. Some scientists who do constructive approach-based research have the perception that this approach should be developed, and study should be continued in order to better understand the approach. Others continue studying on this approach, since they sustain the belief that this approach solves the problems after they have studied on this approach. The views of scientists on the need to continue their study on an approach they believe will bring solutions to the problems are appropriate behaviors for the perpetual structure of science.

All social scientists want to produce interesting and influential studies (Gray & Wegner, 2013). But by the times passed research articles run the risk of turning into a commodity: standard, mass-produced and ultimately boring and dull (Grey, 2010). Most scientists have found that they do not continue their study on the constructivist approach and the reasons for this are "dullness, faddisms and Loss of faith for not sustaining it. The most notable theme among the reasons why scientists quit working on the constructivist approach is "dullness". The fact that many studies have been done about this approach and the research findings have almost reached saturation, and the addition of something new to previous studies draws the scientist to dullness thus they study other subjects because of being satisfied enough with these studies. When the studies on constructivism are analyzed (some research results), it seems that there are many similar results. "Faddism" theme is also among the reasons for the abandonment of work based on an approach. The tendency of scientists to turn to other issues and the view that the approach has lost its update are among the reasons for abandoning an approach. According to Kuhn (1970), it is necessary for a person to have a tradition that he knows well enough to oppose to be able to innovate.

Whether it is in art or in science, innovation cannot be created in the void; it is done by opposing old traditions. From this point of view, those who are deeply committed to a certain mode of science can make radical changes ... this is the paradox or "dialectic" friction of the foundation of science… successful research requires deep commitment to the status quo. Considering this view, it is not anticipated that scientists who are enthusiastic about constantly studying in different fields because they are current and who are constantly considering scientific studies as hobbies can do effective studies. It has not been a coincidence that scientists changed study subjects constantly as a hobby in a system that changed 76 education ministers in 93 years between 1923 which was the declaration date of the Republic and 2016, and 15 structural changes in education system in 13 years.

Other theme which is among one of the reasons for not continuing studies on an approach is "Loss of faith". Concerns over the quality, objectives and ends of many scientific outputs and increase research overload in terms of scientific outlets and research publications (Donsbach, 2006) could be changed the beliefs of the researchers about the paradigm. Scientists stated that they quitted studying due to fact that this approach which they studied did not solve the problems, that the anomalies in the system prevented this, that the approach was theoretically appropriate, but it involved problems in practice and that the old approaches remained effective in the education system. In the study, in which teachers' beliefs about learning were analyzed by Bay and others (2013), they found that even though teachers adopted the constructivist approach, they still had to resort to behavioral approaches in practice. In other words, although the constructivist approach seems to be applied, it has been determined that this approach cannot be applied due to reasons such as the examination system, teachers' epistemological beliefs, etc.

The same processes are valid for those who worked by applying a constructivist approach. The fact that there are problems in practice despite the belief as being theoretically effective may prevent the studies from being carried out in this respect. Despite the increase in scientific research, the decrease in the studies on constructivism is proportionally higher than in the previous year. This shows us that the number of studies on constructivism has declined dramatically compared to the increasing number of scientific studies.

Consequently, an approach in Turkey does not show a rapid rise and then a slow decrease, contrary to what is expressed theoretically; it can be said that it shows a very rapid uptrend and a very strong downward trend. And in future we can predict the decrease will continue in coming years.

RECOMMENDATIONS

By comparing this study with different cultures, identities, similarities, and differences can be revealed. This study can be expanded with wider participants and considering different variables or phenomenon. It can be better to understand if the future researchers study a different phenomenon

in education in the context of paradigm shift. It can also be studied interdisciplinary.

In this study, only "Constructivism" phenomenon was studied. The research data are limited to the publications related to the case between 2000 and 2016. The publications in the research are limited to the studies in the specified databases.

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